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Report No: PAD3701

INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT APPRAISAL DOCUMENT
ON A
PROPOSED GRANT

IN THE AMOUNT OF SDR 36.6 MILLION
(US$ 50 MILLION EQUIVALENT)

AND

ON A
PROPOSED GLOBAL ENVIRONMENT FACILITY GRANT

IN THE AMOUNT OF US$ 4.45 MILLION

TO THE

REPUBLIC OF CHAD

FOR A

ALBIÄ - CHAD LOCAL DEVELOPMENT AND ADAPTATION PROJECT

June 1, 2020

Environment, Natural Resources and Blue Economy Global Practice
Africa Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective Apr 30, 2020)

Currency Unit =	Franc CFA
XAF 598 =	US$1
US$ 1 =	SDR 0.732

FISCAL YEAR
January 1 - December 31

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ABBREVIATIONS AND ACRONYMS

AFD	*Agence Française de Développement* (French Development Agency)
AFR100	African Forest Landscape Restoration Initiative
CCP	*Conseil Consultatif Provincial* (Provincial Consultative Committee)
CE	Citizen Engagement
CEMAC	*Commission Economique et Monétaire de l'Afrique Centrale* (Economic Community of Central Africa States)
CERC	Contingency Emergency Response Component
CITES	Convention on International Trade in Endangered Species of Wildlife Fauna and Flora
COVID-19	Coronavirus Disease 2019
CPF	Country Partnership Framework
CRI	Core Results Indicator
CSA	Climate-smart Agriculture
DA	Designated Account
DCFAP	*Direction de la conservation de la faune et des aires protégées* (Directorate of Wildlife Conservation and Protected Areas)
DEELCPN	*Direction des. Evaluations Environnementales et de la Lutte Contre les Pollutions et les nuisances* (Directorate of Environment, the Environmental Assessment, and Pollution and Nuisance Control Department)
DFIL	Disbursement and Financial Information Letter
DPNRFC	*Direction des Parcs Nationaux, des Réserves de Faune et de la Chasse* (Directorate of National Parks, Wildlife Reserves and Hunting)
ECOSIT	*Enquête sur la Consommation et le Secteur Informel au Tchad* (Survey on Consumption and Informal Sector in Chad)
EFA	Economic and Financial Analysis
EAGLE	Eco Activists for Governance and Law Enforcement
EIRR	Economic Internal Rate of Return
ESMF	Environmental and Social Management Framework
ESCP	Environmental and Social Commitment Plan
ESF	Environmental and Social Framework
EU	European Union
FA	Financing Agreement
FM	Financial Management
FMS	Financial Management Specialist
GA	Grant Agreement
GBV	Gender-based Violence
GDP	Gross Domestic Product
GEF	Global Environment Facility
GEMS	Geo-enabled Monitoring Systems
GHG	Green House Gas
GIS	Geographic Information System
GIZ	*Gesellschaft für Internationale Zusammenarbeit* (German Corporation for International Cooperation)
GoC	Government of Chad
GPS	Global Positioning System
GRM	Grievance Redress Mechanism
GRS	Grievance Redress Service
GWP	Global Wildlife Program
HCI	Human Capital Index
HDI	Human Development Index

IAPS	Integrated Agricultural Production Sites
IBRD	International Bank for Reconstruction and Development
ICT	Information and Communication Technologies
IDA	International Development Association
IFAD	International Fund for Agricultural Development
IFRs	Interim Financial Reports
INDC / NDC	Intended Nationally Determined Contribution / Nationally Determined Contribution
INSEED	*Institut National de la Statistique, des études économiques et démographiques* (National Institute of Statistics, Economics and Demography)
IPCC	Inter-Governmental Panel on Climate Change
IPF	Investment Project Financing
IPV	Intimate Partner Violence
IRM	Immediate Response Mechanism
ISR	Implementation Status and Results Report
IWT	International Wildlife Trade
JMP	Joint Monitoring Program
LDP	Local Development Plan
M&E	Monitoring and Evaluation
MDOD	*Maitrise D'Ouvrage Déléguée* (Delegated Management)
MEEP	*Ministère de l'Environnement, de l'Eau et de la Pêche* (Ministry of Environment, Water and Fisheries)
NECMS	National Elephant Conservation and Management Strategy
NGO	Non-governmental Organizations
NDP	National Development Plan
NPF	New Procurement Framework
NPV	Net Present Value
OP/BP	Operations Procedures/Bank Procedures
OROA	Ouadi Rime Ouadi Achim
PA	Protected Area
PARIIS	Sahel Irrigation Initiative Support Project
PARSAT	*Projet d'amélioration de la résilience des systèmes agricoles au Tchad*
PDO	Project Development Objective
PF	Process Framework
PIM	Project Implementation Manual
PIU	Project Implementation Unit
PNSA	*Plan National Stratégique d'Assainissement* (National Sanitation Policy and Strategy Document)
PPA	Project Preparation Advance
PPP	Public Private Partnership
PPSD	Project Procurement Strategy for Development
PRAMS	Procurement Assessment and Monitoring System
PRAPS	*Projet Régional d'Appui au Pastoralisme au Sahel* (Regional Sahel Pastoralism Support Project)
PROLAC	Lake Chad Recovery Project
ProPAD	*Projet d'appui à la productivité et à la résilience climatique* (Climate Resilience Agriculture and Productivity Enhancement Project)
RAP	Resettlement Action Plans
RCP	Representative Concentration Pathway
RPF	Resettlement Policy Framework
SCD	Systematic Country Diagnosis
SCF	Sahara Conservation Fund
SDGs	Sustainable Development Goals
SDEA	*Schéma Directeur de l'Eau et de l'Assainissement* (Water and Sanitation Master Plan)
SEA/SH	Sexual Exploitation and Abuse / Sexual Harassment

SEP	Stakeholder Engagement Plan
SNRM	Sustainable Natural Resources Management
SMART	Spatial Monitoring and Reporting Tool
SORT	Systematic Operations Risk Rating Tool
STEP	Systematic Tracking of Exchanges in Procurement System of World Bank
TOR	Terms of Reference
UNDP	United Nations Development Program
UNICEF	United Nations Children's Fund
WASH	Water Access, Sanitation and Hygiene
WB	World Bank
WHO	World Health Organization
WP	With Project
WOP	Without Project
WSS	Water Supply and Sanitation
WRM	Water Resource Management
XAF	Central African CFA Franc
ZSL	Zoological Society of London

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DATASHEET

BASIC INFORMATION

Country(ies)	Project Name	
Chad	ALBIÄ - Chad Local Development and Adaptation Project	
Project ID	**Financing Instrument**	**Environmental and Social Risk Classification**
P171611	Investment Project Financing	Moderate

Financing & Implementation Modalities

[ ] Multiphase Programmatic Approach (MPA)	[✓] Contingent Emergency Response Component (CERC)
[ ] Series of Projects (SOP)	[✓] Fragile State(s)
[ ] Performance-Based Conditions (PBCs)	[ ] Small State(s)
[ ] Financial Intermediaries (FI)	[ ] Fragile within a non-fragile Country
[ ] Project-Based Guarantee	[✓] Conflict
[ ] Deferred Drawdown	[ ] Responding to Natural or Man-made Disaster
[ ] Alternate Procurement Arrangements (APA)	

Expected Approval Date	Expected Closing Date
12-Jun-2020	31-Oct-2025

Bank/IFC Collaboration

No

Proposed Development Objective(s)

The project development objective is to improve the management of natural resources and the livelihood of populations in selected climate vulnerable areas in and around the Ouadi Rime and Ouadi Achim (OROA) reserve in Chad.

Components

Component Name	Cost (US$, millions)
Component 1. Sustainable Natural Resources Management and Protected Areas	13.00
Component 2. Promoting Diversified, Resilient, Sustainable Livelihoods	36.45
Component 3: Project Management, Coordination, and Monitoring	5.00
Component 4: Contingency Emergency Response Component	0.00

Organizations

Borrower:	Republic of Chad
Implementing Agency:	Ministry of Envrionment, Water and Fisheries

PROJECT FINANCING DATA (US$, Millions)

SUMMARY

Total Project Cost	54.45
Total Financing	54.45
of which IBRD/IDA	50.00
Financing Gap	0.00

DETAILS

World Bank Group Financing

International Development Association (IDA)	50.00
IDA Grant	50.00

Non-World Bank Group Financing

Trust Funds	4.45
Global Environment Facility (GEF)	4.45

IDA Resources (in US$, Millions)

	Credit Amount	Grant Amount	Guarantee Amount	Total Amount

Chad	0.00	50.00	0.00	50.00
National PBA	0.00	50.00	0.00	50.00
Total	**0.00**	**50.00**	**0.00**	**50.00**

Expected Disbursements (in US$, Millions)

WB Fiscal Year	2020	2021	2022	2023	2024	2025	2026
Annual	0.00	2.14	7.00	15.00	15.00	8.16	2.70
Cumulative	0.00	2.14	9.14	24.14	39.14	47.30	50.00

INSTITUTIONAL DATA

Practice Area (Lead)

Environment, Natural Resources & the Blue Economy

Contributing Practice Areas

Water

Climate Change and Disaster Screening

This operation has been screened for short and long-term climate change and disaster risks

SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)

Risk Category	Rating
1. Political and Governance	Substantial
2. Macroeconomic	Substantial
3. Sector Strategies and Policies	Substantial
4. Technical Design of Project or Program	Moderate
5. Institutional Capacity for Implementation and Sustainability	Substantial
6. Fiduciary	Substantial
7. Environment and Social	Moderate
8. Stakeholders	Moderate
9. Other	Substantial

10. Overall	Substantial

COMPLIANCE

Policy

Does the project depart from the CPF in content or in other significant respects?

