



## **Strengthening rural and urban resilience to climate change and variability by the provision of water supply and sanitation in Chad**

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

#### **GEF ID**

10089

#### **Project Type**

FSP

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

LDCF

#### **CBIT/NGI**

CBIT

NGI

#### **Project Title**

Strengthening rural and urban resilience to climate change and variability by the provision of water supply and sanitation in Chad

#### **Countries**

Chad

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

AfDB

**Other Executing Partner(s):**

Ministry of Environment, Water and Fisheries

**Executing Partner Type**

Government

**GEF Focal Area**

Climate Change

**Taxonomy**

United Nations Framework Convention on Climate Change, Climate Change, Focal Areas, Nationally Determined Contribution, Paris Agreement, Climate Change Adaptation, Climate information, Ecosystem-based Adaptation, Climate finance, Adaptation Tech Transfer, Complementarity, Community-based adaptation, Climate resilience, National Adaptation Plan, Least Developed Countries, Mainstreaming adaptation, Livelihoods, Sustainable Development Goals, Local Communities, Stakeholders, Capacity, Knowledge and Research

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

Climate Change Mitigation 0

**Climate Change Adaptation**

Climate Change Adaptation 2

**Submission Date**

10/5/2018

**Expected Implementation Start**

7/1/2020

**Expected Completion Date**

8/1/2024

**Duration**

48In Months

**Agency Fee(\$)**

826,500

**A. FOCAL/NON-FOCAL AREA ELEMENTS**

<b>Objectives/Programs</b>	<b>Focal Area Outcomes</b>	<b>Trust Fund</b>	<b>GEF Amount(\$)</b>	<b>Co-Fin Amount(\$)</b>
CCA-1	Reduce the vulnerability of people, livelihoods, physical assets and natural systems to the adverse effects of climate change	LDCF	7,399,000	20,850,000
CCA-2	Reduce the vulnerability of people, livelihoods, physical assets and natural systems to the adverse effects of climate change	LDCF	1,301,000	6,950,000
<b>Total Project Cost(\$)</b>			<b>8,700,000</b>	<b>27,800,000</b>

## B. Project description summary

### Project Objective

The general objective of the PAEPA SU MR phase 1, which includes the project "Strengthening the resilience of rural and urban areas to climate change and variability through water supply and sanitation in Chad", is to help improve the quality of life of Chadian populations by increasing their access to drinking water and sanitation services, as well as through job creation, especially for the youth and women. It represents a total co-financing of €27.8 million. The specific objectives of this project, their expected results and associated costs are: The integration of climate change adaptation and subsequent updating of the Chad Water and Sanitation Master Plan (SDEA), as well as institutional capacity building for improved water management (diagnosis of the water and sanitation sector, institutional strengthening and staff training).

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
Component 1: Mainstreaming Climate adaptation into the National water and sanitation masterplan (WSMP)	Technical Assistance	Outcome 1.1. Climate resilient water and sanitation masterplan prepared and adaptive capacity built	1.1.1. Development and integration of climate change adaptation practices in the updating of the water and sanitation master plan  1.1.2. Development of technical guides for investments resilient to climate variability and change in the water and sanitation sector  1.1.3. Institutional capacity building to facilitate the integration of climate risks into the water supply and sanitation sector	LDC F	250,000	710,000

<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>
Component 2: Improved access to climate-resilient water supply and sanitation	Investment	Outcome 2.1: Increased reliability and improved quality of water supply	2.1.1. Construction of drinking water supply systems (including boreholes, reservoirs and solar energy distribution systems) for 34 unserved communities.	LDC F	7,605,000	22,690,000
		Outcome 2.2: Soil and water conservation practices undertaken by farmers/youth at selected project sites for improved source protection	2.2.1. Soil and water conservation (including reforestation activities), on approximately 1,100 ha of degraded land and associated water resources  2.2.2. Community awareness/capacity-building/support services for soil and water conservation/agroforestry/etc.			

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
Component 3. Strengthening climate information and early warning systems	Investment	Outcome 3.1. <b>Groundwater and surface water resources monitoring services provide information that can be used at the local level</b>	<p>3.1.1. Strengthening of the meteorological and climate observation network (ii) Extension of the groundwater and rainwater monitoring network (iii) Laboratory equipped to improve water quality monitoring (iv) Development of a strategy for the acquisition and development of climate data systems</p> <p>3.1.2. Provision of early warning systems that take into account climate, groundwater, the environment and socio-economic information over different time scales, as required</p> <p>3.1.3. Training of at least 20 personnel in the maintenance and repair of equipment, including effective techniques for interfacing with existing equipment</p>	LDC F	615,000	2,200,000

<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>
Component 4: Knowledge Management, Monitoring and Evaluation	Technical Assistance	Outcome 4.1. Capitalization and dissemination of best practices from project activities, capacity building initiatives and regulatory developments	4.1.1. (i) Compilation of best practices on applicable technologies for dissemination and replication by project partners (ii) Monitoring and evaluation system in place and operational and (iii) Operational publication of reports and information notes of the monitoring and evaluation system	LDC F	110,000	800,000
<b>Sub Total (\$)</b>					<b>8,580,000</b>	<b>26,400,000</b>
<b>Project Management Cost (PMC)</b>						
				LDCF	120,000	1,400,000
<b>Sub Total(\$)</b>					<b>120,000</b>	<b>1,400,000</b>
<b>Total Project Cost(\$)</b>					<b>8,700,000</b>	<b>27,800,000</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>Investment Mobilized</b>	<b>Amount(\$)</b>
Government	Government of Chad	In-kind	Recurrent expenditures	2,800,000
Donor Agency	AFD	Grant	Investment mobilized	7,000,000
Donor Agency	RWSSI	Grant	Investment mobilized	3,000,000
Donor Agency	GIZ	Grant	Investment mobilized	15,000,000
			<b>Total Co-Financing(\$)</b>	<b>27,800,000</b>

**Describe how any "Investment Mobilized" was identified**

The investments mobilized originate from the AfDB operations and co-financing from AFD, RWSSI and GIZ which will make significant contributions to the adaptation benefits described in the objectives of the proposed project. The indicative co-financing is based on conservative estimates that will be confirmed during the PPG phase. Additional resource mobilization will be undertaken during the PPG phase to strengthen the private sector engagement, impact and sustainability of the project results.

**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>Amount(\$)</b>	<b>Fee(\$)</b>
AfDB	LDCF	Chad	Climate Change	NA	8,700,000	826,500
<b>Total Grant Resources(\$)</b>					<b>8,700,000</b>	<b>826,500</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 (\$)**

200,000

**PPG Agency Fee (\$)**

19,000

<b>Agency</b>	<b>Trust Fund</b>	<b>Country</b>	<b>Focal Area</b>	<b>Programming of Funds</b>	<b>Amount(\$)</b>	<b>Fee(\$)</b>
AfDB	LDCF	Chad	Climate Change	NA	200,000	19,000
<b>Total Project Costs(\$)</b>					<b>200,000</b>	<b>19,000</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	0.00	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>

**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 4 Area of landscapes under improved practices (hectares; excluding protected areas)**

<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	0.00	0.00	0.00

**Indicator 4.1 Area of landscapes under improved management to benefit biodiversity (hectares, qualitative assessment, non-certified)**

<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 4.2 Area of landscapes that meets national or international third party certification that incorporates biodiversity considerations (hectares)**

Ha (Expected at PIF)

Ha (Expected at CEO Endorsement)

Ha (Achieved at MTR)

Ha (Achieved at TE)

Type/Name of Third Party Certification

Indicator 4.3 Area of landscapes under sustainable land management in production systems

Ha (Expected at PIF)

Ha (Expected at CEO Endorsement)

Ha (Achieved at MTR)

Ha (Achieved at TE)

Indicator 4.4 Area of High Conservation Value Forest (HCVF) loss avoided

Ha (Expected at PIF)

Ha (Expected at CEO Endorsement)

Ha (Achieved at MTR)

Ha (Achieved at TE)

**Documents (Please upload document(s) that justifies the HCVF)**

Title

Submitted

CCA-Results-Framework-GEF7-Chad-9896

CCA Core Indicators and Metadata-9896

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

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
<b>Female</b>	40,000	1,088,584		
<b>Male</b>	60,000	1,075,098		
<b>Total</b>	100000	2163682	0	0

Provide additional explanation on targets, other methodologies used, and other focal area specifics (i.e., Aichi targets in BD) including justification where core indicator targets are not provided

**Please note that the CCA Results-Framework and the CCA Core Indicators and Metadata Excel files were uploaded under Indicator 4 "Area of landscapes under improved practices" as there was no other place in the portal to upload these Excel files.**

## Part II. Project Justification

### 1a. Project Description

1) *The global environmental and/or adaptation problems, root causes and barriers*

Located in central Africa, the Republic of Chad straddles the Sahel and extends far into the Sahara Desert to the North. Its geographic location makes it particularly prone to climate change, notably extreme weather events from severe drought to devastating floods. With over three quarters of its population found in rural areas and depending largely on agriculture and livestock, the Chadian population is particularly vulnerable to such changes. This vulnerability is further exacerbated by the lack of administrative structures able to respond to, let alone predict, such events.

The need for understanding and predicting such events is particularly pressing as there has been consistent decrease in annual rainfall in the past 50 years, as well as increased variability, both spatially and temporally. The median average rainfall in N'Djamena was over 600 mm between 1950 and 1967, but less than 450 mm between 1968 and 1985. The 100 mm isohyet was on average about 200 km north of Lake Chad between 1950 and 1967, but less than 50 km from the lake after 1968. This impacts the ground water recharge, but also production strategies and accelerates the degradation of natural resources. Persistent drought has accelerated desertification in the north, leading to displacement of agropastoral areas. Water scarcity is of particular importance – there has been a noticeable decrease in flows in certain rivers, alongside the slowing groundwater recharge and erratic rain patterns.

These trends are only going to worsen, as climate change accelerates. Climatic models predict annual average temperature rises of 2.4°C by 2050, erratic rainfall patterns, and more intense and frequent weather related disasters (including drought and flooding). Despite its large area and spread over three climatic zones, the whole of Chad is predicted to see its mean annual temperatures rise by 2.4 C in 2050, with annual hot days (over 35°C) increasing by 44.1 days (RCP 8.5, High Emission). In terms of rainfall, the mean annual predictions vary greatly among regions and models, from -15 to +9mm per month by the 2090s. The projections under CMIP5 models overall suggest an increase in precipitations throughout the next 80 years (RCP 8.5)[1]<sup>1</sup>.

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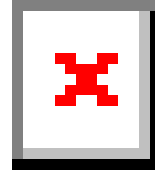


Figure 1: Projected Temperature (left) and Precipitation changes for Chad from 2040-2059 (Source: World Bank Group, 2020).

These changes may increase flood risk which already have grave impacts, but further leaving populations, agriculture, infrastructure, livestock and water supply and quality at risk. An increase in extreme events could also aggravate the endemic disease, further putting pressure on the populations. Finally, climate change will increase the anthropogenic pressure on freshwater systems, on which people rely not only for drinking, but also agricultural production, livestock farming and fishing.

Chad is particularly vulnerable to climate change, as evidenced by its ranking in the Global Adaptation Index (2017) (180th out of 181) and in the 2016 Climate Change Vulnerability Index (most vulnerable out of 186). The Global Adaptation Index takes into account exposure, sensitivity and ability to cope with climate-related risks[2]<sup>2</sup>. While exposure and sensitivity have remained fairly stable, its adaptive capacity rating has decreased over the last 25 years indicating the lack of social resources for sector-specific adaptation – notably healthcare, drinking water and sanitation and electricity. This is particularly visible in the poorest population and in the rural environment, reliance on natural resources are high and the overall access to services low. This vulnerability is all the more critical as existing administrative structures do not have the human and financial resources, capacities and means of action to respond. Irrespective of the projected frequency and intensity of floods and droughts, economic impacts are projected to increase even when the hazard remains constant because of increased exposure and vulnerability (Jiménez Cisneros et al. 2014). The main non-climate environmental pressures include population growth, deforestation, overgrazing, poaching, erosion, waste pollution (litter), soil pollution, brushfires and ground and surface water pollution[3]<sup>3</sup>.

As mentioned above, access to water and sanitation is a particular challenge in Chad, and is an important contributor to morbidity and mortality, and a critical factor in the country's vulnerability to climate change. Drinking water access is estimated at 52% and that of sanitation at 18% in 2015, compared to 21% and 7% respectively in 2003, well below the sub-Saharan African average (Figure 2). The analysis of the current drinking water consumption shows that the population coverage rate is still quite low despite the growth observed during the 2000s. The difficulty of access to drinking water has widened gaps in education, employment and political life between

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men and women, to the disadvantage of women, over time and space. Drinking water consumption per capita per day is 40 litres in urban areas and 15 litres in rural areas. Under these conditions, some households continue to rely on non-potable water sources (ponds, temporary ponds, rivers and traditional wells). Overall, Chad's water supply systems are largely dependent of shallow groundwater, which is sensitive both to falling water levels and pollution. Climate change will only exacerbate this situation, through water stress and increasing the population's vulnerability to waterborne disease.



Figure 2: Access to improved water source and sanitation facilities in Chad and Sub-Saharan Africa.

Finally, all of these issues are compounded by environmental degradation, such as land degradation deforestation, soil erosion, and desertification. Deforestation and erosion increase surface runoff, further decreasing groundwater recharge and increasing flood risks. Desertification not only has economic impacts (decrease in arable land, silting of wells), but also health impacts, as the rise in respiratory diseases. Finally, erosion silts up rivers and water points, further exacerbating water stress and decreasing water quality. All of these processes are clearly visible and common in Chad, notably due to the increasing pressure on the agro-pastoral sector. This leads to population migration, increased pressure on land (and conflict) from both farming and grazing, and overall, a feedback loop which perpetuates the issues throughout the landscape.

Many of the root causes to the vulnerability of Chad to climate change are socio-economic. Almost half of the Chadian population lives below the poverty line, and over 80% in rural areas. This is reflected in the low standard of living of a large portion of the population, including high levels of inequality, poor living conditions, poor health, high infant mortality rate, lack of general education. In addition, poverty is compounded with a growing population: the population is set to double by 2050, which will undoubtedly increase tensions around scarce resources such as water. Environmental degradation is more pronounced in poorer areas, with strong reliance on natural resources and anthropogenic pressures (e.g. substantial agricultural practices), and solutions are limited by poverty.

In the face of all this, Chad does not have the institutional power nor adequate infrastructure to cope. While reconstruction efforts are well in place after the 2010 civil war, there is need to rethink some of the policies and strategies in order to strengthen capacities in face of climate change and adaptability. In particular, the water sector requires attention. Rural areas are most affected by high population rates and poverty, but urban centres are also unable to cope with growing populations and needs for adaptation. The hydrometeorological network in country is seriously lacking, unable to provide accurate and / or reliable information, notably in terms of vulnerability, resilience and adaptation. Without this information, it is difficult to implement appropriate adaptation levels. Furthermore, local human capacity is limited as well, needing more training but also access to information.