[ ] Yes [✓] No

Does the project require any waivers of Bank policies?

[ ] Yes [✓] No

Environmental and Social Standards Relevance Given its Context at the Time of Appraisal

E & S Standards	Relevance
Assessment and Management of Environmental and Social Risks and Impacts	Relevant
Stakeholder Engagement and Information Disclosure	Relevant
Labor and Working Conditions	Relevant
Resource Efficiency and Pollution Prevention and Management	Relevant
Community Health and Safety	Relevant
Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Relevant
Biodiversity Conservation and Sustainable Management of Living Natural Resources	Relevant
Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	Not Currently Relevant
Cultural Heritage	Relevant
Financial Intermediaries	Not Currently Relevant

NOTE: For further information regarding the World Bank's due diligence assessment of the Project's potential environmental and social risks and impacts, please refer to the Project's Appraisal Environmental and Social Review Summary (ESRS).

Legal Covenants

Sections and Description
Schedule 2. Section I. A. 2 (a) and (b) of IDA FA and GEF GA. The Recipient shall, not later than six (6) months after the Effective Date, establish and thereafter maintain, throughout the Project implementation period, with composition, mandate and resources satisfactory to the Association, a Project Steering Committee.

Sections and Description
Schedule 2. Section I. A. 3 (d) of IDA FA and GEF GA. The PIU shall, not later than three (3) months after the Effective Date, acquire an accounting software for the management of the Project, with specifications acceptable to the Association.

Sections and Description
Schedule 2. Section I. A. 3 (e) of IDA FA and GEF GA. The PIU shall, not later than five (5) months after the Effective Date, recruit and thereafter maintain, throughout the Project implementation period an external auditor, whose qualification, experience and terms of reference shall be acceptable to the Association

Conditions

Type	Description
Effectiveness	Article IV. 4.01 (a) of IDA FA and GEF GA. The Co-financing Agreement has been executed and all conditions precedent to its effectiveness or to the right of the Recipient to make withdrawals under it (other than the effectiveness of this Agreement) have been fulfilled.
Effectiveness	Article IV. 4.01 (c) of IDA FA and GEF GA. The Recipient has recruited the following key staff for the Project Implementation Unit, each on the basis of terms of reference, qualifications and experience satisfactory to the Association and in accordance with the provisions of Section I.A.3 to Schedule 2: (i) a project coordinator; (ii) a procurement specialist; (iii) a financial management specialist; (iv) an accounting specialist; (v) a monitoring and evaluation specialist; (vi) an environmental safeguards specialist; (vii) a social development and gender specialist; (viii) a water specialist; (ix) an internal auditor; (x) a communication/citizen engagement specialist; (xi) a conservation specialist; and (xii) an accounting/administrative assistant.
Effectiveness	Article IV. 4.01 (b) of IDA FA and GEF GA. The Recipient has adopted, and disseminated to the entities involved in the implementation of the Project, the Project Implementation Manual in form and substance satisfactory to the Association - noted below Article IV. 4.01 (b) of IDA FA and GEF GA
Disbursement	Schedule 2. Section III. B (b) of IDA FA and GEF GA. No withdrawal shall be made under Category (2) unless and until the SCF Agreement has been executed in form and substance

	satisfactory to the Association and all conditions precedent to its effectiveness have been fulfilled
Type Disbursement	Description No withdrawal shall be made under Categories (4) and (5) - Schedule 2. Section III. B (c) of IDA FA - and Categories (3) and (4) - Schedule 2. Section III. B (c) of GEF GA - unless and until the SOS SAHEL France Agreement has been executed in form and substance satisfactory to the Bank and all conditions precedent to its effectiveness have been fulfilled unless and until the SOS SAHEL France Agreement has been executed in form and substance satisfactory to the Association and all conditions precedent to its effectiveness have been fulfilled
Type Disbursement	Description Schedule 2. Section III. B (d) of IDA FA and GEF GA. No withdrawal shall be made under Category (7), unless and until the Association is satisfied, and has notified the Recipient of its satisfaction, that all of the following conditions have been met in respect of said activities: (i) declaration of an eligible crisis or emergency; (ii) preparation and disclosure of all environmental and social instruments required for CERC activities; (iii) establishment of the Coordinating Authority with adequate staff and resources; and (iv) adoption of a CERC manual.

I. STRATEGIC CONTEXT

A. Country Context

1. **Chad faces major economic and geographic challenges as it strives to reduce poverty and increase shared prosperity.** Chad is a poor, landlocked, low-density and climatically diverse, Sahelian country with a population of 15.8 million inhabitants in 2019, most of whom are rural (78 percent)[1]. The estimated average density of population is 8.5 inhabitants per km², but its population is very unequally distributed with densities ranging from 0.6 inhabitants per km² in the Northern provinces (Borkou, Ennedi East, Ennedi West and Tibesti) to 63 inhabitants per km² in Logone Occidental[2].

2. **Economic growth has been severely affected since 2015 by the fall in oil prices and remains marked by conflict-related instability in border areas**. In addition, due to the Coronavirus Disease 2019 (COVID-19) crisis, it is expected that such a crisis will have important implications on growth, macro and poverty because of further oil price decline as well as trade restrictions that could trigger price spikes. Indeed, Sub-Saharan Africa will experience its first recession in 25 years, with the Economic Community of Central African States (CEMAC) being the most affected sub-region. Economic growth will decline from 2.4 percent in 2019 to between 2.1 and -5.1 percent in 2020, costing the region between US$37 billion and US$79 billion in output losses[3]. CEMAC, with five (out of six) net oil-exporters will be the most affected region with GDP expected to decline by more than 5 percent in 2020. There is expected to be a growth contraction of -0.2 percent in Chad[4]. This fragility, combined with high population growth (3.6 percent per year) and aggravated by movements of refugees and displaced people and a humanitarian crisis, puts some bounds on the gross domestic product per capita (US$720 in 2016) and the efforts to eradicate poverty (poverty rate declined from 54.8 percent in 2003 to 40.2 percent in 2019[5]).

3. **Nearly half of the population lives below the national poverty line, more than 90 percent of the poor live in rural areas, and Chad ranks last in the world on the World Bank Human Capital Index.** Less than one in two children has access to safe drinking water, only one in 10 children has access to basic sanitation and only one in 17 children wash their hands with soap and water. 40 percent of children suffer from nutritional deficiencies affecting their growth. A Chadian girl spends about 62 days a year drawing water instead of studying. Increased investment in access to safe drinking water and sanitation and hygiene can effectively contribute to strengthening human capital.

4. **Despite governance and security challenges, particularly instability in neighboring countries, Chad has significant agricultural potential** (which is critical as COVID-19 impact on food security is not well known yet). About 39 million hectares of arable land are available and the country counts a herd of over 100 million head of livestock (27,604,000 head of cattle, 30,791,242 head of sheep, 34,408,208 head of goat and 7,285,609 head of camels). The sector accounted for nearly 50 percent of GDP in 2017 and directly and indirectly for 90 percent of

[1] Institut National de la Statistique des Etudes Economiques et Démographiques du Tchad : http://www.inseed-td.net/
[2] Institut National de la Statistique des Etudes Economiques et Démographiques, Population Projections 2009-2030. INSEED-Tchad: http://www.inseed-td.net/index.php/thematiques/statistique-demographique/population
[3] see Africa's Pulse, Spring 2020
[4] The downward growth revision reflects macroeconomic risks arising from the following factors: (i) growth contraction among the region's key trading partners such as China, the US and the Euro Area; (ii) fall in commodity prices (iii) reduced tourism activities and, (iv) economic restriction measures to contain the COVID-19 pandemic.
[5] http://macropovertyoutlook.worldbank.org/mpo_files/mpo/mpo-sm20-tcd.pdf

the population. In addition, locust swarms are predicted to arrive in Chad by mid-June 2020[6], the summer reproduction period which could potentially impact negatively the agriculture production sector.

5. **Despite the reforms initiated by the government in the context of decentralization, the transfer of powers from the state to the provinces, departments and communes is slow to take place.** This results in significant differences in human development and local development indicators across regions in Chad. The capital of Chad (N'Djamena) has the highest score in the Human Capital Index (HCI) nationally, however some regions of the Sahelian-Saharan savannas landscape[7] are among the ten regions having the lowest HCI score. The establishment of a local development system is fundamental for any economic and social development and will allow people at the grassroots to take control of their destiny, manage and protect their own resources.