It is this context that is at the root of Chad’s decreased ability to adapt rapidly to climatic variability, especially in terms of protecting and managing its water supply and quality. Ultimately, from this context, there are a certain number of political, institutional, financial, technological and information barriers that can be identified as key to overcome in order to increase Chad’s resilience Table 1.

Table 1: Summary of barriers

<b>Barrier</b>	<b>Description</b>
1. Inadequate legal, policy and institutional framework for climate change in water resources programs (NAPA 2010)	Despite the creation of the NAPA, its integration into national policies and sectoral development remains challenging. The lack of technical expertise and sustainable systems to produce and exploit climate change information and risk makes the creation and the implementation of climate change resilient policies limited. This also corresponds to the NAPA priority 8:
2. Weak knowledge base of climate impacts, risks and opportunities (NAPA Priority 4)	Communities in Chad are not informed on climate risks and as such have not integrated them into local development planning. There is little information gathered and disseminated on water stress and climate trends, as well as mitigation techniques. As such, there is little to no public awareness on the impacts of climate change, how to adapt and combat them, and how human activities can impact these. This is also Priority 4 of Chad’s NAPA (2010)
3. Limited adaptive capacity to cope with future climate events	The current meteorological and hydrological services do not gather nor disseminate sufficient or reliable information / forecasts, leaving communities and the economy unable to prepare for climate change. This is partly due to human resource and financial constraints on these services. This barrier was also identified and is seen in Chad’s NAPA - Priority 10.

4. Very low level of coordination of climate change adaptation initiatives	Efforts to coordinate climate change adaptation and mitigation measures and initiatives among various sectors are mostly punctual and reactive (instead of preemptive). While this is partially due to the lack of understanding of the issue (see barrier 1 and 2), there is also due to poor governance between national and local institutions.
5. Vulnerability to climate change and gender inequality	While many of the impacts of climate change on water resources will be borne on women, they are not fully integrated in the decision making processes (e.g. adaptation planning).

2) *The baseline scenario and any associated baseline projects*

This project is complementary to the Drinking Water Supply and Sanitation Programs in the Semi-Urban and Rural Areas of 11 Provinces (PAEPA SU MR), Phase 1 (2017-2022), funded by the AfDB. This baseline intervention's main objective is to improve the quality of life of the population, through their access to drinking water and sanitation services, as well as through job creation, notably for the youth and women. In particular, it looks to improve DWS and sanitation to achieve 95% and 50% coverage respectively and serve more than 6 million inhabitants. This project was set out to cover 11 provinces, However, due to funding restrictions, the approach was modified, in order to ensure a gradual coverage and starting with provinces with under 30% water access rates. As such, the retained areas were the semi-urban and rural populations of BET and the two Logones.

The project is divided into 3 components:

- A – Drinking water and sanitation development (81.6% of budget): Construction of boreholes, micro-irrigation systems, hand pumps, public latrines as well as the installation of piezometers. This infrastructure is coupled with IEC and water point and latrine management.
- B – Capacity building (3.24% of budget): Acquisition of materials for the General Directorate for Water and Sanitation (vehicles, computers, water quality control kits) as well as training of extension workers and craftsmen. Additionally, it includes two national workshops, information dissemination and a donor round table.
- C – Climate change activities (7.34% of budget): Youth and women support including training and equipment in matters of quarry operation (youth), solid waste collection (youth), latrine management (women), water supply operation and user association).

The proposed activities are fully complementary to this project, alongside the other complementary funding (African Development Fund, RWSII). As such, the activities and sites associated to the funding is allocated in order to avoid any duplication or repetition, as seen in the Incremental Reasoning section.

Additional associated baseline projects were identified during this Project Preparation phase notably:

- COM-NORD Project - Integrated development of Communities in northern Chad (EU, AFD, GIZ/BMZ [proposed]); this five-year project targets the BET provinces in the north of Chad and is part of Agenda 2030. Its main objective is to reduce the vulnerabilities of the BET local populations, in particular in matters of nutrition. It aims to contribute to the achievement of three of the SDGs, notably Goal 2 (zero hunger), 5 (gender equality) and 6 (clean water and sanitation). The project targets urban and peri-urban areas, focusing on vulnerable groups. The project will have a participatory and integrated approach, including interventions that focus on:
  - o Stakeholder local planning
  - o Implementation of priority services (notably water and sanitation);
  - o Support for local socio-economic development
  - o Community level health promotion
  - o Consolidation of institutional framework, notably in terms of strengthening decentralized services and civil society organizations.
- IDO Project - Improving access to drinking water in Chad (AFD, IDO, Schlumberger and City of Paris). This project focuses on the other target region: West and East Logones in the south. The main objective is to address the entire chain of elements to be put in place to convince village populations to take responsibility for their water points and therefore to ensure their long-term management. The interventions used include:
  - o Public awareness raising on water pollution, and domestic and community hygiene;
  - o The creation (or revival) of Water Point Management Committees (with monitoring);
  - o Implementing borehole drilling management within communities, as well as domestic and community sanitation management;
  - o Supporting the creation of community/village economic activities through the funds managed by the WPMC.

The identification of these projects has led to modification in co-financing, notably through the addition of ADF (USD 7,000,000) and GIZ (USD 15,000,000). As these projects will be run concurrently to the proposed GEF activities, the outputs and lessons learned through their implementation will help feed into Component 4: Knowledge Management, Monitoring and Evaluation.

3) *The proposed alternative scenario with a brief description of expected outcomes and components of the project*

The GEF project, to be implemented over 4 years, comes as a support to the PAEPA SU MR project; it is **geographically complementary**, supporting semi-urban and rural areas which have yet to benefit from investments, providing a scaling up of the baseline project. Furthermore, it will help better address the issue of climate change risk and adaptation, which will therefore ensure **the sustainability of the baseline project** and the overall resilience of the Chadian population. Specifically, it will help integrate risk reduction measures that deal with effects of the modification of hydrological regime and desertification such as:

- Short and medium term measuring and forecasting;
- Integrating long-term forecasting into policy
- Integrating climate change concerns into investment decision making, resource sharing, soil management and conservation decisions.

The proposed funding will help increase the resilience of the local communities in face of long-term climate change and associated hazards by reducing vulnerability, increasing adaptability and improving the transfer of adaptation technologies. The project is designed along four components aimed at ensuring climate resilience of the base project and addressing the priority needs identified in the NAPA. Components 1 and 2 relate directly to the baseline intervention while 3 and 4 aim to increase knowledge and monitoring systems to enable effective and climate resilient water management. These are fully described in the figure and text below.

There have been some wording changes in the project framework since the PIF, which were the result of stakeholder consultations: at the inception workshop of the project preparation phase, concerns were raised regarding wording of certain components (3), outcomes (2.1, 3.1, and 4.1) and outputs (2.2.1). These concerns were taken into account and further discussed during the stakeholder consultations. The changed wording in this document is therefore a result of this process, and offers clearer, more realistic, more actionable and targeted phrasing in line with stakeholders needs and concerns. The present framework was discussed and validated at the final stakeholder workshop, and supported by the Chadian government.

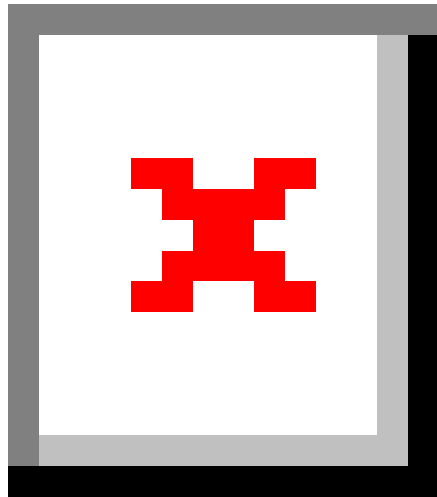


Figure 3: Proposed project's theory of change

Component 1: Integration of climate change adaptation into Chad's Water and Sanitation Master Plan (WSMP)

This component aims to develop an updated Master Plan which includes climate change resilience, as well as capacity development. GEF/FPMA will be used to support the mainstreaming of climate change adaptation: from policy to the project cycle, when updating Chad's National Water and Sanitation Master Plan. This is a prerequisite for smart climate investments. Taking climate change into account at the beginning of the project cycle would prevent decisions of an irreversible nature from being taken. This implies integrating into the reflection from the initial phases of the project to the programming, implementation and operation, the risks, issues and decision-making criteria related to the impacts of the CC.

*Outcome 1.1 – Development of a master plan for water and sanitation resilient to climate change and strengthening of adaptive capacities*

The further activities and outputs will depend on the updating of the WSMP, as it will provide the guidelines on how to respond to climate change adaptation (e.g. sites, technical criteria, investment strategy). In parallel there is a need to ensure institutional capacity building in the water and sanitation sector. This will be provided through the development of technical guidelines to assist project teams in climate risk management in the context of DWSS investment projects, as well as training of 40 water professionals. These steps will require an in-depth analysis and diagnosis of the sector in order to provide relevant and targeted information and solutions, as well as the development of indicators and monitoring scheme.

Component 2: Improved access to climate resilient water supply and sanitation

Supply and demand of water in Chad is variable based on temperature, which in turn effects rainfall patterns, evapotranspiration, and surface and groundwater quantity. As such, there is a need to consider the best DWS solutions for each site.

*Outcome 2.1 – Increased reliability and improved quality of water supply*

This project targets 34 underserved areas, and the allocated funds will allow to move forward with the identified DWS installation, from choice of project owner, through tendering, design, construction and works.

*Outcome 2.2 – Soil and water conservation practices undertaken by farms/youth at selected project sites for improved source protection*

In parallel with the installation of infrastructure, it is crucial to instill soil and water conservation practices in order to ensure the durability of the supply and quality of the water, as well as a sense of ownership by the communities served. As such, the project will use participatory planning and management in the 34 locations to achieve this goal. In order to ensure that the most appropriate techniques and measures are used, characteristics (e.g. physical, socio-economic) of each location will be analyzed in order to choose the best techniques within a shortlist of 12 pre-identified soil conservation measures (all detailed in the ProDoc, under 4.4.2), and detailed strategies including costs, expected effects, modalities and justification produced for each location. These strategies will be implemented, focusing on the involvement of women and young people.

In parallel, there will be a broader awareness raising campaign launched, outlining the benefits of these interventions in order to ensure the full support of the larger population (beyond direct beneficiaries).

### Component 3: Strengthening climate information and early warning systems

The production of rural populations of Chad is tightly correlated with the variability of rainfall, groundwater quality and runoff. While a seasonal forecasting system is in place (controlled by ABN-AGRHYMET-ACMAD), it does not provide temporal rainfall distribution. To better understand the status and threats posed to the quality of the aquifer and groundwater, there is a need for an improved weather, groundwater and water quality monitoring system, including an early warning of the onset of damage to the resource, notably on a local level.

#### *Outcome 3.1 – Groundwater and surface water resources monitoring services provide information that can be used at the local level*

In order to achieve this outcome, there is a need to understand the needs and gaps in terms of quantitative (e.g. groundwater levels) and qualitative data (e.g. water quality), but also in terms of dissemination of these data. A thorough analysis of this will lead to a strategy on how to acquire and centralize such information, but also manage, edit, publish and share it.

Specific sites – the Logone River and Lai Water Analysis Laboratory – will be provided with equipment (e.g. 6 piezometers, 100 rain gauges), and training (with follow-up) provided.

The definition of the early warning system will be subject to a feasibility study (including costs and cost recover), and support provided for its establishment. In parallel, a capacity gap analysis will define the type of training/hiring needed, as well as office equipment (incl. cars, tools) that are needed to support such a system (at least 20 officers to be trained).

### Component 4: Knowledge management, monitoring and evaluation

#### *Outcome 4.1 – Capitalization and dissemination of best practices from project activities, capacity building initiatives and regulatory developments*

The knowledge and lessons learned can be used to further inform water access issues in other areas of Chad. By ensuring an effective and reliable monitoring and evaluation scheme, such information can be captured and used in the long run, and properly evaluated the true impact of the project in terms of climate change adaptation and livelihood improvement. As such, an ongoing compilation of best practices on applicable technologies will be collected for dissemination and replication by project partners throughout the duration of the project. The M&E system will be defined at the start of the project and incorporate the monitoring of the dissemination of information.



4) *alignment with GEF focal area and/or Impact Program strategies*

The project responds to the climate change adaptation for GEF/LDCF programming strategy. Its objectives and interventions are directly in line with the three objectives of the Climate Change Adaptation Fund (CCAF) 2018-2022.

- *Objective 1: Reduce vulnerability and increase resilience through innovation and technology transfer for climate change adaptation* - the project will provide increase capacity of the hydrometeorological system, allowing for effective, targeted and early warning climate information. Specific improvement includes:
  - o Monitoring and evaluation strategies and adaptive management
  - o Supply of piezometers and rain gauges
  - o Improving information and dissemination of information on water quality
  - o Capacity building by training personnel at local and national levels.
- *Objective 2: Adaptation to general climate change and resilience to systemic impacts* - the project focuses both on improving safe water and sanitation access and awareness raising on such issues in vulnerable communities in disaster prone area, as well as promotes water source protection and degradation reduction measures.
- *Objective 3: Create the conditions for effective and integrated adaptation to climate change* – the project both helps reinforce institutional capacity, notably by updating the WSMP to combat climate change, but also includes training and awareness-raising on climate resilient WASH measures at national and local levels.

5) *incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and co-financing*

The overall aim of the GEF project is to ensure that the AfDB baseline project is *climate resilient*. This is done in accordance with Chad's NAPA priority adaptations, and includes additional investment in sustainable infrastructure, incorporation of climate change in national water and sanitation master plan, increasing public awareness

thanks to WASH committees, improving the groundwater management through better monitoring and information dissemination, as well as establishing early warning systems. It geographically and technically complements the project.

The following table explicates how the GEF project will add to the current baseline project by component, along with the associated cost.

Table 2: Incremental project cost reasoning

Current scenario	Scenario with GEF financing
<b>1. Mainstreaming Climate adaptation into the National water and sanitation masterplan (WSMP)</b>	
The WSMP 2003-2020 is coming to an end, a new version of the document will be updated, however this version may not fully integrate adaptation measures to climate variability	The new WSMP will incorporate climate change adaptation practices into its update.
The lack of documentation on investments that are resilient to climate variability will hinder the development of the new DWS and therefore the development of suitable DWSS facilities.	The development of technical guides for investments resilient to climate variability and change in the water and sanitation sector will be an asset for the updating of the WSMP and for the effectiveness of water managers, who will find complete and practical documentation.
Chad's institutional capacity on water management may not be sufficiently strengthened and water management problems among existing stakeholders may persist.	Institutional capacity building to facilitate the integration of climate risks in the water supply and sanitation sector included in the GEF financing (training of 40 water professionals) will enable efficient water management at national and local levels.
<b>Co-financing: \$710,000</b>	<b>GEF Funding: \$250,000</b>
<b>2. Improved access to climate- resilient water supply and sanitation</b>	
34 localities identified by PAEPA SU MR will not have sufficient funding to build safe and climate-resilient DWS.	The construction of 34 drinking water supply systems for unserved Logones and BET communities (including boreholes, reservoirs and solar energy distribution systems) will be provided by GEF funding.
Soil protection is currently a major problem in Chad. Drilling could thus take place on degraded areas that do not allow the preservation of water resources in the long term.	The soil and water conservation programme (including reforestation activities) on about 1,100 ha of degraded land associated with water resource conservation will make water resources sustainable and more resilient to climate change.