6. **Chad ranks 160 out of 162 on the Gender Inequality Index[8].** This index measures three important aspects of human development—reproductive health, empowerment, and economic status. Gender Based Violence (GBV) is highly prevalent and it is estimated that 28.6 percent of women nationwide have experienced physical or sexual violence by an intimate partner at some point in their lives[9]. In addition, according to UNICEF, Chad has the third highest prevalence rate of child marriage in the world with 67 percent of girls married before the age of 18 and 29 percent under the age of 15[10]. This situation may be exacerbated in situations of high insecurity as families may see marrying their young daughters to older men as a way to protect them and to improve access to natural and financial resources. Furthermore, wife beating is seen as justified by 73.5 percent of women and 43.5 percent of women who have experienced Intimate Partner Violence (IPV) never sought help to stop the violence and never told anyone (DHS, 2015).

B. Sectoral and Institutional Context

7. **Populations of the Sahel belt in Chad are among the poorest in the country and their livelihood, which is closely dependent upon natural resources, is under threat**. Rural populations in general, and those in the North in particular, experience poverty rates of 40 percent or more[11]. Women are disproportionally affected by poverty and have significant less livelihood opportunities than men in the project area.[12] While women and girls are also often more vulnerable and suffer more from the consequences of food insecurity, they remain the main pillars of agricultural production in the area. The rural population of the Sahel belt is struggling with meeting basic development needs and achieving elementary standards of living (e.g., food security, access to water). Chad has the highest share of population in multidimensional poverty (85.7 percent) and among the lowest scores in the Human Development Index (0.401) in 2018. Livestock (and to a limited extent, farming or rather gardening) is traditionally the basis of livelihood in Sahel but the fragile balance with the environment is broken, putting this livelihood at risk. Population growth (currently above 3 percent per annum) and livestock expansion (with urban populations now investing in larger herds) are putting a high pressure on natural resources (e.g., wooded areas like ouadis[13], grazing areas, biodiversity, water). Inadequate management and weak enforcement cannot prevent their rapid degradation (e.g., wood harvesting, overgrazing, poaching, in and around protected areas), letting desertification progress quickly. Climate change is accelerating this degradation process, notably by increasing

[6] *https://www.cgiar.org/news-events/news/west-africa-is-threatened-by-a-desert-locust-invasion/*
[7] i.e. Borkou
[8] United Nations Development Program (UNPD), 2018
[9] The Demographics and Health Survey (DHS), 2015
[10] United Nations International Children Fund (UNICEF), 2018
[11] http://macropovertyoutlook.worldbank.org/mpo_files/mpo/mpo-sm20-tcd.pdf
[12] A technical study on gender and climate change conducted as part of the project preparation, "Etude sur le genre et l'impact du changement climatique sur les femmes et les mécanismes d'adaptation aux changements climatiques », March 2020
[13] Arabic name for water course, including its whole ecosystem – flora and fauna

water stress, further pushing the populations of Sahel into poverty and fueling conflicts between different users. Finally, as the desert locust invasion in East Africa continues, West Africa is concerned about the risk of it spreading westwards and desert locust swarms are then highly likely to arrive in Chad as soon as June 2020, which will mark the start of an invasion throughout the western part of the species' distribution range[14].

8. **Against this backdrop, the Project seeks to support the restoration and sustainable management of natural resources (including land, water, wildlife and flora), to promote climate-smart agriculture practices (including specific measures in pest management and pest control, e.g. locust), and to enhance the natural capital basis for the livelihood of local populations with a focus on vulnerable populations.** Considering the recent COVID-19 pandemic, the project support will have additional relevance for local communities through land and livelihoods resilience (including job creation through income generating activities and health system strengthening through Water Access, Sanitation and Hygiene - WASH). In addition, as the COVID-19 outbreak shows, zoonoses originating from wildlife pose huge public health, biosafety, and even global security risks. Anthropogenic pressures are eliminating the buffering effect that biodiversity and ecosystems provide, increasing sanitary risks. Illegal wildlife trade is also directly aggravating these risks, by bringing nature too close to human populations. By supporting improved management of natural resources and the restoration of habitats and supporting the fight against Illegal Wildlife Trade (IWT), the Project is directly contributing to restoring the natural buffer and reinforcing defense against future pandemics.

9. **The Ouadi Rime Ouadi Achim (OROA) Reserve is the geographic anchor of the project area** (see Box 1), which also includes selected hotspot communities located on the perimeter of the Reserve[15]. To improve and diversify their livelihood, the Project will also invest in income-generating activities (around climate-smart agriculture) and in water supply and sanitation infrastructure, especially for women. To ensure the feasibility and sustainability of the interventions, the Project will also invest in improving the knowledge and management of the water resources, fundamental for sustaining livelihood activities. It is expected that these interventions will also make the area and the populations more resilient to mounting climate variability and change. The Project will also support women in having a better access to and control over natural resources, such as land and water. This will improve the living conditions of the entire population in general because in rural areas of Chad, women are often responsible for the water, food and energy needs of households and communities. The following paragraphs provide more details on sectoral context for biodiversity, water resources and climate change in the project area.

[14] *Centre International de Recherche Agronomique et de Développement*, 2020: cgiar.org/news-events/news/west-africa-is-threatened-by-a-desert-locust-invasion/

[15] These hotpsots are: Salal, Kouba Olanga, Kalait, Arada and Djedaa

Box 1. Project Area

The Ouadi Rime Ouadi Achim Reserve is the geographic heart of the Project. Located in central-north Chad's Sahel and sub-desert zones, the Reserve covers 77,950 km^2, making it the largest protected area in the country and one of the largest in Africa (see Annex 4 for a more detailed description). 70,000 people live in the reserve. This population is mainly (i) nomadic people (70 percent) who live from livestock activities (pastoralism), and (ii) semi nomadic people (30 percent) who live from both livestock and small-scale agricultural activities in the extreme south of the reserve.

Given the immensity of the proposed project area, project intervention will focus on hotspots identified during project preparation based on both dialogue with national stakeholders and sectoral studies that allow synergy of actions. There is one hotspot per province (5 hotspots). These hotspots are Salal (Barh El Gazal), Kouba Olanga (Borkou), Kalait (Ennedi West), Arada (Wadi Fira) and Djedaa (Batha).

Hotspots have been identified based on a nexus of (i) high density of population, (ii) high level of degradation of land and pressure on natural resources, (iii) low access to water services, (iv) poor resilience of agricultural production to climate change, and (v) high unemployment rate (with specific focus on women and youth) as shown in Table 1 below and in Annex 6.

Map 1. Map of the Project Area, 2020

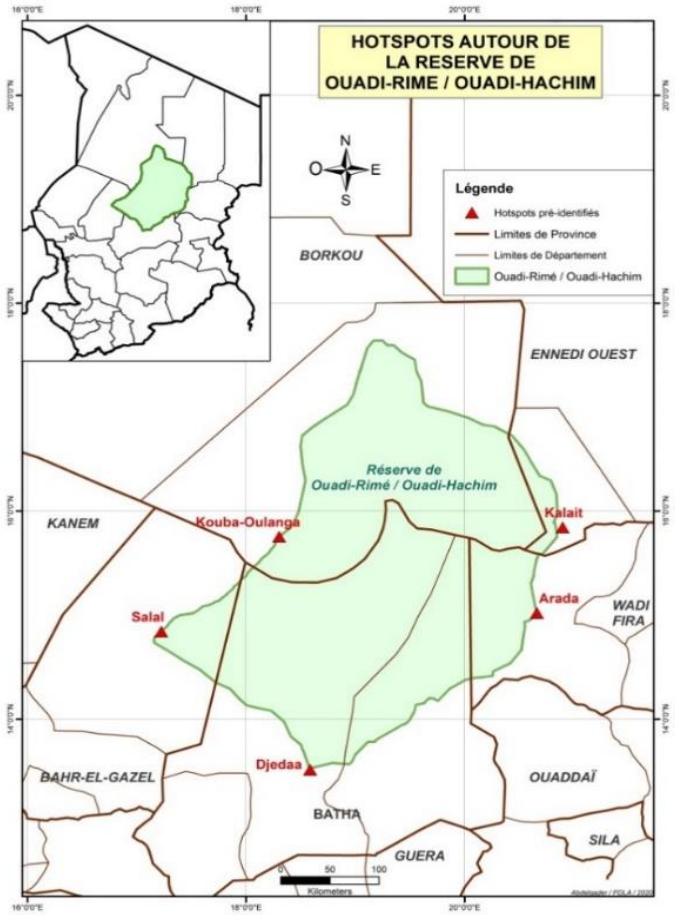


Table 1. Project Area. Data on Hotspots (source, sectoral studies, ALBIÄ 2020)

Nexus		Year	Kouba-Oulanga (Borkou)	Salal (Bahr El Gazal)	Kalait (Ennedi Ouest)	Arada (Wadi Fira)	Djedaa (Batha)
Density of population	**At provincial level (inhab/km²)**	2020	0.56	7.05	0.69	13.07	7.86
	Population (hab)	2020	4,851	7,174	13,340	26,815	20,808
Level of degradation of land and pressure on natural resources	**Desertification**	2000-2020	Very High	High	Low	High	Very high
	Sand and dunes (ha/year)	*2000-2020*	*124,733*	*41,020*	*-7,971*	*25,958*	*59,567*
	Ag. area	2000-2020	Increase	High reduction	Reduction	Reduction	High reduction
	Rainy cultures (ha/year)	*2000-2020*	*5,071*	*-60,359*	*-179*	*-12,832*	*-65,384*
	Pressure on natural resources		Substantial	Moderate	Moderate	High	Low
	Water points (ha/year)	*2000-2020*	*-409*	*6,672*	*-1,227*	*-1,252*	*7,909*
	Forests (ha/year)	*2000-2020*	*50*	*-7384*	*-44*	*181*	*4281*
	Steppes (ha/year)	*2000-2020*	*-13,072*	*1,023*	*15,807*	*-59,754*	*13,947*
Access to water services	**Water coverage rate by province (%)**	2018	40%	65%	0%	6%	118%
	Outbreak rate	2020	69%	73%	100%	71%	15%
	Sanitation risks	2020	11%	2%	94%	70%	24%
Resilience of agricultural production to climate change*		2020	4	4	4	4	3
Unemployment rate**	**Provincial average (%)**	2020	15.6%	13.95%	15.6%	4.3%	3.7%
	Women (%)	2020	6.8%	20.3%	6.8%	0.3%	2.3%
	Men (%)	2020	20.0%	10.7%	20.0%	7.0%	5.1%
Poverty rate***	**Provincial average (%)**	2011	41.8%	42.6%	41.8%	38.4%	45.6%

** 0 is not vulnerable and 5 is highly vulnerable*

*** National average was 2.23% in 2018, source INSEED*

**** Enquête sur la Consommation et le Secteur Informel au Tchad (ECOSIT 3), 2011*

Chad Biodiversity at Threat

10. **The Ouadi Rime Ouadi Achim (OROA) Reserve provides a range services of local to global relevance**: (i) vast and relatively intact area of seasonal grazing lands and woodlands; (ii) exceptional (possibly unique) assemblage of large birds and mammals of global significance (e.g., scimitar-horned oryx, addax, dama gazelle, dorcas gazelle, large bustards); (iii) rich avifauna (local and migratory species), with a continentally significant population of large vultures (e.g., lappet-faced, Rüppell's, hooded, Egyptian, white-backed) and raptors; and (iv) natural woodland barriers against desert encroachment (e.g., Ouadis Kharma and Achim). The Reserve is successfully reintroducing oryxes and addaxes and is the only place on Earth where oryxes can be observed in the wild. Its territory is, however, under growing threat, notably, from increased grazing pressure (as now mega herds are set to browse on the Reserve), poaching, as well as more prevalent bushfires (believed to be related to more intense North-South traffic through the Reserve).

11. **Beyond the OROA Reserve global importance in terms of wildlife and biodiversity, there is another major challenge at national level which is poaching of elephants**. Indeed, Chad's elephant population has decreased from an estimated 300,000 in the 1930s[16] to around 3,885 individuals in 2006.[17] Elephant population continued to decrease to 450 animals in 2010 but started to increase again for the first time in decades. In 2018, there were 559 animals in Zakouma National Park[18].Chad's remaining elephants are around the Zakouma National Park ecosystem, and in the south, along the Central African Republic and the Republic of Cameroon boundary. Elephant poaching to supply the illegal ivory trade is the main cause of this decline in numbers and distribution. The population decline in elephants and other species is worsened by habitat destruction and fragmentation for agriculture, development, and the southwards extension of the desert due to desertification. Wildlife population decline in Chad has been further exacerbated by the long-term instability and civil wars.

12. **The Government of Chad is committed to stop the poaching crisis and the wildlife trafficking and protect its natural resources.** Chad was one of the founding governments for the Elephant Protection Initiative, and has developed a robust draft of a National Elephant Conservation and Management Strategy, which details the multi-faceted actions needed to secure the remaining elephant populations – including improving law enforcement and judiciary; strengthening land use planning and management to secure ecosystem connectivity and functionality, reduce habitat degradation and restore vegetation coverage; and improve community engagement for wildlife management which needs to be coupled with poverty reduction and improved livelihoods. These actions will ultimately contribute to sustainable productivity in landscapes, and climate change mitigation measures.

13. **Although it is still too early to project the demand and supply shocks to the IWT market due to COVID-19**, experts project poaching will increase in some key areas and there will be no widespread operational pause for wildlife traffickers to meet demand wildlife products (e.g. rhino horn). It is expected that macroeconomic impacts of the pandemic will undermine the overall profitability of global illegal wildlife trade, but these impacts will be short-lived unless concerted effort is made to exploit the current economic vulnerabilities of wildlife traffickers. Experience from the 2002-03 Severe Acute Respiratory Syndrome (SARS) outbreak showed that despite a short-term disruption in wildlife consumption in key demand markets, demand rebounded and increased within 2-3 years.

14. **To support Chad's efforts in addressing challenges for biodiversity and ecosystems, the Project will contribute to protecting wildlife and natural habitat in the OROA Reserve** through supporting selected activities in the management plan of the reserve (around knowledge management, valorization, and monitoring) as well as for combating wildlife crime at the national level, including through improving regional dialogue and information exchange on elephant poaching and trafficking.

Water: Water Resource Management (WRM) and Water Supply and Sanitation (WSS)

15. **The project area is endowed by limited ephemeral rivers, seasonal Ouadis, and groundwater resources.** The eastern part is where the scant surface water resources mainly exist, including the Ouadis which flow East to West, and the permanent waterhole in the South-East, near Djedda, where most of the precipitation also occurs (around 400 mm/year). Due to erosion and land degradation, most of the runoff evaporates and infiltrates. The Western area is fully dependent on groundwater and seasonal Ouadis, with precipitation between 0 and 200

[16] Antonínová M., Malachie D.N., Banymary D. (2014). National Elephant Conservation and Management Strategy for Chad (NECMSC) 2015 – 2019. Direction des Parcs Nationaux, des Réserves de Faune et de la Chasse (DPNRFC) & African Parks, Chad.
[17] Blanc, J.J., Barnes, R.F.W., Craig, G. C., Dublin, H.T., Thouless, C.R., Douglas-Hamilton, I. and Hart, J.A. (2007). African elephant status report 2007, an update from the African elephant Database IUCN/SSC African Elephant Specialist Group. IUCN.
[18] *https://www.africanparks.org/the-parks/zakouma*

mm/year. These seasonal Ouadis – which are key resources for pastoralists and small farmers - are silting at a fast rate, due to desertification. Though overall groundwater is available, the quality of some aquifers - that could be easily exploited as not too deep (like the quaternary aquifer[19]) - is not always good, thus in some places, operation cost is expensive. Although some monitoring equipment exist in the project area, most of them are not maintained and water resources (availability, quality, and variability) are not monitored due to lack of funds at the central level. Due to mounting pressures, both socio-economic and climate change, a proper monitoring and management of water resources is becoming paramount. The impacts of climate change on water resources management is described further below.

16. **Access to drinking water[20] and sanitation remains very low, particularly for rural populations in the Sahel belt, with high associated health costs**. For rural populations including those in the project area, there is no access to safe drinking water and only 39 percent have access to basic water service; in fact the population in the project area has only about 50 percent of the access to those in urban areas, according to estimates by the WHO-UNICEF Joint Monitoring Program[21] (JMP). Women and children are traditionally responsible for fetching water, and women often have to travel several kilometers to reach the nearest source of drinking water. Furthermore, the prevalence of open defecation is very high in rural areas, sometimes as high as 80 percent (compared to 30 percent of urban populations that have access to basic sanitation services). As a result, Chad has the highest mortality rate globally attributed to unsafe water, unsafe sanitation and lack of hygiene (101 per 100,000 population) and the JMP estimates the economic losses associated with poor sanitation (higher infant mortality, increased health costs and increased travel time to a safe site of defecation) at 2.1 percent of the GDP.

17. **Access to drinking water and sanitation is a priority highlighted in the National Sustainable Development Goals (SDGS) and Vision 2030: The Chad We Want.** The funding needs to both expand access to drinking water and develop sanitation are massive. Ensuring the sustainability of water supply systems through management models adapted to local issues is particularly important to support the development of infrastructure and the quality of services provided to populations in small towns and villages. The sector is engaged in a dynamic of reforms, some of which need to be strengthened or deepened to give full strategic and operational coherence to the results intended. The Chadian WSS is regulated by the following documents: (i) the Water Code, adopted in 1999 and its implementing texts; (ii) the Water and Sanitation Master Plan (SDEA 2003 - 2020); and (iii) the National Sanitation Policy and Strategy document, drawn up in 2017 as part of a health emergency and align with the SDGs. Despite the gradual adoption of implementing texts for the Water Code since 1999, the implementation of the legal framework for drinking water has faced some challenges. The adoption of these texts was not translated into a policy and strategy document defining the guidelines for managing drinking water supply infrastructure. There are also weaknesses in the dissemination and the ownership of the rules and principles for the management of rural water supply systems, which hamper the actions of operators. These weaknesses are linked to the poor or lack of social intermediation/behavior change communication of post-project coordination to the beneficiary communities.