<b>Current scenario</b>	<b>Scenario with GEF financing</b>
Stakeholders will not be aware of soil conservation and will therefore allow degradation to continue, either by contributing to it (overgrazing, deforestation...) or by doing nothing (not fighting against desertification)	Community awareness, capacity building and support services for soil and water conservation will enable, in addition to rehabilitated land, sustainable management of groundwater resources.
<b>Co-financing: \$22,690,000</b>	<b>GEF Funding: \$7,605,000</b>
<b>3. Strengthening climate information and early warning systems</b>	
The current weather and climate observation network has several gaps that may not be filled. Existing laboratories are under-equipped and measurement networks are not sufficiently developed. Furthermore, data acquisition, interpretation and dissemination strategies do not allow for comprehensive monitoring of surface or groundwater	The strengthening of the meteorological and climate observation network and the extension of the groundwater and rainwater monitoring network, as well as the rehabilitation of the Lai laboratory, will improve water quality monitoring and allow the development of strategies for the acquisition and development of climate data systems.
The development of early warning systems in Chad will be compromised. Chad will not have an early warning system capable of anticipating droughts or lack of groundwater.	Provision of early warning systems that take into account climate, groundwater, the environment and socio-economic information over different time scales, as required
Chad's weather and climate observation networks will continue to deteriorate, the lack of operation, maintenance and upkeep of measurement and data acquisition equipment is one of the reasons for the early obsolescence of systems.	Training at least 20 officers in equipment maintenance and repair, including effective techniques for interfacing with existing equipment, will make the new data acquisition network efficient and sustainable.
<b>Co-financing: \$2,200,000</b>	<b>GEF Funding: \$615,000</b>
<b>4. Knowledge management, monitoring and evaluation</b>	
The advances and best practices of the PAEPA SU MR project will not be disseminated accordingly. The project's feedback and good practices will not be reproducible by partners and similar projects.	The compilation of best practices on applicable technologies for dissemination and replication by the project partners will provide feedback to share knowledge that will benefit all other projects of this type. The monitoring and evaluation system will be in place and operational with reports and information notes from the monitoring and evaluation system.
<b>Co-financing: \$800,000</b>	<b>GEF Funding: \$110,000</b>

In addition, the GEF project will cover a small portion of project management (\$120,000; \$1,400,000 provided by co-financing), by topping up the PAEPA SU MR PMU resources, and ensuring that the project evaluation and auditing is carried out. It should be noted that less than 2% of the requested funding is allocated to project

management, ensuring that most of the GEF funds go directly to implementation and additionality, as per the guidelines. This is further evidenced in the table below which outlines the costs associated to the baseline project as well as the GEF funding requested

Table 3: Incremental costing for the proposed GEF project.

<i>Component</i>	<i>Funding Source</i>				<i>Requested GEF funds</i>	Total
	<i>Recipient Gov</i>	<i>ADF Grant</i>	<i>RWSSI</i>	<i>GIZ</i>		
<i>Component 1</i>	310,000		400,000		<b>250,000</b>	960,000
<i>Component 2</i>	1,490,000	5,000,000	1,200,000	15,000,000	<b>7,605,000</b>	30,295,000
<i>Component 3</i>	600,000	800,000	800,000		<b>615,000</b>	2,815,000
<i>Component 4</i>	400,000	200,000	200,000		<b>110,000</b>	910,000
<i>Project management cost</i>		1,000,000	400,000		<b>120,000</b>	1,520,000
<i>Total</i>	2,800,000	7,000,000	3,000,000	15,000,000	<b>8,700,000</b>	36,500,000

6) *global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF)*

The main adaptation benefits of this project are the direct benefits created for the beneficiaries through the new and/or improved access to safe drinking water and sanitation. These include:

- Time savings from closer and cleaner water supply and waste disposal: water related chores can take up to 6 hours in a day, and are mostly borne by women and children. This time saving can be valued at the daily salary found in rural and semi-urban areas. It also includes the avoided costs of working days for parents in event of child illness.

- Health benefits through the reduction of waterborne diseases. This impacts not only the direct beneficiaries but also the health system (less pressure on the medical personnel, facilities). For the direct beneficiaries, indirect benefits from less vulnerability to waterborne diseases is saved income (less medical expenses) and time, therefore offering increased economic opportunity.
- Education benefits, as it will help reduce school absenteeism and drop-outs. This will mostly benefit girl children who are often more associated to water related chores and impacted by poor sanitation facilities.
- Environmental benefits, mainly through the protection of the aquifers and other water resources (both thanks to sanitation services, but also the conservation measures).

Furthermore, the awareness raising and associated training will improve overall understanding of the risks associated to climate change and the actions that can be taken to mitigate these or adapt to them. In particular, vulnerable groups – including women and youth – will be priority beneficiaries. This benefit will be not only generated in the local communities, but pervasive throughout the system thanks to the institutional change (updated WSMP) and capacity building. This will help promote the incorporation of climate change risk and adaptation in further strategies, plans and law enforcement, all aided by the setting up of an effective and sustainable weather and water monitoring system.

All of these actions and benefits will help Chad achieve their national and international SDG 6 targets.

#### *7) innovativeness, sustainability and potential for scaling up.*

As outlined at the PIF stage, the main innovation and potential for scaling up lies in the basic approach of this project – notably creating a replicable model for mainstreaming climate change risk and vulnerability in arid areas to be used at a national level. This is facilitated through an innovative multifaceted approach, notably institutional change (Component 1), a dual approach in target areas of infrastructure provision (e.g. drinking water access) and awareness raising (Component 2), and the development of a reliable and targeted water and climate monitoring and early warning system using technology, capacity building and awareness raising (Component 3). Furthermore, certain elements of the project (e.g. infrastructure development) is already tried and tested, ensuring that some of the scaling up potential is practically foolproof. Other elements – as the conservation techniques and training – will benefit from an in-depth gap analysis, strategy development and M&E program, ensuring a thorough and practical documentation which can be referred to for further deployment in the provinces.

The sustainability of the project is crucial and depends on the ability of the project to strengthen institutions and ensure its investment and ownership, during and after the project, in order to maintain the DWSS systems as well as the Hydromet systems. While financial sustainability will depend on government budgets, other safeguards have been put into place:

- Strengthening institutional capacity: institutional capacity will need to be looked at on multiple levels – local up to national, communities, private sector, CSOs, etc. WASH training will be done at the local and national levels. Importantly, youth participation will be encouraged to further ensure sustainability.
- Systems strengthening with sustainable funding for post-construction support: Part of the project design involves differentiated tiers tariff studies as the creation and collection of tariffs was raised as a concern. This is crucial as these tariffs will directly benefit local communities and the maintenance of their infrastructure.
- Strengthening the representation of water user interests in watersheds and local management platforms: CSOs will be encouraged and promoted to participate in the resource protection plan development.
- Strengthening civil society organizations' participation: Local communities will be involved in site selection, WASH committee establishment, key monitoring and operational data collection, and equipment safety.
- Strengthening the management, monitoring of private sector assets and supply chains for rural DWS: Sub-project memoranda of understanding will be signed to ensure asset management.
- Strengthening the operation and maintenance of meteorological, groundwater and water quality monitoring systems: such systems require technical and precise maintenance and associated workforce. As such a long-term strategy for the operation and management of these information systems will be developed.

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[1] World Bank Group. Chad – Climate Change Projections. *Climate Change Knowledge Portal*. Date accessed: 03/2020.  
<https://climateknowledgeportal.worldbank.org/country/chad/climate-data-projections>

[2] Source:<https://gain.nd.edu/> consulted on 25/04/19

[3] <http://adaptation-undp.org/projects/community-based-climate-risks-management-chad>, accessed July 7, 2017

## 1b. Project Map and Coordinates

**Please provide geo-referenced information and map where the project interventions will take place.**

The intervention areas are located in the north of Chad, in the Borku, Ennedi, Tibetsi province, and two provinces in the South: Western Logona and Eastern Logones. The project's specific intervention sites were identified by the Government of Chad during the previous phase of PAEPA SU MR. Thus, all the mandatory studies prior to implementation - in particular the technical feasibility studies (e.g. network plans) and environmental and social impact studies – have already been carried out. The requested GEF funds come to complement investments already made.

**Project Map**

The project's intervention sites were identified by the Government of Chad during the previous phase of PAEPA SU MR. These sites were chosen through a consultative process, and all of the technical feasibility studies (e.g. network plans) and associated environmental and social impact studies have already been carried out.

The map identifies the location of each of the locations where GEF funding will be allocated, notably for the DWS systems, details for which are given in Table 1.

The sites are located in 5 provinces which currently present the lowest drinking water access in the country: Eastern Logone (27%); Western Logone (16%); Borkou (19%); Ennedi West (8%); Tibesti (5%) (Department of Drinking Water Supply, 2017).

The entire population of these districts are considered as beneficiaries; using the INSEED projections based on the 2009 Demographic and Household survey, this amounts to approximately 2,164,183 in 2017- 50.7% of these beneficiaries are women.

Descriptions of each of these provinces can be found below, starting by the three provinces in the North of Chad, and followed by those in the South.

Borku Province

**Geography:** The Borku Province has an area of 236,000 km<sup>2</sup> and covers 18.38% of the national territory.

**Climate:** This province is known for its extreme climatic conditions: there can be no annual rainfall, low humidity and very high temperatures.

**Water resources:** Only the important groundwater resources of Borku allow to engage in agricultural practices: there are no rainfed crops. Irrigated agriculture thanks to the groundwater resources of the Borkou depression, allows it to satisfy the food needs of local populations and export market gardening products, grapes, olives, figs, dates, to other provinces. Access to drinking water in the majority of villages is a worrying issue, with only 16% of the population served.

**Socio-economic aspects:** The Province has almost no infrastructure (schools; water, sanitation, etc.). The Province exports agricultural products to domestic markets and neighbouring countries.

#### Ennedi West

**Geography:** The Province of Ennedi West is subdivided into two Departments: Fada (capital cities: Fada) and Mourtcha (capital city of Kalaït). This Province has an area of 34,824 km<sup>2</sup> and an estimated population of 69,000 inhabitants in seven sub-prefectures.

**Rainfall and vegetation:** Low rainfall (0 to 100mm per year) increases desertification. The vegetation is sparse but the existence of several oases in its northern part, where water is available on the surface and underground, allows the exploitation of crops (date palm and market gardening).

**Socio-economy:** The Province of Ennedi West is a breeding area where all species of domestic animals except pigs are raised. Insufficient water and grazing conditions lead pastoralists to move to the Archei area (the fauna reserve in Fada/Archéi or those still in the works, such as Ouadi Chile and Aga Dibé) and Torboul. This displacement puts pressure on resources. The Province has some infrastructure, in particular for the DWS (water towers and boreholes).

#### Tibesti Province

**Geography:** The Tibesti Province is one of the largest in the country with an area of about 200,000 km<sup>2</sup> or 1/6 of the national area. It borders two countries: Libya in the north and Niger in the west. The population of the Province is estimated at more than 41,000 inhabitants.

**Climate:** The climate is classified as arid desert in the whole Province. Rainfall is very low or non-existent.

**Water resources:** Tibesti Province has important water resources and irrigable land estimated at 284,103 ha.

**Socio-economic aspects:** Agricultural practices are centred around oases that provide spring water. The Province is also favourable to cultivating crops which thrive in Mediterranean and tropical climates. The main types of crops, traditionally irrigated through *chadouf*, are market gardening, arboriculture and cereal cultivation. Tibesti Province has important mineral resources (gold, uranium, oil), but also therapeutic water sources renowned for curing certain diseases.

#### Western Logone

**Geography:** The Province of the Western Logone is located in the south of the country, it borders Cameroon and is divided into 4 Departments: Dodge, Lake Wey, Guéni and Ngourkosso. It has 21 Sub-Prefectures.

**Climate:** The province is characterized by relative humidity and has a Sudanese climate. Precipitation varies from 900 to 1200 mm/year and is spread over two seasons:

- rainy season from May to October characterized by heavy rainfall;
- dry season from November to the end of April.



**Vegetation:** It is mainly composed of savannah or wooded savannah. Most of them include classified forest formations (Déli, Koutou).

Eastern Logone

**Geography:** Located in southern Chad, the Province of Eastern Logone covers an area of 28,035 km<sup>2</sup> and has a density of 33 inhabitants/km<sup>2</sup>, with 51.28% of women and 80% of young people. It is composed of 6 departments, 23 sub-prefectures, 23 municipalities, 42 cantons and 1324 villages.

**Climate:** The Province of Logone Oriental has a transitional climate between Sudano-Sahelian and Sudano-Guinean characterized by an average rainfall ranging between 800 and more than 1200 mm (for the department of Nya-Pendé) and temperatures between 26°C and 31°C. The Province is characterized by a rainy season of 5 to 6 months (between May and October) and a dry season of 6 to 7 months.

**Socio-economic aspects:** At the border, the main food crop is cassava. Further north, millet and sorghum are the main sources of subsistence. Commercial cotton and groundnut crops are concentrated around the city of Doba.<sup>[1]</sup> Oil fields have been exploited via a 1,070 km-long pipeline commissioned in 2003 that connects the region to the Cameroonian coast at Kribi. However, access to safe drinking water and sanitation facilities remains insufficient. In addition, there are low literacy rates, waterborne diseases, land conflicts and conflicts between farmers and herders.



Table 1: Main characteristics of the DWS funded by the GEF

Areas serviced	Province	Water tower capacity (m3)	Pumping station	Network linear (m)	Fountain Terminals	Sanitation (latrines)	Piezometers
<b>Dodinda 1 and 2</b>	Western Logone	100	1	2045	14	60 (distributed in throughout Western Logone intervention area)	
<b>Lolo</b>	Western Logone	50	1	3489	7		
<b>Kana and Neighborhoods</b>	Western Logone	100	1	3044	10		
<b>Kana Madé</b>	Western Logone	30	1	1637	3		
<b>Deli</b>	Western Logone	100	1	5472	14		
<b>Goundeye 1 and 2, Barbo, Kere</b>	Western Logone	50	1	4047	6		
<b>Doman 1 and 2</b>	Western Logone	30	1	2498	4		
<b>Dono, Begreu, Mainani, Bagtchama</b>	Western Logone	30	1	2657	4		

<b>Mendoubadou</b>	Western Logone	50	1	2767	8		
<b>Massa 2-3-4</b>	Western Logone	50	1	2233	7		
<b>Doiti and Benedo</b>	Western Logone	30	1	2159	6		
<b>Bao</b>	Western Logone	50	1	4254	7		
<b>Andji</b>	Western Logone	100	1	3553	11		
<b>Beri, Baikoro, Namti</b>	Western Logone	50	1	2766	6		
<b>Moussoum 1 and 2, Ngara Moussoum</b>	Western Logone	50	1	4802	6		
<b>Saar Gogne</b>	Western Logone	50	1	2831	6		
<b>Central Sawa, Sawa gogo, Beala, Guelmare, Dosaw, Guelkoura</b>	Western Logone	50	1	3224	8		
<b>Pius 1 and 2</b>	Western Logone	100	1	3403	11		
<b>Bekiri</b>	Western Logone	100	1	2318	8		
<b>Ndouh 1 and 2</b>	Western Logone	100	1	3094	11		
<b>Nama</b>	Western Logone	50	1	3606	6		
<b>Amoul</b>	Borku	50	1	3645	7	2	
<b>Koukourou, Faya</b>	Borku	30	1	2591	4	3	2
<b>Kirdimi</b>	Borku	50	1	2940	6	1	
<b>Yarda</b>	Borku	50	1	1595	6	2	
<b>Yebibou</b>	Borku	40	1	2086	5	1	
<b>Aumchaloba Goume</b>	Borku	30	1	2048	3		
<b>Bardai</b>	Tibesti	50	1	3257	6	3	2
<b>Zoumri</b>	Tibesti	50	1	3300	5	2	

<b>Onianga Saker</b>	Ennedi West	30	1	1981	4	1	
<b>Fada</b>	Ennedi West	100	1	2443	11	3	2
<b>Weyi</b>	Ennedi West	30	1	1060	3	1	
<b>Gouro</b>	Ennedi West	50	1	2093	6		
<b>Teby</b>	Ennedi West	30	1	1388	3	1	

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[1] Republic of Chad, "Technical consultation for the validation of 2017/2018 forecast production and 2016/2017 ex-post cereal and food balances and 2017/2018 forecast production in the CILSS and West African countries" (Bammako (Mali), November 2017).

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[1] Republic of Chad, "Technical consultation for the validation of 2017/2018 forecast production and 2016/2017 ex-post cereal and food balances and 2017/2018 forecast production in the CILSS and West African countries" (Bammako (Mali), November 2017).

**1c. Child Project?**

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

**2. Stakeholders**

**Select the stakeholders that have participated in consultations during the project identification phase:**

**Civil Society Organizations** Yes

**Indigenous Peoples and Local Communities** Yes

**Private Sector Entities** Yes

**If none of the above, please explain why:**

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

During the Project Preparation phase, inception, monitoring and validation workshops were organised in order to ensure the full participation of stakeholders in the design and preparation of the project. In parallel, local stakeholders were consulted in on-site focus groups in the Logones provinces, in order to present and discuss objectives, activities and local needs/interest in the project; these discussion groups were at times sub-divided in order to gather more targeted information from vulnerable groups (e.g. women). Further bilateral discussions with key stakeholders were also held in order to fully understand the baseline situation, needs of local populations and gaps to be filled.

The continued direct involvement in the project will be the responsibility of the project management team; it will be facilitated through a Memorandum of Understanding to be signed between MEWF and each governmental and/or non-governmental institution that will substantially participate in the implementation of the project.

Awareness raising and training are integral parts of this project and as such, inherently require participation and information dissemination with a number of different stakeholders. Communication aspects are therefore essential, and must be tailored to each stakeholder and locality. For instance, a section of the budget for Component 2 is dedicated to the study of tailored stakeholder and intervention area awareness-raising and training methods in the first year of project implementation.

Targeted information dissemination activities will be used in order to ensure that all stakeholders, from local to national levels, are kept informed on the progress, achievements and lessons learned of the program. For instance, at the national level, all reports (M&E, financial) will be available to decision-makers, politicians and relevant ministries, as well as national workshops/project meetings. At the provincial level, the technicians and MSU will have project meetings and specific technical trainings). At the level of the WUA and local authorities, local meetings on the infrastructure, literature on the project and direct involvement of the MSU will ensure full engagement. Finally, local residents of target communities as well as the greater public will be targeted through local meeting, project brochures and advertising campaigns (e.g. billboards).

The role and responsibilities of the CSOs is detailed below:

- Implementation of soil restoration and conservation activities

- Capacity building; Public awareness; Social mobilization

- Training of WUAs / Community organisations;

- At the interface between government and community activities in the field of resource protection and as catalysts for post-construction support.

Identify innovative approaches for specific DWSS activities, drawing on their in-depth knowledge of local communities;  
Encourage the implementation of projects that meet local needs;  
Ensure continuity of work on the project, especially when implementing agencies lack capacity.

## 1. National level

### 1.1 The Ministry in charge of water resources and the Hydraulics department

The Ministry in charge of water resources is responsible for the implementation of water policy throughout the country. Water is a natural resource that must be preserved.

Drinking water is under the responsibility of the Hydraulics Department. It is a service of the ministry in charge of water. The Hydraulics Department has implemented the Secondary Centres Project (SCP) with the support of development partners. This project entrusts the management of drinking water to local populations.

### 1.2 The external support staff of the WUAs: The Management and Support Unit

**The Management and Support Unit (MSU).** It is composed of specialists to whom the State has entrusted the role of monitoring, advising and accompanying the Water Users Association (WUA). It is responsible for the technical and financial follow-up of the WUAs. It has an advisory role with WUAs and operators (centre managers). The GCCAs are remunerated by a monthly fee, fixed by agreement between the WUA and the GCCA and the State.

#### ■ **The technicians:**

- **The maintainer**, a specialist selected on the advice of the MSU who ensures the proper maintenance of the facilities and equipment. He intervenes in the event of a problem or failure. A contract is established between the WUA and the maintainer to guarantee his services and payment. The maintenance technician is a versatile technician capable of managing mechanical, electronic and plumbing installations.
- **MSU trainers** who train fountain operators and operators.

## 2. Provincial level

**DELEGATE REPRESENTATIVE OF THE MINISTRY IN CHARGE OF WATER AT THE PROVINCIAL LEVEL "HEAD OF WATER AND SANITATION SECTOR".**

From an institutional point of view, the Delegate is the representative of the Ministry in charge of water at the provincial level. He also represents the Hydraulics Department.

The Head of Water and Sanitation Sector intervenes cases:

- Problem of water management in the village;
- In addition to the MSU in complex cases;
- As an arbitrator in the event of a conflict between the MSU, the maintainer or local authorities;
- As a higher authority in case of disagreements between the WUA and local authorities (village chiefs, with the canton chief, with the sub-prefect, a brigade chief...).

### 3. Local level

The Handbook of the Water Users Association (WUA), defines a list of stakeholders related to water management:

- **Users**, the main actors in water management, are the inhabitants (women, men, young and the elderly), who buy and use drinking water supply (DWS) services. They are members by right and have the responsibility to contribute at their level to the proper functioning of the supply.
- **Delegates** elected by the inhabitants of each district (or each village member of the WUA when there are several villages). They represent users, facilitate discussions and organisation  
around water for the WUA.
- **The committee, composed of elected delegates**, is responsible for water management. It is the decision-making body of the WUAs.
- **Operators and fountain workers** employed by the WUA. They are responsible for the proper functioning of the water supply and ensure the sale of water. They are in charge of production, network and supply up to the standpipes. They can be villagers, or private companies (either under lease or under management)
- **Local authorities** (traditional chiefs and administrative officials) are also actors in water management.
- **Development partners** who have financially and/or technically participated in the implementation of the water project and support the WUAs. It is also the foreigners who came to work with the project and passed through the villages, the people who in one way or another prepared documents for water management.

#### 3.1 Users

Users' rights :

- Be informed about the management of the WUA (financial situation, voted decisions)
- Speak at WUA meetings and General Assemblies (GAs);
- Know the financial situation of the WUA (the income, expenditure and amount of savings from the WUA to the bank).;
- Buy water at the station;
- Elect delegates to represent them and vote on their behalf during GAs.

They are obliged to:

- Pay a fixed price for water;
- Respect the rules of use decided by the village assembly;
- Contribute to the maintenance and cleanliness of the hydrant (supervise livestock, take care of cleanliness);

### 3.2 The Delegates

These were chosen (respecting gender parity) by neighbourhood. They are volunteers who speak on behalf of users, notably :

- Vote on behalf of their neighbourhood or village during the GAs;
- Facilitate discussions in the neighbourhoods to reflect and organize around water management;
- Encourage users to respect the price of water, the rules of use and the decisions taken in the GA;
- Help and advise users in case of problems;
- Collect the point of view and proposals of the populations they represent and transmit them to the Water Management Committee;
- Share with the populations what has been discussed in the meetings of the Water Management Committees;
- Explain everyone's responsibility in water management;
- Restore good understanding when there are conflicts between users and fountain workers; ■ Sensitize users on water hygiene around the standpipe, during transport and for conservation.

### 3.3 Water Management Committee

The Water Management Committee is composed of five (05) users who are volunteers and accept this role for the good of the community. Its members are elected for three (3) years. It is composed of

- A President
- A Secretary General
- A Treasurer
- A women's representative
- An Associations' representative.

The Water Management Committee is primarily responsible for the management and organisation of the WUA. It is in charge of:

- Financial management of the WUA;
  - Establishment of the provisional budget,
  - Treasury,
  - Payroll service
- The animation of the WUA:
  - Organization of the GAs,
  - reports on the activities of the WUA,
  - information to users of WUA activities,
- Ensure the application and respect of the statutes and internal regulations of the WUA. ■ Personnel manager :
  - centre manager ;
  - fountains ;
  - guards ;

### 3.4 Role of the operator and its replacement

The operator is responsible for the daily operation of the station. The WUA employs him directly, and s/he is often a qualified person in the village (start and stop the unit and pump, monitor the installations and carry out maintenance).



- The operator starts the unit and stops when the tank is full, he must make sure to fill the tank before it is empty;
- He reads the meters of the group, the borehole and the water distribution points (standpipes) every day and notes the figure on the monitoring sheets;
- He maintains the various follow-up documents that he has learned to use with the MSU and the facilitators. These documents are regularly reviewed by the MSU and the facilitators.

#### Role of fountain operators

The fountain operators, at the head of the standpipes, are responsible for selling and distributing water to users.

- Ensure the opening and closing of the standpipes for which they are responsible;
- Monitor the water meter from opening to closing;
- Ensure that Users respect the rules of the WUA:
  - Respect the rank of arrival to be served,
  - Ensure the recovery of users,
  - Collect and ensure the traceability of the sums collected and then hand them over each evening to the operator, who will carry out a double check on the revenue.

#### 3.5 Operation and management by a private company "leasing"

In some cases, the state entrusts the management of the station to a private person or company that is responsible for water production and distribution, technical maintenance of the facilities and water sales.

The farmer must ensure the continuous distribution of water to the population. It is remunerated through the sale of water, however, it must also provide a budget to allow:

- the renewal of the unit and pump and general maintenance;
- the collection of taxes due to the State.

#### 3.6 Direct operation

Unlike leasing, the manager does not bear any potential losses on the sale of water. It can either be remunerated at a fixed amount by the WUA or be remunerated pro rata to the sale of water.

### Role of the WUA in the operation

It is the WUA that controls the operator's work and manages the revenue from the sale of water. It manages the finances to ensure the station's operating costs (diesel fuel, stock of consumables, salary of the operator, fountain workers and guard) and taxes (maintenance fee, MSU fee...). It manages the budget to provide for the renewal of equipment and future investments.

#### 3.7 Oversight Committee

It is composed of three (03) people (a president and two members), on a voluntary basis.

Roles of the Supervisory Committee:

- Control and financial management of the WUA (account books, expenditure, balance);
- Control of installations, equipment and stocks (diesel, consumables, parts);
- Report back to the General Assembly on findings;
- Convene an extraordinary GA in case of significant problems (embezzlement, conflicts, abnormal expenses, etc.), (a quarter of the Delegates must agree with this decision);
- Ensure that the WUA is managed by all users (illiterate, women and youth) and that they are included in the process.

#### 3.8 Technical and financial partnerships in the water and sanitation sector

The key donor in the water and sanitation sector is provided by the AfDB, while WASH leadership at the UN agency level is provided by UNICEF. The AfDB is the head of the Partnership Trust Fund Committee and actively participates in the “Environment, Water, Sanitation and Infrastructure” Thematic Group through bimonthly meetings. These partners were consulted during the identification of the project and will be involved during the preparation of the project.

The partners involved in financing the water and sanitation sector in Chad are as follows:

- French Development Agency (AFD);
- European Union ;
- AfDB Rural Water Supply and Sanitation Initiative (RWSSI);
- AWF ;

- World Bank ;
- Islamic Development Bank;
- BADEA ;
- GIZ ;
- KFW ;
- Kuwait Fund;
- Saudi Fund ;
- some United Nations agencies (UNICEF, UNFPA); ■ UNDP.

### 3.9 Partnerships between the AfDB and civil society in Chad

The AfDB cooperates with a wide range of civil society organizations (CSOs) to improve the effectiveness, quality and sustainability of its DWSS operations and increase stakeholder ownership of project activities. The AfDB recognizes that CSOs operating in the field have developed a capacity to:

- identify innovative approaches for specific DWSS activities, drawing on their in-depth knowledge of local communities;
- encourage the implementation of projects that meet local needs;
- ensure continuity of work on the project, especially when implementing agencies lack capacity.

### IMPLEMENTING AGENCY

The African Development Bank (AfDB) Group's primary objective is to reduce poverty in its member countries by contributing to their sustainable economic development and social progress. To this end, it:

- mobilizes resources to promote investment in these countries; ■ provides technical assistance and policy advice.

In 2015, the multilateral development banks agreed to pursue common objectives, known as the Sustainable Development Goals (SDG). The AfDB's Strategy for the period 2013 to 2022 reflects the aspirations of the entire African continent. It is firmly rooted in a deep knowledge and experience of Africa's journey over the past decade and the destination it wishes to reach in the next. This 10-year strategy will focus on two objectives to improve the quality of Africa's growth: inclusive growth and the transition to green growth.

The African Development Bank (AfDB) joined the GEF in November 2003 as an implementing agency with direct access to GEF resources. Over the years, the Bank has increased its pipeline of projects in the areas of climate change, biodiversity, soil conservation and international waters.

The demand for projects that protect the environment and promote sustainable development has increased over the past decade as countries develop their economic activities in sectors such as tourism, agriculture, energy and transport. The AfDB and the GEF represent an important source of financing and technical expertise for African countries with limited resources to finance such projects. The AfDB helped its provincial member countries secure \$25 million in GEF grant funding for projects. The AfDB's growing role as a major source of GEF financing reflects its ability to combine these projects with its own investments in order to achieve a broader development objective. In addition, as a multilateral organization, the AfDB can benefit from the impact of these projects by using public and private partners to co-finance them.