18. **In response to these challenges, the Project will help increase access to safe and reliable WSS services** and promote hygienic practices in selected semi-urban and rural zones that require expansion and improvement of services in communities to achieve universal access. Optimization by using multi-villages water supply systems will be evaluated. These activities will be complemented with measures to protect water sources and maximize

[19] The quaternary aquifer is the most recent sedimented layer at the quaternary period and above the tertiary layer aquifer.
[20] 87 percent of drinking water comes from groundwater, though herders and some rural populations use surface water during the rainy season. As water from some sources is not of good quality, it requires treatment before consumption. It is thus important to focus on the water quality issue for all drinking water infrastructure to be rehabilitated or realized.
[21] https://www.unwater.org/publication_categories/whounicef-joint-monitoring-programme-for-water-supply-sanitation-hygiene-jmp/

their potential use, improve water quality, and increase sustainable water management, thereby increasing resilience to climate exacerbated droughts and floods in the targeted areas.

Climate Change

19. **Climate change risk and desertification are considered as major threats for Chad.** Chad is expected to become a **hotspot for extreme high temperatures, droughts, and desertification** as climate change intensifies over the coming decades. Over the period from 1970 to 2010, **temperatures in the Sahel have risen 1.5 times faster** than the global average. Persistent drought has contributed to the acceleration of desertification in the northern part of the country while the Saharan and Sahelian climatic zones have expanded 150 km southward. This caused a reduction in agricultural and pastoral areas, leading to the displacement of herders and farmers to areas more favorable to their activities and generally, reinforcing conflicts, inequalities and discrimination among the population. Water scarcity is already classified as high, over the Saharan and (nearly all) the Sahelian zones, with droughts expected to occur on average every five years. These changes are already noticeable in the project area where beneficiary populations indicate that heatwaves and dry spells as well as sandstorms are currently the main climate risks of concern, with significant impacts on their livelihoods. River flood hazard is classified as high over the Sudanian and Sahelian zones. This means that potentially damaging and life-threatening river floods are expected to occur at least once in the next ten years. And this might become worse with climate change. Even for moderate climate change scenarios[22], mean annual temperatures could already increase by 1°C within the next 20 years over the project area, and could climb up by 2-3°C in just ten years for more intense climate change scenarios (i.e., RCP 8.5). Even though annual precipitations are expected to somewhat increase over the project area (0 to 50 mm, by mid-century), this might well be offset by quickly rising temperatures, pushing up evapotranspiration. By 2050, over 85 million inhabitants of Sub-Saharan Africa (or four percent of the region's total population) are expected to be forced to migrate, according to the World Bank's 2018 Groundswell report[23].

20. **Chad – the fourth country in the world most vulnerable to climate change - has great need for investment and innovation to improve readiness and a great urgency for action, according to the Notre Dame Global Adaptation Initiative.** Consultations with beneficiary populations during project preparation led to the identification of vulnerabilities at the nexus of water, land restoration, agriculture, and pastoralism. Populations considered that climate change already has very perceptible to acute impacts with significant implications for their livelihoods. They also identified a range of adaptation options upon which the Project will build to reduce their vulnerability and enhance their resilience, such as improve access to water for both human settlements and agricultural activities; build dams and reservoir for agriculture; diversify food production and expand gardening/horticulture; restore degraded land and promote sustainable land management; initiate a/re-forestation activities and protect wooded areas, etc.

21. **The Project will contribute to Chad's efforts in fighting climate change and building resilience in its priority areas: water, land restoration and agriculture/pastoralism.** It will provide institutional strengthening and capacity building of national agencies as well as rural communities to reinforce knowledge, awareness, and capacity gaps on climate change adaptation. It will also provide increased financing and technical assistance for climate investments in priority areas for Chad, to support the adoption of climate-smart rural production practices and technologies and landscape management investments that aim to achieve multiple benefits (e.g., climate resilience, food security, increased well-being of beneficiaries, including gender and social inclusion). As such, the

[22] i.e. Representative Concentration Pathway (RCP) Scenario of 2.6. An RCP is a greenhouse gas concentration (not emissions) trajectory adopted by the International Panel on Climate Change (IPCC).
[23] https://www.worldbank.org/en/news/infographic/2018/03/19/groundswell---preparing-for-internal-climate-migration

Project will thus deliver on Chad's climate adaptation objectives, as stipulated in the country's Nationally Determined contribution (NDC), as well as related global commitments on land degradation, such as the Great Green Wall for the Sahara and the Sahel Initiative or the African Forest Landscape Restoration Initiative (AFR100 Initiative)[24] under which the country committed to reaching land degradation neutrality by 2030 and restore 1.4 million hectares of degraded lands.

C. Relevance to Higher Level Objectives

22. **ALBIÄ is perfectly in line with Chad's needs and vision[25] layout in its National Development Plan (NDP 2017-2021**). The NDP is based on four pillars which are: (i) strengthening national unity, (ii) strengthening good governance and the rule of law, (iii) developing a diversified and competitive economy and (iv) improving the quality of life of the Chadians. ALBIÄ follows three pillars out of four of Chad NDP 2017-2021. These are pillars (ii), (iii) and (iv).

23. **The project's objectives are fully aligned with World Bank Group Country Partnership Framework for the Republic of Chad, FY16-20 (CPF)[26].** The three identified themes of engagement are: (i) strengthening management of public resources; (ii) improving returns to agriculture and building value chains under climate smart agriculture; and (iii) building human capital and reducing vulnerability. The proposed Project is compliant with the second and third themes of the CPF by supporting investments and development in sustainable and integrated agro sylvopastoral production systems, enhancing resilience livelihoods of local communities, strengthening social accountability mechanisms (in particular women's empowerment in decision making and management of natural resources) and improving access to drinkable water.

24. **The Project directly contributes to the World Bank's corporate goals of alleviating extreme poverty and building shared prosperity in a sustainable fashion:** It focuses on remote rural areas that display high poverty rates and high vulnerability to climate change. It aims to strengthen the resilience of community livelihood while conserving biodiversity and reducing the impacts of climate change. The proposed Project also directly delivers on the targets set out in the World Bank's Africa Climate Business Plan, notably in relation to strengthening resilience in arid landscapes, and on the forthcoming next generation of business plan, notably its two strategic directions around Ecosystem Stability and Water Security as well as Food Security and a Resilient Rural Economy.

25. **The Project is well aligned with the scope and objectives of the Global Environment Facility (GEF)-7 Global Wildlife Program (GWP), which seeks to curb illegal wildlife trade and protect species and habitats through integrated landscape management.** Chad is a participating country under the GWP and will support strengthening of the state-led enforcement efforts in this direction and community engagement in wildlife-based development as essential in tackling the illegal wildlife trade crisis. Sub-component 1.1 of the Project will thus incrementally support the improved management of the Ouadi Rime Ouadi Achim Reserve, a protected area of global significance (being host to iconic wildlife species under threat globally), and support as well the national effort to fight poaching and promote conservation of biodiversity. In addition, sub-components 1.1 and 1.2 will support efforts to empower communities, in and around the Reserve, in becoming stewards of wildlife conservation by participating actively in the sustainable management of natural resources, while Component 2 will promote income-generating activities and integrated agriculture production in order to reduce the pressure

[24] The African Forest Landscape Restoration Initiative (AFR100) is a country-led effort to bring 100 million hectares of deforested and degraded landscapes across Africa into restoration by 2030. https://www.wri.org/our-work/project/AFR100/about-afr100
[25] Chad's Vision 2030
[26] Chad CPF, Report number 95277-TD

on ecosystems, restore habitats, and improve community livelihoods. All in all, the proposed activities contribute to the first three areas of the GEF-7 GWP framework: Area 1 (Conserve Wildlife and Habitats), Area 2 (Promote Wildlife-based Economy), and Area 3 (Combat Wildlife Crime) and will notably generate incremental global benefits[27].

26. **Gender Gap.** Chad ranks 147 out of 153 countries on the Global Gender Gap Index in 2020[28]. Women are often confined to cultivating subsistence crops through traditional farming practices, with little access to extension advisory services and farm inputs. This is often due to (a) cultural/social-norms which make it more difficult for women to access these services (this is partly also because most extension officer field agents are men and women prefer being trained by other women); (b) lack of extension advisory services targeted for women farmers; and (c) a lack of access and information available to women on existing extension services and the benefit of these services. In general, women face significant challenges in a) accessing, using, and supervising farm labour; b) low access to improved agricultural technologies - production and processing, (for instance, less access and knowledge about climate resilient seeds, new agroforestry techniques etc.); c) weak technical and business development skills; and d) low access and ownership of land and other land ownership characteristics (plot size, quality of land etc.). Therefore, women usually have lower returns on their crop yields and earn less income

27. **Action.** The Project is expected to reduce gender gaps through specific activities based on women's needs[29]. The Project will give special attention to women by using gender responsive extension approaches and methodologies, provision of increased access to support activities like rural advisory services, subsidies and inputs, labour-saving technologies allowing free time to women for other activities and productive opportunities for increasing agricultural productivity and income while building resilience to climate change into agricultural production systems. Focus will be put on women's livelihood opportunities, through for example targeting women with agriculture extension services which will increase income and yield. The Project will also include attention to the hiring of female extension workers.

II. PROJECT DESCRIPTION

A. Project Development Objective

PDO Statement

28. The project development objective is to improve the management of natural resources and the livelihood of populations in selected climate vulnerable areas in and around the Ouadi Rime and Ouadi Achim (OROA) reserve in Chad.