On average, for every dollar of GEF resources, the AfDB has attracted \$4 in co-financing since the beginning of its partnership with the Facility in 2003.

### INSTITUTIONAL SET-UP OF THE PROJECT

Chad's Ministry of Environment, Water and Fisheries (MEWF) is the executing agency of the project, through the Ministry's Technical Directorate General (DGTHA) which oversees three technical departments: Drinking Water Supply Department, Sanitation Department and Pastoral Hydraulics Department.

A Programme Management Unit (PMU), which corresponds to the existing PAEPA CS team whose mission is extended, under the supervision of DGTHA, will work closely with the new MEWF project implementation unit on administrative matters.

The PMU is composed of:

- a coordinator;
- an administrative, accounting and financial manager;
- an accountant,
- an acquisition expert;
- an expert in monitoring and evaluation,

- project management support staff,
- an environmental expert,
- a sanitation expert,
- a gender expert.

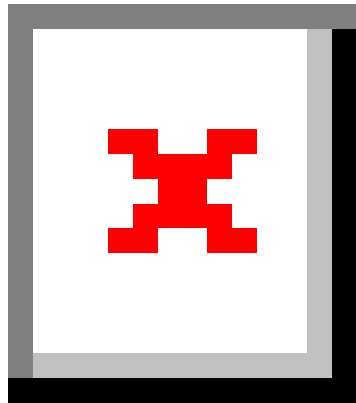
A consultancy was recruited in advance from PAEPA CS resources to carry out detailed studies for the work of the mini-DWS and networks, as well as the preparation of the related DAOs. Two control offices will be recruited to supervise the work by business line (North and South). The followup of the work and activities will be ensured at the provincial level by two antennas and two Management Consulting and Support Units (MSU). The PMU will coordinate the two antennas. The antenna heads will work closely with the decentralized services. The PMU/ PAEPA SU MR experts will be ministry officials, who will be assigned according to their field of competence.

The programme activities will be monitored at central level by the existing Technical Monitoring Committee/Steering Committee (TMC). The TMC is a permanent structure that oversees all programmes and projects in the rural development sector. The TMC will have to approve the activity programmes, the annual budget, the annual reports and will have to ensure the smooth running of the project activities. At the provincial level, the existing Provincial Action Committee (PAC) should be strengthened and extended to include the local elected officials concerned for the monitoring of project activities.

The PAC, chaired by the governors of the targeted provinces, will meet once a quarter and the head of the antenna will be responsible for its secretariat. At the level of the chief towns of the prefectures, the Local Action Committee (CLA), extended to local elected officials, administrative authorities, MEEP provincial delegates, presidents of Water Users Associations (WUA)/farmers, representatives of the CCLS, youth representatives and women's associations and groups, should ensure the follow-up of activities.

The institutional set-up of the project is shown in the figure below.

*Figure 8: Institutional set-up of PAEPA SU MR*



The project will be carried out in close collaboration with a wide range of stakeholders, including local communities, provincial and national agencies and ministries, civil society organizations, national and international organizations of the Chadian state. This collaboration is effective following Phase I of PAEPA SU MR, and is constantly being strengthened through individual consultations.

The PPG launch, monitoring and validation workshops were organized to ensure the active participation of all stakeholders in the design and preparation of the project, which is essential to enable national stakeholders to take ownership of the projects.

Local stakeholders also participated in the design of the project by organizing on-site focus groups to discuss the project's objectives and activities and assess their interest in the project. The project management team will ensure that this direct involvement of national and local stakeholders continues

throughout the implementation phase of the project. To facilitate ongoing engagement, a Memorandum of Understanding will be signed between MEWF and each governmental and/or non-governmental institution that will substantially participate in the implementation of the project.

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[1] CSOs include non-profit, non-state actors such as community-based organizations (CBOs), water users' associations (WUAs) and various non-governmental organizations (NGOs).

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.

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

**Consulted only; No**

**Member of Advisory Body; Contractor; Yes**

**Co-financier;**

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

**Executor or co-executor;**

**Other (Please explain)**

**3. Gender Equality and Women's Empowerment**

**Provide the gender analysis or equivalent socio-economic assesment.**

*Please see Annex I for a complete gender analysis, with the summary provided below.*

The Chad Constitution and laws clearly outlaw gender discrimination. Furthermore, the 2017 National Gender Policy outlines the Chad government's strategy to ensure that gender inequality and violence be eradicated by 2030, as well as ensure the inclusion of women in decision making-processes and natural resource management.

The gender policy outlines the following strategic orientations:

- systematically integrate the gender dimension into systems at all levels: planning, budgeting, implementation, monitoring and evaluation of development strategies, policies and programmes;
- develop a communication strategy for changing mentalities and behaviours;
- promote equal and equitable access to basic social services and decision-making spheres.

Furthermore, it provides for the creation of three monitoring mechanisms to help it track its progress. Despite these effort, there is still large gender disparities in the country (ranked 158 out of 160 for Gender Inequality Index – 2017).

Indeed, the gender disaggregated statistics for Chad illustrate this point: education enrollment is higher for boys than for girls, from primary (62% vs 40.7%) all the way through secondary (11% to 3.5%) and tertiary (1.4% to 0.3%). Literacy rates for girls is less than half that of men (23.2% versus 55.7%). There are still clearly gendered division of household responsibility, with women expected to take care of children and domestic chores (including water related chores). Furthermore, in terms of access to land and property, customary practices are still rife and male-oriented. These realities mean that women have less opportunities to participate in income generating activities. For instance, while they participate in agricultural activities and often farm plots (owned by their families), their yield is usually for subsistence purposes rather than for sale. This situation is particularly visible in rural settings, and with up to 40% of the Chadian population being rural woman, this leaves a large portion of the population underserved and underrepresented.

The projects target areas fully illustrate this. While the main economic activities are different in the two target provinces (pastoralism in BET and agriculture in the Logones), in both areas, women and children (mainly girls) are tasked with finding water for domestic consumption, which in some areas can take up to six hours of their time daily. This results in lower-schooling rates (especially for girls), less time to participate in other socio-economic activities, and also lower representation in decision making bodies.

The project recognizes that reducing gender inequalities and empowering women to participate more fully in society is essential to reduce poverty and achieve the project's objectives. Inherently, the majority of direct beneficiaries in terms of time-saving and increased economic opportunities will be women as water-related tasks are



mainly borne by women and children. To capitalize on this freed time, the project will look into realistic and adapted alternative livelihood options in line with the climate resilience objective; 40% of the 3,500 water and sanitation jobs created through this project will be for women. Furthermore, women's participation in decision-making processes and water resource management will be promoted through the participation in training programs (e.g. soil conservation) and water user associations, for instance. It must be noted that there are provisions in the budget and activities for studies to properly assess the options and approaches most likely to work in each specified intervention locations. This will ensure that a rather than using a blanket approach, awareness and training strategies are specifically catered for particularly settings and socio-economic environments.

While the project results framework does not include any gender-sensitive indicators, there is provision for including gender-sensitive indicators in the Monitoring and Evaluation Plan. These indicators will not only look at direct beneficiaries but also track the results of the interventions geared towards women empowerment – for instance participation in training programs, percentage women on water user associations. This will allow to ensure the continuing involvement of women in the water and sanitation sector outside of the temporal scope of the project and can be used to inform future interventions as well as used to track Chad's progress towards gender equality.

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

Yes

**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

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

TBD

**4. Private sector engagement**

**Elaborate on the private sector's engagement in the project, if any.**

The large infrastructure component of the project will require full participation of the private sector, not only in terms of supplies and construction of drinking water supply and sanitation infrastructure, but also in terms of the dissemination of best practice guidelines. The objective will be to improve the effective participation of small and medium-sized private sector enterprises (SMEs) in the provision of rural water supply services. This will be aided through the formalization of the relationship between beneficiary communities

and the private sector (e.g. Memorandum of Understanding). Furthermore, the private sector will be considered in the development of the institutional capacity building analysis and diagnostic and be eligible for the capacity training in terms of climate resilience (Component 1).

#### 5. Risks to Achieving Project Objectives

**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 format acceptable):**

Risk and rating	Assessment	Mitigation measure
High vulnerability to extreme weather events and their associated impacts. Although the project contributes to reducing vulnerability to climate variability, extreme weather events could hinder the progress of the project in all its components, including by limiting access to rural areas.	<b>Moderate</b>	<b>The project will use mapping resources to analyze climate-related vulnerabilities and conduct targeted risk screening for vulnerable sectors of activity to identify risk mitigation options.</b>
Reluctance of local institutions to change the status quo and promote the water harvesting sector, which could help to reduce pressures on groundwater	<b>Low</b>	<b>The project will organize ongoing consultation and engagement of stakeholders. It will strengthen user associations and local community groups to empower them to organize water rationing and distribution rules.</b>
Availability of insufficient groundwater resources	<b>Low</b>	<b>Past assessments confirm that sufficient groundwater resources are available in and around the project's cities and rural areas.</b>
Limited capacity of local and national institutions	<b>Low</b>	<b>The government's capacity is not likely to represent a risk to the project because its political will is strong. Although capacity is limited, efforts will be made to develop the capacity of key institutions to fully participate in the implementation of the project.</b>

As the GEF funding and activities are complementary to this project, it was deemed that there were no high risks for the GEF portion of the project itself, and as seen above, the larger scale high risks are mostly absorbed by the baseline project itself. Such high level risks include but are not limited to:

- The economic and political climate of Chad: the lack of transparency and efficiency of public finance management, as well as the low level of trust in the system (corruption allegations);
- Procedural/implementation delays due to multiple levels of validation (e.g. GEF, Ministry, AfDB);

Similarly, the overall PAEPA programme has been subject to the ESMS procedures of the AfDB, and can be found in the associated project documents. The relevant sections have been provided in Annex H, notably Appendix IV of the PAEPA-SU-MR Project Document, and Technical Annex B8. Feasibility studies have already been undertaken for the DWS.

## **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.**

The project's implementing agency is the African Development Bank (AfDB). The Executing agency is the Ministry of Environment, Water Resources and Fisheries (MEWF), and more specifically the Technical Directorate General in charge of the following technical departments: Drinking Water Supply, Sanitation and Pastoral Hydraulics.

The PMU will work under this Directorate and will be the existing PAEPA CS team to ensure smooth transition and consistency with the baseline projects; it is composed of 9 people, covering all the necessary expertise (e.g. water resources, sanitation, gender, environment...). It will be overseen by the existing Technical Monitoring Committee/Steering Committee (TMC).

The PMU will rely on two Monitoring and Support Units (one for the north and one for the south) which will be there direct link with the WSUs. The MSU will also work closely and rely Provincial and Local Action Offices for the implementation of activities on the ground. The set-up is illustrated in the schematic below.

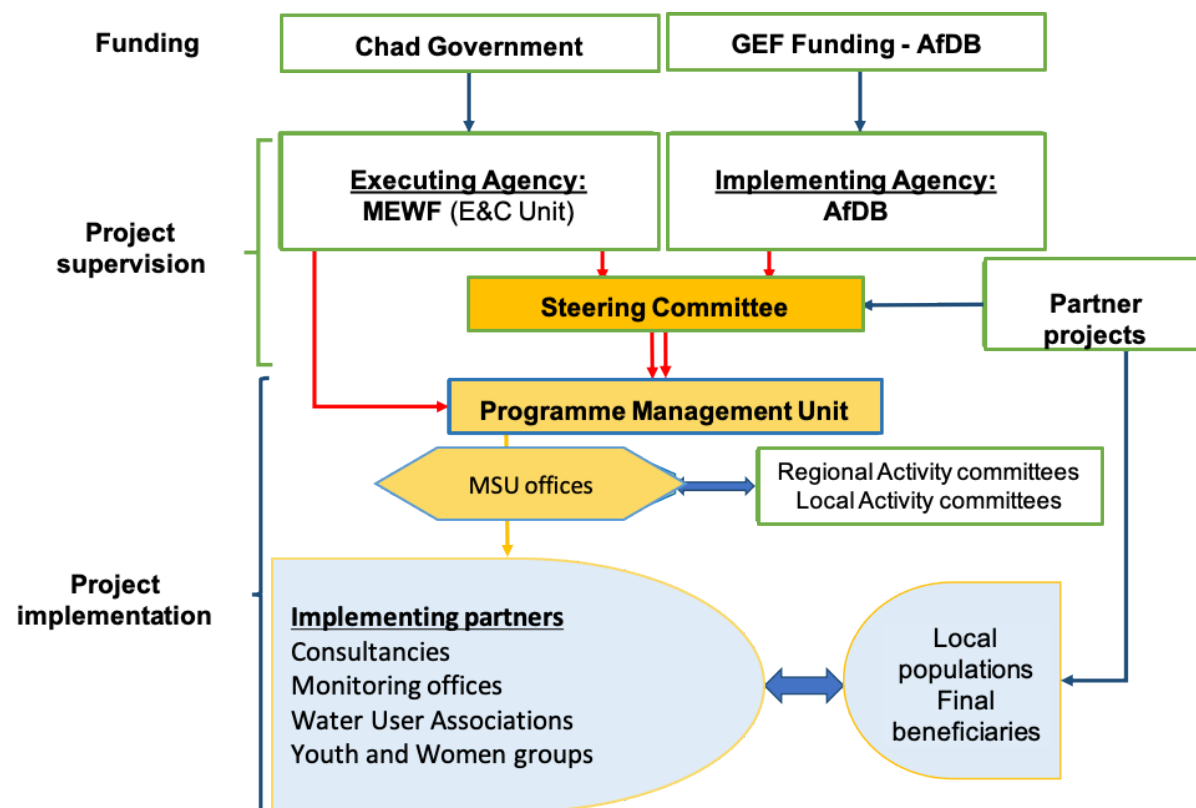


Figure 2: Proposed institutional set-up

The proposed institutional set-up is only one of the ways in which the proposed project is to seamlessly fit with the current baseline projects (i.e. using current structures and teams).

Indeed, this is evidenced through the low costs associated to the program support (USD 120,000, or less than 2% of the entire requested funds).

### 7. Consistency with National Priorities

Describe the consistency of the project with national strategies and plans or reports and assessments under relevant conventions from below:

NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc.

The project is country-led and as such takes into consideration national strategies and plans. In particular, the project is part of the 2017-2021 National Development Plan, which also lays the foundations for Chad's 2030 Goals.

In terms of internationally recognized goals and commitments, it will contribute to the achievement Goal 6 of the SDGs, through measures such as the protection and restoration of water-related ecosystems, as well as looking to improve water quality by reducing water pollution and scarcity. Specifically, it will help reach the drinking water access target of 95% by 2030 (from 52%) and sanitation services access from 16% to 50% in 2040.