[27] Global Wildlife Program Theory of Change is available at: https://www.thegef.org/sites/default/files/web-documents/10200_PFD_Wildlife_PFD.pdf on page 39
[28] *http://www3.weforum.org/docs/WEF_GGGR_2020.pdf*
[29] *Indicator*: Farmers reached with agricultural assets or services (baseline 0'; male 1200, female 1300)

Table 2. PDO Level Indicators

PDO Outcomes	Outcomes indicators
Improve the management of natural resources in the selected climate vulnerable areas in and around OROA	• Share of population of key species (Dama, Oryx, Addax Gazelles, Striped Hyenas) stabilized or increased; • Terrestrial protected area under improved management for conservation and sustainable use [30]
	• Land area under sustainable landscape management practices[31] (Corporate Result Indicator - CRI)[32]
Improve the livelihood of populations in the selected climate vulnerable areas in and around OROA reserve	• People provided with access to improved water sources (CRI - disaggregated by gender); • Farmers adopting improved agricultural technology (CRI – disaggregated by gender).

B. Project Components

29. **Key design elements.** The development constraints that the proposed Project aims to overcome are connected to pervasive poverty of targeted communities resulting in their absolute reliance on the exploitation of natural resources, leading to degradation of landscapes and ecosystems, further exacerbated by the increasingly insufficient capacity of these communities to withstand climate change impacts. Based on the priorities of the Government, the project design will address the following constraints and issues: (a) lack of sound practices in using natural resources sustainably, (b) limited livelihoods[33] options of the most vulnerable communities, (c) vulnerability of communities to climatic shocks, (d) inadequate management of protected areas, and (e) poor quality access to water and sanitation in general but more severe in Eastern rocky areas of Arada (Ouadi Fira) and Kalait (Ennedi West). It will also contribute to G5 Sahel[34] plan to reduce the loss of natural capital, improve resilience and reduce poverty.

30. **The project design is based on a community-led landscape approach**, that is, an integrated approach to sustainably manage land, Ouadis and water resources for multiple purposes and functions. All the project activities, that is, livelihoods, community sustainable natural resources management groups, natural assisted regeneration (NAR), and resilience infrastructures are guided by a participatory process which includes elements of a community-driven development approach. Investments are identified, prioritized, implemented, and monitored by beneficiary communities and the project supports targeted community engagement, social inclusion and citizen engagement activities. Furthermore, activities will be carried out on lands belonging to and owned by

[30] GEF-GWP indicator defining area inside the OROA reserve under conservation practices and management plan
[31] Area outside the OROA reserve under sustainable practices - referring to a combination of at least two technologies and approaches to increase land quality and restore degraded lands for example, agronomic, vegetative, structural, and management measures that, applied as a combination, increase the connectivity between protected areas, forest land, rangeland, and agriculture land. More specifically, for Agricultural land and some forest land the Project will assess every year the production and the mechanism in place to ensure sustainability.
32 Corporate Results Indicators (CRIs) track outputs and outcomes achieved through interventions in operations supported by the World Bank. The 25 CRIs are aggregated at the corporate level for annual reporting of strategically important development results to internal and external stakeholders through notably the World Bank Corporate Scorecard and the IDA Results Measurement System.
33 Including poor/inadequate access to water and sanitation not only to poor household, but to the population of project area in general.
34 The G5 Sahel is an intergovernmental cooperation framework created on 16 February 2014 at the initiative of the Mauritanian Presidency of the African Union. It seeks to fight insecurity and support development with a view to opening up the region. https://www.diplomatie.gouv.fr/en/french-foreign-policy/security-disarmament-and-non-proliferation/crises-and-conflicts/g5-sahel-joint-force-and-the-sahel-alliance/

communities; and which have been agreed to be used for project activities based on a participative community-led consultation process and commitment's formalization.

31. **The activities in all project components are interconnected and mutually complementary and reinforcing**. The Project will, however, use a geographically adapted approach which will adapt the set of activities to be implemented in a target zone according to the communes' geographic location and the activities' potential for sustainability and development benefit maximization in the selected communes. The livelihoods activities are designed to increase the sustainability of rural livelihoods[35]. They are integral to the efforts to facilitate community sustainable natural resources management practices through the creation of community-managed landscapes, alleviate the pressure on Protected Areas (PAs) and Ouadis, and strengthen PAs.

32. **COVID-19 impacts on target landscapes, beneficiaries, and value chains are yet to be determined,** and the team will continue assessing these during project implementation. It is obvious that as macroeconomic conditions worsen, the proposed interventions for food production and alternative livelihoods activities will help create safety nets for the most vulnerable rural communities, improving economic resilience of project beneficiaries. In addition, in case of an emergency the project is built to respond quickly to such a crisis through its Component 4.

33. **Main stakeholders of the project include direct project beneficiaries[36] and** the population of the towns of Salal (Bahr-El-Gazel Nord), Kouba-Oulanga (Borkou), Kalaït (Ennedi West), Arada (Wadi Fira) and Djedaa (Batha), national government structures and technical services, local government structures including already existing local community committees, natural park management structures and the park police, local civil society organizations (especially local Non-Governmental Organizations – NGO - in the abovementioned towns and civil associations for agricultural development and environmental conservation), and women organizations. The stakeholders of this Project have been intensively engaged on the project design and activities during the preparation phase of this Project.

34. **GEF resources, through the GWP, will provide incremental global benefits through improving management of protected areas and their endangered, unique wildlife and biodiversity.** The Project will provide much needed resources to support the improved management of the OROA Reserve as well as activities at national level around combatting wildlife crime. On the Reserve's territory, the Project will help introduce new and innovative approaches, practices, and technologies for enhanced monitoring of wildlife, enforcement of protection, and fire control and prevention. It will also seek to raise the Reserve's profile and maximize economic opportunities (e.g., explore ecotourism opportunities). With respect to combating wildlife crime, the Project will help Chad make its fight against wildlife crime more effective. Under the business as usual scenario, the Government would continue improving Chad's ability to prevent, combat, and investigate wildlife trafficking in silos (i.e., when government departments do not share information, goals, tools, priorities and processes with other departments). The Project will build on the collective efforts of the different government institutions and civil society organizations and supplement resources for a more effective and efficient fight against wildlife crime. In particular, the Project will strengthen the legal and operational base for wildlife protection; encourage regional dialogue and cooperation against illegal ivory trade; as well as raise awareness and educate targeted populations on biodiversity protection and wildlife crime.

[35] This includes income generating activities, water supply and sanitation, sustainable management of water supply systems, integrated agriculture production

[36] The project beneficiaries are explained in more detail in paragraph 62. They are target communities in the project area including vulnerable groups (in particular women and youth) in and around the Ouadi Rime – Ouadi Achim reserve.

Table 3. Project Components Financing

		IDA (US$)	GEF (US$)	Total
Component 1 Sustainable Natural Resources Management and Protected Areas	Sub-component 1.1	6 304 732	1 695 268	8 000 000
	Sub-component 1.2	4 152 366	847 634	5 000 000
	Sub total	**10 457 098**	**2 542 902**	**13 000 000**
Component 2 Promoting Diversified, Resilient, Sustainable Livelihoods	Sub-component 2.1	4000000	0	4 000 000
	Sub-component 2.2	15 178 549	1 271 451	16 450 000
	Sub-component 2.3	16 000 170	0	16 000 170
	Sub total	**35 178 719**	**1 271 451**	**36 450 170**
Component 3 Project Management, Coordination and Monitoring		**4 364 183**	**635 817**	**5 000 000**
Component 4 Contingency Emergency Response Component		**0**	**0**	**0**
Total		**50 000 000**[37]	**4 450 170**[38]	**54 450 170**

Component 1. Sustainable Natural Resources Management and Protected Areas – (GEF + IDA) US$ 13 million

35. This component aims to support the improved management of OROA as well as support national effort to fight against poaching and promote conservation of biodiversity in line with the country's engagement in the GEF-7 Global Wildlife Program. Main activities include developing basic infrastructure and strengthening capacity, management as well as regional dialogue to protect biodiversity and ecosystem services. Under this component, the Project also supports the community participation in sustainable natural resources management including the establishment of local community management committees to create the minimal necessary conditions to sustainably manage natural resources and its fair access. Main activities include citizen engagement, capacity building, participatory process for use of natural resources as well as inclusive local development.

Sub-component 1.1. Improved Management of Protected Areas (PAs) (GEF+ IDA) – US$ 8 million

36. The objective of this sub-component is to support biodiversity conservation and strengthen the capacity of key conservation institutions. It will combine activities centred on the OROA (around supporting the Reserve's management) as well as activities at national level (around combatting wildlife crime). In doing so, the Project will seek synergies with other partners and connect with their respective efforts and initiatives, to capitalize on their experience as well as to maximize cost efficiency (noting especially the vastness of the area under control). The Sahara Conservation Fund (SCF), which will implement this sub-component, is already closely working in partnership with the African Parks Network (APN), especially in the field of training (for eco guards), OROA management plan, and engagement with local communities. APN has successful experience with the Ennedi Natural and Cultural Reserve (World Heritage Site) and Zakouma National Park and can therefore also provide useful and practical advice on matters of law enforcement and community relationships. The Wildlife Conservation Society could also bring its experience on fauna monitoring (both animal census and patrolling), and more generally partner in efforts to combat illegal wildlife trade. The sub-component will support[39]:

[37] The Government benefitted from a Project Preparation Advance of US$ 1,137,547
[38] The Government benefitted from a Project Preparation Grant of US$ 136,936
[39] Key GEF activities are include (i) construction/rehabilitation of priority infrastructure and (ii) zoning, both for delimitating the external boundaries of the

i. The management of the OROA Reserve for enhanced monitoring of wildlife, enforcement of protection, and fire control and prevention as well as for raising the Reserve's profile and maximizing economic opportunities. Activities, which will contribute to the implementation of the Reserve's upcoming management plan (currently under development, with finalization expected in 2022), include:

a) construction/rehabilitation of priority infrastructure such as offices (for Co-management unit, and for North Directorate of Wildlife Conservation and Protected Areas (DCFAP), Southern DCFAP, and Ouadi Djedid sectors), accommodation for Reserve Coordinator, guard patrol outposts (four envisaged), and a garage/vehicle workshop. For buildings, the Project is considering maximizing renewable energy potential (e.g., wind and solar for power and water). The Project will also finance the rehabilitation and maintenance of dirt roads, the creation and maintenance of firebreaks (e.g., purchase of tractor, wagon, harrows), and the creation and maintenance of airstrips (four envisaged).

b) zoning, both for delimitating the external boundaries of the Reserve and for identifying sensitive zones (from a conservation standpoint) inside the Reserve[40]. Redefining/overhauling the Reserve's boundaries is necessary to reflect a number of changes since its creation in 1969, including the presence of new administrative entities and changes to the road network as well as the identification of assets unknown or unrecorded at the time of the reserve's establishment (e.g., temporary wetlands that play a very major role in maintaining the flyways of migratory birds from the Palearctic to the Afrotropical zone). New boundaries will be established through a four-step approach: (i) preparation of operation involving compiling of existing documentation and data on satellite imagery building tools for participatory spatial and development planning, participatory mapping; (ii) participative grassroots and stakeholders (e.g., institutional authorities, traditional or tribal chief, Provincial consultative committees consultation for clarification of relationship between Reserve's holder/manager to address common challenges faced by all actors; (iii) survey and mapping; and (iv) demarcation (this will be done through physical visible signs on the ground). Within the Reserve, the identification and delimitation of sensitive areas will also be undertaken, based on criteria such as unique ecological/ecosystemic functions (e.g., nesting areas for (migratory) birds), representativeness in terms of landscape, or high threats (e.g., fire, livestock, climate change, etc.). This zoning exercise will also provide information that can be useful for developing pasture management plans, as instruments to control grazing pressure and livestock routes and waterholes and to support the natural regeneration of steppes/grasslands in the Reserve and restore their ecosystem services (including carbon sequestration);

c) purchase of equipment to facilitate transport and communication throughout the Reserve's territory, including vehicles (e.g., 6 four-wheel drives as well as motorcycles for guards and community agents or rental of trucks when needs arise), a small plane (4-6 seats), Information and Communication Technologies (ICT) equipment (e.g., Global Positioning System (GPS) and Geographic Information System (GIS) software, solar chargers, binoculars, cameras, cybertracker/Spatial Monitoring and Reporting (SMART) tablets, walkie-talkies for all patrols, Good Very High Frequency radio network for office areas, vehicles, aircraft), disruptive technology for monitoring animal populations (e.g., drones for vultures, support for innovation in gazelle GPS collars, satellite tracking, etc.);

Reserve and for identifying sensitive zones (from a conservation standpoint) inside the Reserve, (iii) purchase of equipment to facilitate transport and communication throughout the Reserve's territory, including, a small plane (4-6 seats), ICT equipment, and disruptive technology for monitoring animal populations, and (iv) capacity building for guards including Female wildlife squads.

[40] Since the Regional Sahel Pastoralism Support Project (PRAPS - P147674) intervenes in the same area of the project, a synergy will be developed in the implementation of some activities in particular in (i) the development of the reserve by focusing on pastoral water points and transhumance corridors, (ii) the development of Firebreaks, and (iii) the establishment of mechanisms of conflicts prevention between farmers; stockbreeders and land tenure.

d) capacity building for guards (and community agents, as relevant, such as possibly female wildlife squads), covering monitoring and anti-poaching techniques, the use of new technologies, bush fire management; and community outreach. Female wildlife squads (*brigades fauniques*) could be established following the successful example of Tanzania, where groups of female community agents have been demonstrated for monitoring and enforcement, benefitting from women better detection skills and ensuring them some source of diversified income;

e) outreach and communication, to engage with local populations, raise awareness of Chadians, and develop tourism opportunities. Activities include: (i) Communication on the Reserve for the Chadian population (e.g., posters, leaflets, TV, drama groups, and radio broadcasts, etc.); (ii) education (formal and informal) and training (e.g., training courses, school visits, student mentoring); (iii) raising the awareness of the local population and authorities on the importance of the Reserve and the benefits from its conservation and building consensus for this to happen; (iv) tourism development for national audiences (e.g., discovery trails, campsites, signage and interpretation, guided tours, etc.).

ii. Provide institutional support for the fight against poaching, from local to regional/international scales. Activities include[41]:

a) Institutional support: (i) support the elaboration of application decrees of existing environmental law[42] and recommend implementing legislation to achieve substantial minimum penalties against illegal hunting and possession of, or trade in, elephant products and other species; (ii) strengthening and operationalization of both the Directorate of Business Litigation of the Ministry of the Environment for better coordination with the courts and the national Agency for Conservation (in line with the Presidential instruction of 2015[43]) ; and (iii) establishing a network of community workers and necessary equipment;

b) Encourage regional dialogue and cooperation against illegal ivory trade: (i) promote regular dialogue with organizations in neighboring countries that combat trafficking and illegal trade in order to harmonize their position with regard to discussions on shops and the sale of wildlife products, as well as policies and legislation on wildlife trade and wildlife crime using ICCWC[44] tools; (ii) work with the Convention on International Trade in Endangered Species of Wildlife Fauna and Flora (CITES) international community on a continued moratorium on ivory trade; (iii) collaborate with NGO initiatives, such as the EAGLE Network (Eco Activists for Governance and Law Enforcement), to combat the illegal ivory trade;[45]

c) Raise awareness and educate targeted populations on biodiversity protection and wildlife crime: (i) provide all members of the national judicial system with information on the protection of the fauna and flora; (ii) bring increase emphasis on the financial (and economic) costs of illegal wildlife trade and resources exploitation with the new environmental crimes module of the Anti-Money Laundering Technical Assistance provided under the National Risk Assessment) engagement of the

[41] Key GEF activities are: (i) TA to support the elaboration of application decrees of existing environmental law and (ii) campaigns on conservation and nature-based tourism. The project will not finance the parliamentary process for validation of these texts.
[42] The environmental law is currently under revision with the support of both EU (under APEF project) and UNDP.
[43] Letter N°031/MAE/SG/2015 paragraph 2.c.
[44] International Consortium on Combating Wildlife Crime
ICCWC toolkit: The Toolkit provides countries with a technical resource to undertake a national assessment of the main issues relating to wildlife and forest offences and to analyze preventive and criminal justice responses at the national level. The Toolkit is designed to assist government officials in forestry and wildlife administration, Customs and other relevant enforcement agencies in conducting a comprehensive analysis of possible means and measures to protect wildlife and forest and monitor products thereof, and thus identify technical assistance needs. https://cites.org/eng/prog/iccwc.php/Tools
[45] The objective to support regional connection and collaboration around wildlife issues and how to track wildlife crimes at a regional level. The support will not be on investigating cases but rather helping Chad being part of the EAGLE network and invest in adequate technologies, such as SMART or ICWICCC.

World Bank; (iii) conduct an outreach program on crimes and laws in key provinces; and (iv) conduct an environmental education program[46] in schools for the protection and conservation of wildlife and flora in general (covering a range of threats, including poaching but also climate change);

d) Review human-elephant-conflicts efforts, actions, and effectiveness in Chad, and investigate more sustainable approaches such as environmental-risk insurance schemes, locally based community reserves compensation schemes, etc.

Sub-component 1.2. Community Sustainable Natural Resources Management (GEF+IDA) – US$ 5 million

37. The activities under this component are in particularly designed for ensuring targeted social inclusion with a special focus on vulnerable groups (women, youth and also pastoralists) and systematically excluded people and, for improving community participation but also to enhance the capacity of existing local governance structures and local community committees. This will be done by (a) ensuring that processes around natural resource management are community-led/driven, participatory and inclusive; and (b) that community participatory natural resources use planning is based on the community dialogue as an efficient tool to prevent conflict and establish an enabling environment for both social and economic development. These activities also aim to build local and multi-dimensional partnership for an inclusive governance consolidating capacity and beneficiaries' adaptation to the new context. In addition, the mechanisms outlined in the following paragraphs will help to strengthen community institutions by ensuring that all project investments are in line with Local Development Plans (LDPs) which wide-participatory preparation and implementation is a sound tool for economic and territorial planning. Given the pastoralism in the region, nomadic pastoralists will also be represented in local community management committees and will participate in the process.