Additionally, the project is in line with the INDC of Chad, as it targets some of the recognized target areas (BET), and includes measures to improve production techniques, as well as improving climate change risk dissemination and management. Furthermore, the measures proposed by the project are directly in line with those proposed in Chad's National Action Plan for Adaptation to Climate Change:

*Table 3: Alignment of key measures with Chad's NAPA*

Measure (Project Component)	NAPA priority
<b>Integration of climate change adaptation into the updated Master Plan for Water and Sanitation (Component 1)</b>	<b>NAPA 8 Project: National Observatory on Climate Change Adaptation Policies</b>
<b>Strengthening the capacity of the hydrometeorological system to provide more effective and targeted climate information, including early warnings. Also includes improving the water quality management network (Component 3)</b>	<b>NAPA 7 Project: Improving the quality of seasonal forecasts for precipitation and surface water flow and their integration into a comprehensive vulnerability strategy</b>
<b>Improve monitoring and evaluation and adaptive management (Component 3)</b>	<b>NAPA 4 project: Improving information, education and communication for climate adaptation</b>
<b>Improved access to safe water supply and sanitation for vulnerable communities in disaster-prone areas and increased community awareness of the health impacts of climate change (Component 2 / Component 4)</b>	<b>NAPA 10 project: reducing people's vulnerability to climate change / risk management</b>
<b>Reducing watershed degradation and projecting water sources (Component 2)</b>	<b>NAPA 5 project: Construction of soil protection and preservation infrastructure for the development of agricultural activities</b>

## 8. Knowledge Management

**Elaborate the "Knowledge Management Approach" for the project, including a budget, key deliverables and a timeline, and explain how it will contribute to the project's overall impact.**

Knowledge management and communication are essential to this project. While infrastructure takes up a considerable part of the budget, the remaining is mainly allocated to the collection, analysis and dissemination of knowledge (approx. 608,000 or 7% of the budget). It is through knowledge management and its dissemination that there will be value added to these infrastructure - whether at the national level with the updating of the WSMP and training of water sector professionals, or through climate change awareness raising in local communities. Within each component, there are aspects of knowledge management and communication:

Component 1: In order to ensure the adoption of the new WSMP by the private sector and water and sanitation stakeholders, technical guides will be produced for water managers and major developers (Year 1, USD 30,000). In addition, twenty water professionals will be trained in order to help increase Chad's knowledge and institutional capacity (USD 37,000 spread over the 4 years).

Component 2: While the heart of this component is the installation of DWSS infrastructure, there are important climate change awareness raising and the dissemination of soil conservation practices in the intervention areas in order to ensure the sustainability of the water resources and associated infrastructure (USD 68,000 for the two first years of the project). Importantly, there will be a study prior to the deployment of these activities in order to best tailor the methods of dissemination.

Component 3: Like component 2, much of the activities and outcomes are focused on the material needs (e.g. piezometer, laboratory equipment). Nevertheless, there is also provisions for the dissemination of the data collected, in order for it to become of use to the local populations, notably in terms of increasing their preparedness to extreme weather events. As such, a strategy regarding the centralization and dissemination of the data will be established (years 2 and 3, USD 75,000), and funds are allocated to the production and dissemination of weather and water quality data from year 2 onwards (USD 60,000 per year). In addition, there will also be a training aspect, to ensure that the technical knowhow for managing and operating the system is available in country (year 2, USD 10,000).

Component 4: Knowledge management is at the core of component 4 of the project. The main activity involves the compilation of best practices on applicable technologies for dissemination and replication by partners, and will be undertaken at during the second half of year one, and the first half of year 4 (USD 20,000 budgeted for each period). It will be based on the lessons learned during the installation of the DWSS infrastructure, as well as feedback from the training activities of Component 2.

In parallel to the specifics of each component, knowledge management and communication will need to be managed internally in order to ensure the smooth implementation in the two intervention areas of the project, and well as externally, taking into consideration the most efficient methods of data gathering and dissemination for each stakeholder. In terms on internal knowledge management, there will be a need to ensure that key stakeholders have access to knowledge regarding project implementation, as well as ensure that their individual know-how is informing the process. External knowledge management will aim to ensure that achievements and lessons learned are disseminated from the local to national level. Some of the tools utilized will be meetings, public awareness campaigns (e.g. brochures and billboards), training, the M&E reports. Additional detail on communication and knowledge management, both internal and external – notably the full list of tools – is further developed in section 4.8 of the project document.

**9. Monitoring and Evaluation**

### Describe the budgeted M and E plan

The monitoring and evaluation plan is in accordance with the AfDB and GEF guidelines. The PAEPA SU MR Monitoring and Coordination Unit will be responsible for the M&E activities throughout the implementation. The table below describes all of the M&E activities and associated budget.

*Table 4: Summary of the M&E activities and their allocated GEF-funding*

M&E Activity	Description	Frequency	Budget - GEF funded (USD)
<b>Inception workshop and report</b>	<b>The inception workshop brings together the stakeholders involved in the project and the inception report. It provides an opportunity and means to finalize preparations for the implementation of the proposed project, including the formulation of the first annual work plan, details of stakeholder roles and responsibilities, and reporting and monitoring requirements. Given the consultation process at PPG, only minor adjustments are planned.</b>	<b>Within 2 months of the project kick-off</b>	<b>10,000</b>
<b>Baseline study</b>	<b>The project's logical framework - in particular the reference level of SMART indicators - will be refined if necessary.</b>	<b>At the start of the project</b>	<b>-</b>
<b>Logical results framework</b>	<b>The project's logical results framework includes SMART indicators for each expected result as well as medium- and end-of-project targets. These indicators will be the main tools for assessing the progress of project implementation and the achievement of project results. Means of verifying the progress of the results and the implementation of the project will be carried out throughout the implementation period.</b>	<b>Data collected throughout the project</b>	<b>-</b>

<p><b>Quarterly progress reports (PMU to AfDB)</b></p>	<p><b>The PMU will prepare a summary of the substantial and technical progress of the project towards achieving its objectives. The summaries will be reviewed and approved by the AfDB before being sent to the AfDB Project Coordinator.</b></p>	<p><b>Quarterly</b></p>	<p><b>-</b></p>
<p><b>Annual project report</b></p>	<p><b>The annual project report covers the evaluation of the advance on the project's outputs and outcomes, key achievements, evidence of success, constraints, lessons learned and recommendations, as well as the overall evaluation of the project. The annual progress report will be prepared by the Project Coordinator after consultation with relevant stakeholders and will be submitted to the AfDB</b></p>	<p><b>Annual</b></p>	<p><b>-</b></p>
<p><b>Evaluation by the Steering Committee</b></p>	<p><b>The members of the Steering Committee will meet twice a year to assess the progress of the project and take decisions on recommendations to improve the design and implementation of the project in order to achieve the expected results.</b></p>	<p><b>Twice a year</b></p>	<p><b>10,000 (1,500 per committee meeting)</b></p>
<p><b>Independent external mid-term evaluation</b></p>	<p><b>A mid-term evaluation of the project will be carried out at the beginning of the third year of implementation, focusing on relevance, results (effectiveness, efficiency and timeliness), issues requiring decisions and actions and early lessons learned in project design, implementation and management</b></p>	<p><b>Half-way through project implementation</b></p>	<p><b>40,000</b></p>



<b>Independent external evaluation at the end of the project</b>	<b>A final evaluation, which takes place three months before the last TPR meeting, focuses on the same issues as the mid-term evaluation but also covers impact, sustainability and monitoring recommendations, including the contribution to capacity building and the achievement of global environmental objectives.</b>	<b>At least 3 months before the end of project implementation</b>	<b>40,000</b>
<b>Final evaluation report</b>	<b>A final evaluation report will be produced after the project feedback meeting.</b>	<b>At the end of the final evaluation</b>	<b>-</b>
<b>Financial monitoring reports (PMU to the AfDB)</b>	<b>The PMU will be required to produce financial monitoring reports (FMR) on a quarterly basis. These FRL will be prepared and submitted to the Bank no later than 45 days after the end of each quarter.</b>	<b>Quarterly – submitted within 45 days of the end of each quarter</b>	<b>-</b>
<b>Budget review</b>	<b>Revisions to the project budget will reflect the final expenditures of the previous year, in order to allow for the preparation of a realistic plan for the provision of inputs for the current year. Significant revisions are expected to be approved by the AfDB/GEF Coordinator to ensure consistency with the GEF principle of the additional eligibility criteria and the GEF before being approved.</b>	<b>At least annually / as required</b>	<b>-</b>
<b>Financial audit</b>	<b>A financial audit will be carried out each year. The PMU will develop and implement a strategy to address the audit recommendations after each audit</b>	<b>Annual</b>	<b>20,000 (5,000 per year)</b>
<b>Total</b>			<b>120,000</b>

#### 10. Benefits

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

The main socio-economic benefits from this project will originate from the local drinking water and sanitation infrastructure put into place. The socio-economic benefits of access to clean and reliable drinking water supply and sanitation are significant and wide-ranging. One of the main benefits is the impact on public health as it will greatly reduce the prevalence of water-borne diseases; this will reduce the stress on medical infrastructure, as well as decrease mortality and generally improve the greater population's health and therefore economic opportunity.

Secondly, water related chores – including retrieving water for domestic use – are usually under the responsibility of women and children. By improving access to drinking water, time that was previously allocated to these chores can be used for other productive activities and/or social involvement will help improve women's economic opportunities and social involvement. It will also decrease the likelihood of girls from dropping out of school; this will be further enhanced by access to sanitation facilities.

Thanks to the capacity building aspects of the project, permanent water and sanitation jobs will be created (3,500), and the construction work from Component 2 will generate both temporary employment for local communities as well as revenue for the private sector. In addition, some of the productive activities implemented through the project – specifically the soil conservation practices – will help restore and sustain ecological integrity of the landscapes, by helping halt and prevent land degradation, effectively safeguarding environmental resources for future generations (target of 1,100 ha of restored land). These efforts, alongside better human waste management, will help improve the quality and sustainability of the aquifers.

On a larger scale, the integration of climate change risk management principles in the updated WSMP as well as the establishment of weather and water monitoring systems will help stimulate and provide data for the development of new priorities and plans regarding climate change adaptation.

## **11. Environmental and Social Safeguard (ESS) Risks**

Provide information on the identified environmental and social risks and potential impacts associated with the project/program based on your organization's ESS systems and procedures

**Overall Project/Program Risk Classification\***

PIF

CEO Endorsement/Approval

MTR

TE

Low

**Measures to address identified risks and impacts**

Elaborate on the types and risk classifications/ratings of any identified environmental and social risks and impacts (considering the GEF ESS Minimum Standards) and any measures undertaken as well as planned management measures to address these risks during implementation.

RISK ANALYSIS AND RISK MANAGEMENT MEASURES

## Gender mainstreaming

Chad's Constitution and laws prohibit gender discrimination, but the implementation of these provisions in the water and sanitation sector remains a challenge [1]. Reducing gender inequalities and empowering women to participate more fully in society is therefore essential to reduce poverty and achieve the project's objectives. The project will ensure that all key results take into account gender-specific concerns, such as links between women and children and natural disasters and differences in access to key infrastructure between men and women. In particular, gender issues will be integrated into the design of all types of interventions to be implemented by government and communities.

In line with the GEF Gender Action Plan and the AfDB Strategy 2013-2022, the project will ensure that climate change risk management solutions take into account gender issues. This will be done by:

- a gender-specific analysis during vulnerability assessments;
- gender-responsive budgeting, so that the project includes a budget that includes specific activities (such as livelihood options) to meet women's adaptation needs;
- the inclusion of women's perspectives in the development and implementation of the project.

Gender indicators will be included in the monitoring and evaluation system. In addition to collecting results such as the number of women beneficiaries, the project will take into account results that offer opportunities for women's empowerment. The examples of interventions will include objectives for:

- women's participation and access to the benefits of the project (participation in training programmes and beneficiary groups such as the water users' group);
- women representatives in project committees or local associations;
- the number or percentage of female staff.

The activities of this project focus mainly on improving public health (especially child health) as a contribution to national objectives in SDG 6. About 100,000 people are expected to benefit directly from improved water supply and sanitation. By improving health, they in turn will improve the quality of life of the Chadian population, especially women and children. In addition to bearing the burden of waterborne diseases, women are generally responsible for water collection and, if sufficient access points are available near the home, time will be freed for productive activities and family well-being. Children, especially girls, will have more time for school work and social assistance activities. In addition, the provision of sanitation facilities in schools will improve girls' enrolment and attendance rates.

## Social guarantees and considerations towards indigenous peoples

Southern Chad is home to pastoral groups and transhumant indigenous ethnic minorities. The AfDB's integrated safeguards system recognizes that some communities are vulnerable simply because their social or cultural identity is distinct from that of the main or dominant society. The determination of project impacts was based on the assumption that the proposed GEF//LDCF interventions will not cause unintentional displacement of people and will not have a negative impact on protected areas and indigenous peoples.

During the design of the project, social risks, vulnerabilities and impacts (including rights of access to natural resources) on indigenous peoples and ethnic minorities that could undermine the project's objectives or reduce its benefits were sought. At this stage, no specific risks have been identified.

The private sector will play a key role in the design and implementation of construction activities, including the provision of goods for DWSS infrastructure, as well as in the dissemination of good practice guidelines. The objective will be to improve the effective participation of small and medium-sized private sector enterprises (SMEs) in the provision of rural water supply services. Efforts will be made to address the barriers to their participation by addressing: management, information flow, financial constraints, regulatory and technical constraints.

## Adaptation to climate change and mitigation

In 2010, Chad's National Action Plan of Adaptation (NAPA) identified the main vulnerabilities to temperature and precipitation changes caused by climate change in the main sectors of the economy, including: agriculture, fisheries, forest resources, freshwater resources, population, transport, industry and human health, but data for its implementation are largely lacking. The GEF/LDCF project focuses on the implementation of NAPA priorities. It is structured around:

- reducing people's vulnerability to climate change;
- management of risks related to inadequate water supply and sanitation (NAPA 10 project);
- improving the quality of seasonal forecasts of rainfall and surface water flow and integrating them into an overall vulnerability strategy (NAPA 7 project);
- the integration of climate adaptation into the water and sanitation master plan (NAPA 8 project);
- the construction of infrastructure to protect and preserve the soil for the development of agricultural activities (NAPA 5 project).

The activities implemented under this project will introduce approaches that can be replicated in the Sahel. The project will catalyse the production of social and economic benefits and lay the foundations for larger-scale projects through analytical work and skills development.

In summary, the risks to water supply and sanitation in Chad related to climate change are mainly as follows:

- the modification of the hydrological regime and therefore of the supply of non-fossil groundwater;

- desertification that:

- in the North creates a maintenance and resource management problem by increasing competition for water: groundwater, water bodies, and infrastructure maintenance;
- is likely to accelerate impluvium flows over watersheds and thus also contribute to changing the regime of aquifers;
- can make surface slicks more vulnerable.

It includes the following risk reduction measures that which are solely addressed in this GEF project:

- measure and forecast in the short and medium term to anticipate crises; ■ integrate long-term forecasts into master plans and other policies;
- integrate climate change concerns into governance at the:
  - investment decisions making level (and therefore sizing);
  - level of decisions on resource sharing and institutional arrangements to manage these issues (preferably upstream);
  - level of soil management and conservation decisions that contribute to protecting the resource both qualitatively and quantitatively.

GEF/LDCF resources will help to raise community awareness of the consequences of climate change and provide rural towns with access to risk information and early warnings. In addition to improving the quality of life, the formation and creation of WASH committees (with an emphasis on women representation) will empower vulnerable people. Young people will be particularly targeted for training in the operation and maintenance of WASH facilities with mandatory representation on WASH committees. In addition to

the benefits to public health and social development, this project is likely to contribute to environmental integrity through improved water management (quantity and quality) and reduced groundwater pollution from human waste.

The integration of climate change risk management principles into the updated WSMP will encourage and lead to the identification of new development priorities and revised plans, as well as the evolution of regulations and enforcement mechanisms. Weather stations, groundwater improvement and water quality monitoring will complement the existing meteorological and hydrological support programs under Agrhymet. Communities will immediately benefit from warnings related to groundwater quality and aquifer management. Soil and water conservation will increase the resilience of local communities by protecting water sources and aquifers. River basin management could contribute to broader adaptation to climate change.

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The risks considered and the proposed mitigation measures to achieve the project objectives are summarized in the table below:

Risk and rating	Assessment	Mitigation measure
High vulnerability to extreme weather events and their associated impacts. Although the project contributes to reducing vulnerability to climate variability, extreme weather events could hinder the progress of the project in all its components, including by limiting access to rural areas.	Moderate	The project will use mapping resources to analyze climate-related vulnerabilities and conduct targeted risk screening for vulnerable sectors of activity to identify risk mitigation options.
Reluctance of local institutions to change the status quo and promote the water harvesting sector, which could help to reduce pressures on groundwater	Low	The project will organize ongoing consultation and engagement of stakeholders. It will strengthen user associations and local community groups to empower them to organize water rationing and distribution rules.
Availability of insufficient groundwater resources	Low	Past assessments confirm that sufficient groundwater resources are available in and around the project's cities and rural areas.

Limited capacity of local and national institutions	Low	The government's capacity is not likely to represent a risk to the project because its political will is strong. Although capacity is limited, efforts will be made to develop the capacity of key institutions to fully participate in the implementation of the project.
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**Supporting Documents**

Upload available ESS supporting documents.

**Title** **Module** **Submitted**

**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).

**Annex A: Project Results Framework**

<b>Strengthen the resilience of rural and urban areas to climate change and variability through water supply and sanitation in Chad.</b>					
<b>Expected results</b>	<b>Indicator</b>	<b>Base</b>	<b>Target</b>	<b>Source of verification</b>	<b>Measurement (M) / Risk (R)</b>
<b>1. Integration of climate change adaptation into Chad's Water and Sanitation Master Plan (SDEA)</b>					
<b>1-1. Development of a master plan for water and sanitation resilient to climate change and strengthening of adaptive capacities</b>					
1.1.1. Development and integration of climate change adaptation practices in the updating of the water and sanitation master plan	Update of the ASDP	0	1	Validation of the new ASDP	R: (i) Inappropriate priorities, (ii) Delays in document preparation, (iii) Low level of stakeholder engagement, (iv) Low implementation capacity at local and institutional levels  M: (i) Appropriate capacity to implement identified priority assessments and studies, (ii) Stakeholder participation
1.1.2. Development of technical guides for investments resilient to climate variability and change in the water and sanitation sector	Number of technical guides published	0	1	Evaluation (audit) report, quarterly/annual monitoring report	R: (i) Delays in document preparation (ii) Difficulty in prioritizing studies  M: Appropriate capacity to implement identified priority evaluations and studies
1.1.3. Institutional capacity building to facilitate the integration of climate risks into the water supply and sanitation sector	Number of water professionals trained	0	40	Socio-economic and environmental monitoring audit, evaluation reports	R: Low level of cooperation and coordination among stakeholders  M: Stakeholder participation at all levels
<b>2. Improving access to water supply and sanitation resilient to climate change</b>					
<b>2.1. Improving the reliability and quality of water supply</b>					



2.1.1. Construction of drinking water supply systems (including boreholes, reservoirs and solar energy distribution systems) for 34 unserved communities.	Number of mini AEPs built	0	34	Evaluation reports, audits, quarterly/annual monitoring reports	R: (i) Delay in the delivery of the works, (ii) lack of ownership of the works, (iii) Divergence between interventions undertaken at national and provincial level, (iv) Divergence between interventions undertaken at national and provincial level  M: Contracts with local companies, (ii) regular monitoring of progress by local (WUA) and national (GCC) stakeholders,
<b>2.2. Soil and water conservation practices adopted by farmers and youth at some project sites to improve the protection of water resources</b>					
2.2.1. Soil and water conservation (including reforestation activities), on approximately 1100 ha of degraded land associated with the preservation of water resources	Number of hectares of degraded and rehabilitated land  Report on the follow-up of the works	0 ha  0	1100 ha  4	Evaluation report (audit), quarterly/annual monitoring report /PV of acceptance of work	R: Difficulties in involving local stakeholders  M: Promotion and dissemination of good practices
2.2.2. Community awareness/capacity-building/support services for soil and water conservation/agroforestry/etc.	Campaign tracking report	0	1	Campaign monitoring report, socio-economic and environmental monitoring audit	R: Lack of involvement of local stakeholders  M: Establish appropriate campaigns and include local representatives as trainers (training of trainers)
<b>3. Strengthening climate information and early warning systems</b>					
<b>3.1. Groundwater and surface water resources monitoring services provide information that can be used at the local level</b>					

<p>3.1.1. Strengthening of the meteorological and climate observation network (ii) Extension of the groundwater and rainwater monitoring network (iii) Laboratory equipped to improve water quality monitoring (iv) Development of a strategy for the acquisition and development of climate data systems</p>	Diagnostic report of the meteorological network and underground monitoring	0	1	Accounting and financial audits, acquisition audits, work acceptance reports	R: (i) Delay in delivery of works, (ii) Limited understanding and commitment to the value of an expanded and representative network of protected areas " M: (i) Contracts with local companies, (ii) regular monitoring of progress by local (WUA) and national (GCC) stakeholders
	Report on the data acquisition strategy and information exploitation	0	1		
	Piezometers installed	0	6		
	Pluviometers installed	0	100		
	Millimetre-scale installations	0	20		
	Rehabilitated Lai Laboratory	0	1		

3.1.2. Provision of early warning systems that take into account climate, groundwater, the environment and socio-economic information over different time scales, as required	Feasibility study of an early warning system	0	1	Evaluation reports, audits, quarterly/annual monitoring reports	R: Inappropriate priorities; delays in the preparation of documents M: Appropriate capacity to implement identified priority assessments and studies
	Study of the early warning project	0	1		
3.1.3. Training of at least 20 personnel in the maintenance and repair of equipment, including effective techniques for interfacing with existing equipment	Trained technicians	0	20	Socio-economic and environmental monitoring audit	R: Lack of involvement of local stakeholders M: Establish appropriate training with people involved in water management
<b>4. Knowledge management, monitoring and evaluation</b>					
<b>4.1. Capitalization and dissemination of best practices from project activities, capacity building initiatives and regulatory developments</b>					
4.1.1. (i) Compilation of best practices on applicable technologies for dissemination and replication by project partners (ii) Monitoring and evaluation system in place and operational and (iii) Operational publication of reports and information notes of the monitoring and evaluation system	Reporting and dissemination of practices and technologies	0	1	Evaluation reports, audits, quarterly/annual monitoring reports	R:(i) Inappropriate priorities; (ii) Delays in the preparation of documents M: Appropriate capacity to implement identified priority assessments and studies
	Reporting and M&E notes	0	2		
<b>5. Project management</b>					
<b>5.1 Project Costs and Performance</b>					
5.1. Project management team in place and functional	Project monitoring report equipment purchase	0	1	Audits of PAEPA SU MR acquisitions	R: Delays in validation and disbursement of work plan and procurement plans M : Effectiveness of PMU

5.2. Project evaluation and audit mission carried out	Mid-term evaluation	0	1	Audits	
	Final evaluation	0	1		

**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).**

**GEFSEC Comments at PIF Stage:**

Review Criteria Questions	Secretariat Comment at PIF/Work Program Inclusion	AfDB Response to Secretariat comments
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Review Criteria Questions	Secretariat Comment at PIF/Work Program Inclusion	AfDB Response to Secretariat comments
<p>1. Is the project/program aligned with the relevant GEF focal area elements in Table A, as defined by the GEF 7 Programming Directions?</p>	<p>GEFSEC, 10/23/2018 - Updates requested. While Table A reflects objectives CCA-1 and CCA-2 without explicitly articulating the objectives, in the text of the body, wherever the objectives are mentioned; they are the GEF-6 LDCF framework objectives.</p> <p>Recommended action: Please update the text in this request to reflect the new GEF-7 LDCF objectives. For example, GEF-7 LDCF Objective 1 is: Reduce vulnerability and increase resilience through innovation and technology transfer for climate change adaptation.</p>	<p>AfDB 25/10/18. Comment noted and addressed in section 1- 4: Consistency with the LDCF eligibility criteria and priorities.</p> <p><u>Section 1-3: Proposed alternative Scenario (LDCF project)</u> The table is updated to reflect alignment of the proposed project activities to the GEF7 Adaptation strategy</p> <p><u>1- 4: Consistency with the LDCF eligibility criteria and priorities</u> The sub section on Consistency with GEF Focal Area objectives has been updated.</p> <p>The project is consistent with the goal of the GEF-7 Adaptation strategy which is to strengthen resilience and reduce vulnerability to the adverse impacts of climate change in developing countries, and support their efforts to enhance adaptive capacity. Within the Focal Area Strategy, this project addresses the three Climate area focal area objectives.</p> <ul style="list-style-type: none"> <li>• <i>Objective 1: Reduce Vulnerability and Increase Resilience through Innovation and Technology Transfer for Climate Change Adaptation</i> (through enhancing the capacity of hydro-meteorological system for delivery of more effective and targeted of climate information including early warnings). The result area also includes enhancing the water quality management network; improving monitoring and evaluation and adaptive management and improving access to information, together with appropriate training at local and national levels for staff to use that information for effective early warning.</li> <li>• <i>Objective 2: Mainstream Climate Change Adaptation and Resilience for Systemic Impact</i> (through Enhancing access to safe water supply and sanitation among vulnerable communities in disaster prone areas, strengthening community awareness on health impacts due to climate change and through reduction of watershed degradation and water source protection measures)</li> <li>• <i>Objective 3: Foster Enabling Conditions for Effective and Integrated Climate Change Adaptation</i> (enhancing adaptive capacity through updating the national water and sanitation masterplan, to address climate change. Training and awareness raising of climate-resilient Water, Sanitation and Hygiene (WASH) will also contribute to building adaptive capacity at the local level.</li> </ul>

Review Criteria Questions	Secretariat Comment at PIF/Work Program Inclusion	AfDB Response to Secretariat comments
<p>Core indicators</p> <p>6. Are the identified core indicators in Table F calculated using the methodology included in the correspondent Guidelines? (GEF/C.54/11/Rev.01)</p>	<p>GEFSEC, 10/23/2018 - Additional information requested.</p> <p>In line with the Adaptation Program’s efforts to align more closely with GEF Trust Fund procedures, we have developed four Core Indicators for PIF-stage (as well as subsequent-stage) submissions to the LDCF and SCCF. These will also contribute to an adaptation section of the GEF Corporate Scorecard. Due to overwhelming demands on the Portal at the moment which preclude our being able to program them in, we would like you to please include a separate brief document (can be just a page) in your GEF-7 LDCF/SCCF PIF submissions to us, titled “Core Indicators”.</p> <p>Recommended action: As requested in the email dated 17 October, please upload a very brief document entitled “Core Indicators” onto the portal with the information requested to accompany this submission.</p>	<p>AfDB 25/10/18. Comment noted and addressed. Core LDCF/SCCF Indicators have been added to the submission as attachment “Chad Project LDCF Core Indicators v 25-10-18”. They include the following:</p> <p><u>Core Indicator 1: Number of direct beneficiaries (gender-segregated, M/F)</u></p> <ul style="list-style-type: none"> <li>• Direct beneficiaries 4,787,000 people benefiting from improved climate resilient water supply infrastructure in the semi-arid regions, improved livelihoods and reduced vulnerability to climatic hazards due to new or enhanced early warning systems.</li> <li>• Indirect beneficiaries 2,144,000 people</li> <li>• Proportion of women beneficiaries 50.3%</li> </ul> <p>-</p> <p><u>Core Indicator 2: Number of hectares of land under climate-resilient management</u></p> <ul style="list-style-type: none"> <li>• 1100 ha under Soil and water conservation/agro forestry/conservation agriculture practices associated with restoration of degraded land along water sources for the climate resilient water supply systems</li> </ul> <p>-</p> <p><u>Core Indicator 3: Number of policies, plans and development frameworks that mainstream climate resilience</u></p> <ul style="list-style-type: none"> <li>• 1 Updated Chad National Water and Sanitation Masterplan, with mainstreamed Climate Risk Management.</li> </ul> <p>-</p> <p><u>Core Indicator 4: Number of people with enhanced capacity to identify climate risk and/or engage in adaptation measures (gender-segregated, M/F)</u></p> <ul style="list-style-type: none"> <li>• Capacity of an estimated 40 Water professionals targeting both public and private sector to facilitate integration of climate risks in water supply and sanitation sector built (30%Female)</li> <li>• 20 officers trained to maintain and repair equipment, including cost-effective technologies to interface with existing equipment/software (15% Female)</li> <li>• All the people will be selected by the PMU, following the guidelines of the Steering committee, and based of the results of the Analysis and diagnosis of the sector related to water supply and sanitation (Activity 1.1.3.1).</li> </ul>

Review Criteria Questions	Secretariat Comment at PIF/Work Program Inclusion	AfDB Response to Secretariat comments
<p>2. Is the baseline scenario or any associated baseline projects appropriately described?</p>	<p>GEFSEC, 10/23/2018 - Clarification requested. While the baseline intervention and the justification of the requested LDCF financing is clearly articulated, some clarifications are requested pertaining to components A and C of the baseline. The Secretariat understands that the AfDB will provide US\$ 13,645,740 as co-financing through its actions implemented under Water Supply and Sanitation in Middle Semi Urban And Rural of 11 towns (2017-2022), PAEPA -SU MR project. The program goal is to improve the quality of life in 11 prefectures in Chad through the provision of water supply and sanitation by 2030. The project addresses drinking water and sanitation needs targeting up to 95% of more than 6 million inhabitants in semi-urban and rural areas of eleven (11) prefectures in North, South and East of Chad, namely: Borkou-Ennedi-Tibesti, Mayo Kebbi, Tandjilé, Logone Oriental, Logone Occidental, Mandoul, Moyen Chari, Salamat and Sila. The baseline investment is structure around 3 components: (A) Drinking water and sanitation infrastructure; (B) Institutional capacity strengthening; and (C) Climate change related activities.</p> <p>Regarding components A and C, the Secretariat would appreciate some clarification regarding how the LDCF financing is additional to the activities being financed under the baseline under each component. Output 2.1.1 seems to duplicate some of the activities already being financed under the baseline (Production well prospecting, scheme design and construction of safe water supply systems (comprising solar powered production boreholes, reservoirs and distribution systems) for 30 unserved areas. It will include interventions to increase access to safe water supply to an estimated 100,000 people). Additionally, please explicitly indicate how the proposed LDCF activities do not overlap or duplicate the activities under baseline investment component C.</p>	<p>AfDB 25/10/18. Comment noted and addressed. The scope of the baseline and the LDCF funded projects are clarified below.</p> <p><u>Component A-Development of Drinking Water and Sanitation Infrastructures</u></p> <p>-</p> <p>The scope under component 2-1: Increased reliability and improved quality of water supply (considering climate change induced risks) in targeted areas has been updated.</p> <p>-</p> <p>While the entire project areas includes eleven (11) prefectures in North, South and East of Chad, namely: Borkou-Ennedi-Tibesti, Mayo Kebbi, Tandjilé, Logone Oriental, Logone Occidental, Mandoul, Moyen Chari, Salamat and Sila. The LDCF financing under component A will only address interventions in the prefectures of: <b>Borkou, Ennedi, Tibesti, western Logone and eastern Logone.</b></p> <p>Activities under Output 2.1.1 are therefore additional to the activities to be financed under the baseline project. The remaining prefectures which include Mayo Kebbi, Tandjilé, Mandoul, Moyen Chari, Salamat and Sila will be covered with financing from the baseline project (AfDB).</p> <p><u>Component C – Climate Change related activities: (cost = 3, 26 UA million or 7.34%).</u></p> <p>The scope under component 2-2: Reduction of watershed degradation and water source protection has been updated.</p> <p>Under this component, the LDCF financing will mainly contribute towards Outcome 2-2: Soil and water conservation practices undertaken by farmers/youth at selected project sites for improved water source protection in the prefectures which include: <b>Borkou, Ennedi, Tibesti, western Logone and eastern Logone.</b></p> <p>The remaining prefectures which include Mayo Kebbi, Tandjilé, Mandoul, Moyen Chari, Salamat and Sila will be covered with financing from the baseline project (AfDB).</p>

Review Criteria Questions	Secretariat Comment at PIF/Work Program Inclusion	AfDB Response to Secretariat comments
<p>4. Is the project/program aligned with focal area and/or Impact Program strategies?</p>	<p>GEFSEC, 10/23/2018 - Update requested. The submission is in line with CCA-1 and CCA-2, however please refer to Item 1.</p> <p>Recommended Action: Wherever the submission refers to CCA framework objectives, please update to reflect the current programming strategy for adaptation 2018-2022 (for example, on the table in section 1-3 on the alternative scenario; and anywhere the submission refers to consistency with the GEF focal area strategies.</p>	<p>AfDB 25/10/18. Comment noted and addressed.</p> <p>The submission has been updated to reflect the GEF 7 CCA framework objectives. The table under section 1-3 Proposed alternative Scenario (LDCF project) has been updated to indicate the GEF CCA objectives</p> <p>Section 1- 4: Consistency with the LDCF eligibility criteria and priorities, has also been updated and is now consistent with the new GEF 7 LDCF CCA programming directions.</p>



Review Criteria Questions	Secretariat Comment at PIF/Work Program Inclusion	AfDB Response to Secretariat comments
<p>5. Is the incremental / additional cost reasoning properly described as per the Guidelines provided in GEF/C.31/12?</p>	<p>GEFSEC, 10/23/2018 - Please see Item 2, which is relevant to the additionality of proposed activities within the context of Components A and C of the baseline project.</p> <p>Recommended Action: Please briefly indicate in the proposal how the activities proposed in this submission are additional specifically pertaining to components A and C of the baseline investment.</p>	<p><u>AfDB 25/10/18. Comment noted and addressed. Section 1-5:</u></p> <p>Incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, CBIT and co-financing, strengthened to reflect justifications below.</p> <p>The additionality under the proposed LDCF funded activities is mainly related to baseline Project Component A-Development of Drinking Water and Sanitation Infrastructure.</p> <p>The baseline scenario, describes the 'business as-usual' development of water sources with no consideration of the likely implications of long-term climate change.</p> <p>The alternative scenario to be financed by the LDCF fund describes key outcomes that will be achieved that explicitly address climate change concerns. Components 1 and 2 relate directly to the baseline intervention whilst components 3 and 4 add weather and water resources monitoring and knowledge management to enable efficient, climate-resilient water management.</p> <p>Additionality related to component A therefore include activities related to:</p> <ul style="list-style-type: none"> <li>• Mainstreaming adaptation into sectoral programmes, through updating of the water supply and sanitation masterplan, development of technical guidelines for climate proofing investments in the water and sanitation sector and building adaptive capacity (outcome 1-1).</li> <li>• Increasing coverage of water supplies to combat increasing drought. This is mainly through outcome 2-1, on increased reliability and improved quality of water supply (considering climate change induced risks in targeted areas and outcome 2-2. Soil and water conservation practices undertaken by farmers/youth at selected project sites for improved water source protection</li> <li>• Expansion of adaptive capacity to deal with future and not only current risks, this is mainly through (i) Institutional capacity development to facilitate integration of climate risks in water supply and sanitation sector</li> <li>• Directly addressing impacts from climate change through improved understanding of groundwater resources in light of persistent drought. This mainly relates to outcome 3-1: strengthening climate and weather information services</li> </ul>

Review Criteria Questions	Secretariat Comment at PIF/Work Program Inclusion	AfDB Response to Secretariat comments
<p>6. Are the project's/program's indicative targeted contributions to global environmental benefits (measured through core indicators) reasonable and achievable? Or for adaptation benefits?</p>	<p>GEFSEC, 10/23/2018 - Please see Item 6.</p>	<p><u>AfDB 25/10/18</u>. Comment noted and addressed. Core LDCF/SCCF Indicators have been added to the submission as attachment "Chad Project LDCF Core Indicators v 25-10-18". They are reasonable and achievable</p>

Review Criteria Questions	Secretariat Comment at PIF/Work Program Inclusion	AfDB Response to Secretariat comments
<p>Is the institutional arrangement for project/program coordination including management, monitoring and evaluation outlined? Is there a description of possible coordination with relevant GEF-financed projects/programs and other bilateral/multilateral initiatives in the project/program area?</p>	<p>GEFSEC, 10/23/2018 - More information requested. The description of coordination with relevant GEF/LDCF-financed initiatives is adequate, but there does not seem to be any information regarding the institutional arrangement for project coordination. Additionally, the GCF is financing NAP readiness in Chad - any information regarding coordination with GCF-financed initiatives would be greatly appreciated.</p> <p>Recommended action: Please briefly indicate institutional arrangements for project coordination, as well as if and how the project will coordinate with any GCF-financed initiatives.</p> <p>Additionally, the LDCF is already financing some hydromet activities under the Chad National Adaptation Plan project. Please clearly indicate there is no duplication between the proposed hydromet activities under this project and those of the Chad NAP project.</p>	<p><u>AfDB 25/10/18. Comments noted and section 6-Coordination updated.</u></p> <p>- <u>Coordination with Chad GCF Readiness Program Comment noted and addressed under section 6 –coordination.</u></p> <p>- Chad is engaged in the national adaptation plan (NAP) process which includes assessment of vulnerabilities, mainstreaming climate change risks, and addressing adaptation. The GCF financing is part of the process to support the formulation of the NAP, taking into consideration the UNFCCC NAP technical guidelines and the importance of coordination and complementarity with other NAP-related initiatives and support.</p> <p>- Chad submitted a request for a GCF Readiness and Preparatory Support Programme (2016). The aim of the Chad GCF financed readiness program is to provide preparatory support to strengthen the capacity of the National Designated Agency (NDA) so that the NDA can effectively discharge the GCF-related roles and responsibilities and speed up the process of facilitating the development of projects and programmes that are both aligned to the country’s strategic priorities and the GCF investment framework.</p> <p>During the PPG process, the project preparation team will establish the extent of implementation of the NAP process as well as the Chad readiness program and identify mechanisms for synergy/complementarity or lessons that could be used to scale up the climate action in Chad. This will facilitate the integration of climate change adaptation, in a coherent manner, into the water and sanitation masterplan as well as future programmes and activities, in particular development planning processes and strategies at different levels, as appropriate</p> <p><u>Institutional mechanisms for coordination</u> Comment noted. Institutional mechanisms for coordination among the GEF/LDCF/GCF programs, will be defined during the project preparatory phase.</p> <p><u>Coordination with hydromet services under the Chad NAP project</u> Section 6 under coordination has been strengthened. There is no duplication between the proposed hydromet activities under this project and those of the Chad NAP project.</p> <p>This project will build onto efforts made under the CHAD NAP project to strengthen the density of the monitoring network, enhance synergy and avoid duplication. Specific emphasis will be made onto improved climate and weather monitoring and linkages to ground water and water quality monitoring, so as to inform climate adaptation with respect to ground water management.. Mechanisms for coordination for hydromet services, including use of satellite information and data bases, will be detailed at the Project Preparation stage.</p>

Review Criteria Questions	Secretariat Comment at PIF/Work Program Inclusion	AfDB Response to Secretariat comments
<p data-bbox="91 236 383 293">Consistency with National Priorities</p> <p data-bbox="91 328 432 509">Has the project/program cited alignment with any of the recipient country's national strategies and plans or reports and assessments under relevant conventions?</p>	<p data-bbox="472 236 1182 1283">Text for later: The proposed project is country-driven, and focused on immediate needs of vulnerable people, including youth and women. The water sector is identified as a priority in both the NAPA and the 2nd Nat Com. The project is also consistent with National priorities for climate adaptation, as demonstrated in the NDC, which recognizes priority target zones (Kanem, Barh El Ghazal, Batha, Guéra, Hadjer Lamis, Wadi Fira; Ouaddai, Dar Sila, Lac, Moyen-Chari, Borkou, Tibesti, Ennedi Est, Ennedi Ouest) as especially vulnerable to the effects of climate change and, in part, to the arrival of displaced populations. Key measures addressed by this project include (i) Improvement of production techniques by developing water infrastructure, access to improved and adapted inputs (ii) Informing, educating and communicating information relating to climate risk,(improve the observatory used to forecast meteorological events and develop the population's ability to react in the event of a catastrophe) (iii) Improving the seasonal forecast of precipitation and surface runoff and (iv) Management of climate risks. Additionally, the project is part of the National Development Plan (PND 2017-2021), whose aim is to lay the foundations for an emerging Chad. The project will also contribute towards SDG 6 on ensuring availability and sustainable management of WSS for all, through measures such as: protecting and restoration of water-related ecosystems, including forests, wetlands, rivers and aquifers; improving water quality by reducing pollution and managing water scarcity due to drought, through improved ground water governance and drought resilience. Chad's SDG 6 related targets also include raising the access rate of drinking water to 52% by 2015 to 95% in 2030 and the rate of access to sanitation services by 16 % In 2015 to 50% by 2030. In the long term, Chad intends to follow a climate-resilient and low-carbon growth pathway linked to the broader SDGs. Consultation with the Government has been made in respect of the principle of country ownership.</p> <p data-bbox="472 1315 1061 1372">Recommended action: Please briefly link this initiative with the in-country NAP process.</p>	<p data-bbox="1209 236 2123 293"><u>AfDB 25/10/18. Comments noted and Section 7, Consistency with national Priorities updated to provide linkage to the NAP process.</u></p> <p data-bbox="1209 328 2145 512">Chad is engaged in the national adaptation plan (NAP) process which includes assessment of vulnerabilities, mainstreaming climate change risks, and addressing adaptation. The GCF readiness support is part of the process to support the formulation of the NAP, taking into consideration the UNFCCC NAP technical guidelines and the importance of coordination and complementarity with other NAP-related initiatives and support.</p> <p data-bbox="1209 547 2145 695">During the PPG process, the project preparation team will establish the extent of implementation of the Chad readiness program, progress in implementation of the Second National Communication and identify mechanisms for synergy/complementarity or lessons that could be used to scale up the climate action in the water supply and sanitation sector in Chad.</p>

**Comments to be addressed at PPG Stage:**

<b>GEF comments</b>	<b>AfDB Response</b>
<p>-During the PPG process, the project preparation team will establish the extent of implementation of the NAP process as well as the Chad readiness program and identify mechanisms for synergy/complementarity or lessons that could be used to scale up the climate action in Chad. This will facilitate the integration of climate change adaptation, in a coherent manner, into the water and sanitation masterplan as well as future programmes and activities, in particular development planning processes and strategies at different levels, as appropriate.</p>	<p>Thank you for the comment. This was done during the PPG process – notably in the Inception Workshop and subsequent consultations – as evidenced in the re-working of Component 1. Indeed, it became immediately apparent that due to budgetary constraints, the outcomes of Component 1 were refined and scaled back in order to ensure that the outputs were both financially viable and in line with national priorities and needs (including in terms of the implementation of the NAP – please refer to Table 5 in the CEO Endorsement Form.</p>
<p>-Institutional mechanisms for coordination among the GEF/LDCF/GCF programs, will be defined during the project preparatory phase.</p>	<p>Thank you for the comment. The institutional mechanisms were discussed (e.g. GEF Country Focal Point meeting) and designed as explicated in the CEO Endorsement Form Question 6 (<i>Institutional Arrangement and Coordination</i>). These mechanisms utilize the structures already in place for the AfDB funded PAEPA-SU-MR project. It should be noted that the institutional arrangement, including the project management unit, is extremely robust, as evidenced by the low percentage of GEF funding being allocated to project costs (USD 120,000; or 1.4% of the requested funding).</p>
<p>-Mechanisms for coordination for hydromet services, including use of satellite information and data bases, will be detailed at the Project Preparation stage.</p>	<p>Thank you for the comment. Due to the changes that were made to the Project Results Framework (see Comment 8) in order to ensure that the project was realizable and in line with Chadian national priorities, the activities for a hydromet service were scaled back to a feasibility study rather than the implementation of a full scale project.</p> <p>As such, such discussions were no longer the focus or necessary at the PPG stage, and therefore not included in the ProDoc.</p>

-During the PPG process, the project preparation team will establish the extent of implementation of the Chad readiness program, progress in implementation of the Second National Communication and identify mechanisms for synergy/complementarity or lessons that could be used to scale up the climate action in the water supply and sanitation sector in Chad.

Thank you for the comment. Please refer back to our response to the first comment.



**ANNEX C: Status of Utilization of Project Preparation Grant (PPG). (Provide detailed funding amount of the PPG activities financing status in the table below:**

**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)**

**ANNEX E: Project Map(s) and Coordinates**

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



# Submitted to GEF Secretariat Review

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