38. The Project will support the process of revising and/or elaborating LDPs by providing technical assistance, where needed, of already existing LDPs in the communes of the project intervention area. With local community management committees deeply representative (and especially with strong representation of women) and technically supported and strengthened, the selection and identification of project activities and project investments to be integrated into the annual work and budget plans of the communities will be more effective.[47] In addition, these committees are also expected to support the supervision of the project through participatory monitoring and evaluation (M&E) in the project zone.

39. This sub-component will support the establishment of the enabling conditions for the sustainable management of natural resources by local communities **in the hotspots outside the reserve**. It is structured into two categories of interventions in the project target areas:

i. **Participative and sustainable management of natural resources**: The overarching objective of this activity is to develop and test a streamlined, simplified, low-cost and participatory process for use of natural resources as well as inclusive local development with a deep involvement of all stakeholders with a particular attention involving miscellaneous local authorities. This will be done through financial and technical support for the design and implementation of a mechanism that will (a) establish and/or strengthen local community management committees, including to ensure representation of women and vulnerable groups, such as youth, and pastoralists (b) update and/or revise LDPs with participatory

[46] Relevant national entities (such as school or training institutes will be identified during implementation.
[47] While the project will only be able to support some of the investments of the LDPs, supporting their elaboration or revisions of them, where and as needed will support the communities' in assessing needs, future scenario planning and mobilizing additional resources that would be complementary with the investments of ALBIÄ .

process, community-driven, including all stakeholders with a special focus on women's empowerment ; (c) appoint and train local level focal points and mediators for managing and resolving disputes on land and natural resources[48], monitoring and preventing conflict and addressing peaceful response; (d) set-up and operate a comprehensive mechanism to mitigate local tensions with a focus on tensions arising from environmental degradation and climate change impact (documentation, mediation and solution for the future) and using gender-sensitive communications methods that are tailored to the local socio-cultural and political economy context. This mechanism will also be coordinated with the Grievance Redress Mechanism (GRM) under the Project.

ii. **Citizen engagement and capacity building activities:** This set of activities has as main objectives to (i) strengthen trust and dialogue between the state and citizens and among and between communities, and (ii) to promote socially inclusive and sustainable participatory adaptation practices through a series of capacity building activities as participatory enumeration and mapping, land use, spatial and development planning, inclusive process for involvement of women and vulnerable groups. Local authorities (traditional and administrative) and civil society are part of the solution and it is crucial to close the gap through open debate with communities. Concrete activities under this category will include: (a) training and awareness raising on social inclusion, women's empowerment, land access and GBV; (b) knowledge exchange activities between the hotspots (such as study tours, workshops, joint community meetings, etc.) as well as an annual competition on project performance, citizen engagement and community participation[49]; (c) capacity building and sensibilization for behavioral change and enhanced skills[50] to communities on the management of natural resources; this can include courses in the areas of agricultural production, animal husbandry, development, management of Ouadis, climate smart solutions in rural areas (e.g., climate-smart agriculture, renewable energy sources, etc.), literacy courses for groups with low level of education; and (d) environmental education on biodiversity, school and integrated planting spaces.

40. Activities under the category of interventions Participative and sustainable management of natural resources will be implemented with the help of an internationally contracted NGO and will anchor in the newly established or strengthened local community management committees representative of the social and cultural community diversity to strengthen resilience and support endogenous solutions as well as social inclusion. The NGO will be responsible for (a) local capacity building and development to provide pro-poor, accountable and equitable output, technical assistance and guidance with regards to the operation of the local community management committees, (b) the update or revisions of the LDPs following a participatory and communal approach with a focus on achieving reachable, consensual and endogenous development solutions; and (c) support the implementation of the mitigation's mechanism of local conflicts and tensions.

41. In addition, it will also support the PIU-led implementation of activities under the category Citizen engagement and capacity building activities through technical assistance. It is also expected that while the NGO will be financed by the Project, it will serve as another useful source of monitoring mechanism to complement the

[48] The project will rely on PRAPS experiences in land management and transhumance corridors and will adopt the same participatory and inclusive approach used by PRAPS e.g. the establishment of local dialogue committees on land management including aspects related to land tenure such as the consideration of women and youth and transhumance corridors throughout the project intervention area.

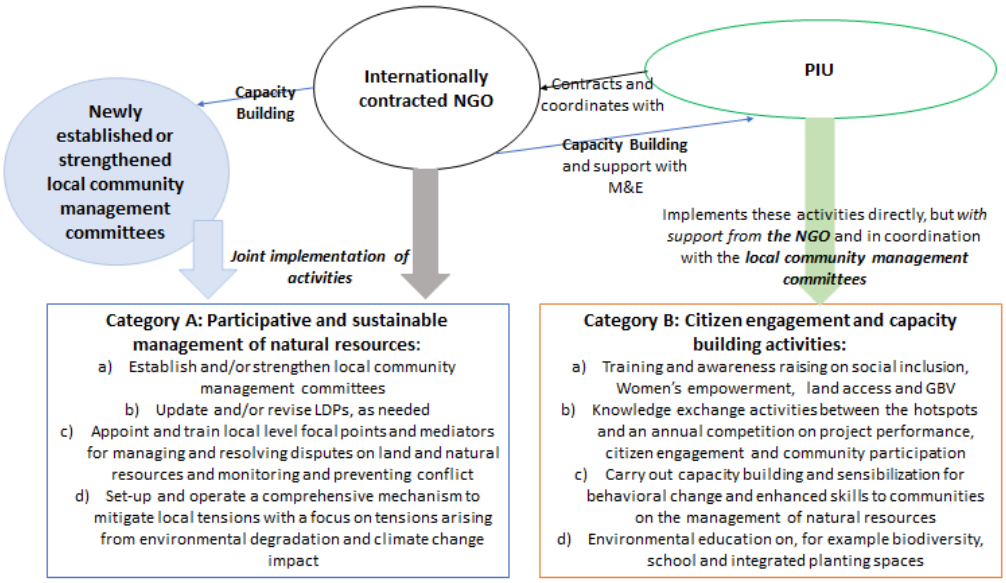
[49] For this annual performance competition, a list of criteria will be developed along the themes project performance, citizen engagement and community engagement (here in particular with regards to the social inclusion of vulnerable groups, including women and youth in decision-making processes) and others. The exact criteria, scoring methodology as well as process will be outlined in more detail in the PIM. Based on the assessment, the hotspots will receive a score as well as a detailed report that explains the scores by criteria as well as possible opportunities for improvement. The report will be made publicly available.

[50] Trainings and awareness in environment, conservation, nature-based tourism, gender, citizen engagement, CSA, WSS and WRM.

project's own M&E system and can collect useful lessons learned and good practices to further improve its implementation.

42. The local community management committees, on the other hand, will be responsible for the identification/creation of community focal points and action groups, training and follow-up with community level focal points, mediators and action groups on conflict identification, monitoring, response and prevention. Possible local level conflicts that can be addressed will include conflicts around natural resources management, land and disaster risk management risks as a result of climate change impacts. The terms of reference of these committees with a detailed list of tasks and responsibilities, adapted to each of the hotspots will be included in the Project Implementation Manual (PIM) for this Project. Information on conflicts that will be monitored, documented and followed-up on will be systematically recorded by the PIU.

Figure 1. Implementation and Coordination Arrangements of Sub-component 1.2 Activities



Component 2. Promoting Diversified, Resilient, Sustainable Livelihoods (GEF + IDA) – US$ 36.45 million

43. Under this component, the Project supports the creation of necessary conditions for communities in the hotspots area facing climatic impact to strengthen their resilience through (i) income generating activities and integrated agriculture production as well as job creation, and (ii) water supply and sanitation to communities, health centers and schools. It is expected that the Project will provide water points/connections to health centers and by the way improve the health system by providing hygiene, behavior change and sanitation facilities[51]. Given the fragile context and environment, priority is placed on the sustainability of these investments and in limiting the impact on the existing activities and uses (including, the reserve).

[51] In case of health crisis (COVID 19, Cholera, Water Born Diseases, etc.)

Sub-component 2.1 Water resources planning and monitoring (IDA) – US$ 4 million

44. The renewable water resources in the area are unknown. Therefore, this component will finance a detailed study of water resources in the project area in and around the reserve, to map the available resources and evaluate the potential impact that additional uses may have on the reserve and other existing uses (like the seasonal wetlands (Ouadis), key for pastoralists, and existing socio-economic activities). The study will recommend where the integrated agricultural sites may be located (outside the reserve), how much water could be available for the development of agriculture (Sub-component 2.2); and how much water could be used sustainably for water supply in the selected communities outside the reserve (Sub-component 2.3). The study will also identify whether certain structures may be a useful means to support existing and/or new uses, like small irrigation in the hotspots area. The menu of water infrastructure investments that may be considered under this sub-component includes both rehabilitation/construction of existing structures and small works, such as small sand and subsurface dams in dry river beds (Ouadis) and rocky areas[52], works for protecting lakes from silting, and area infiltration interventions such as semicircular bunds or soil bunds[53].

45. The recommendations regarding different water uses will focus on the necessary preservation of the existing ecosystems downstream and at the locations of activities. Furthermore the activities in sub-components 2.2 and 2.3 contribute to the development of trees species through reforestation and household trees plantation. The mobilization of water resources and its close monitoring contribute in this current subcomponent to regenerate the ecosytems.

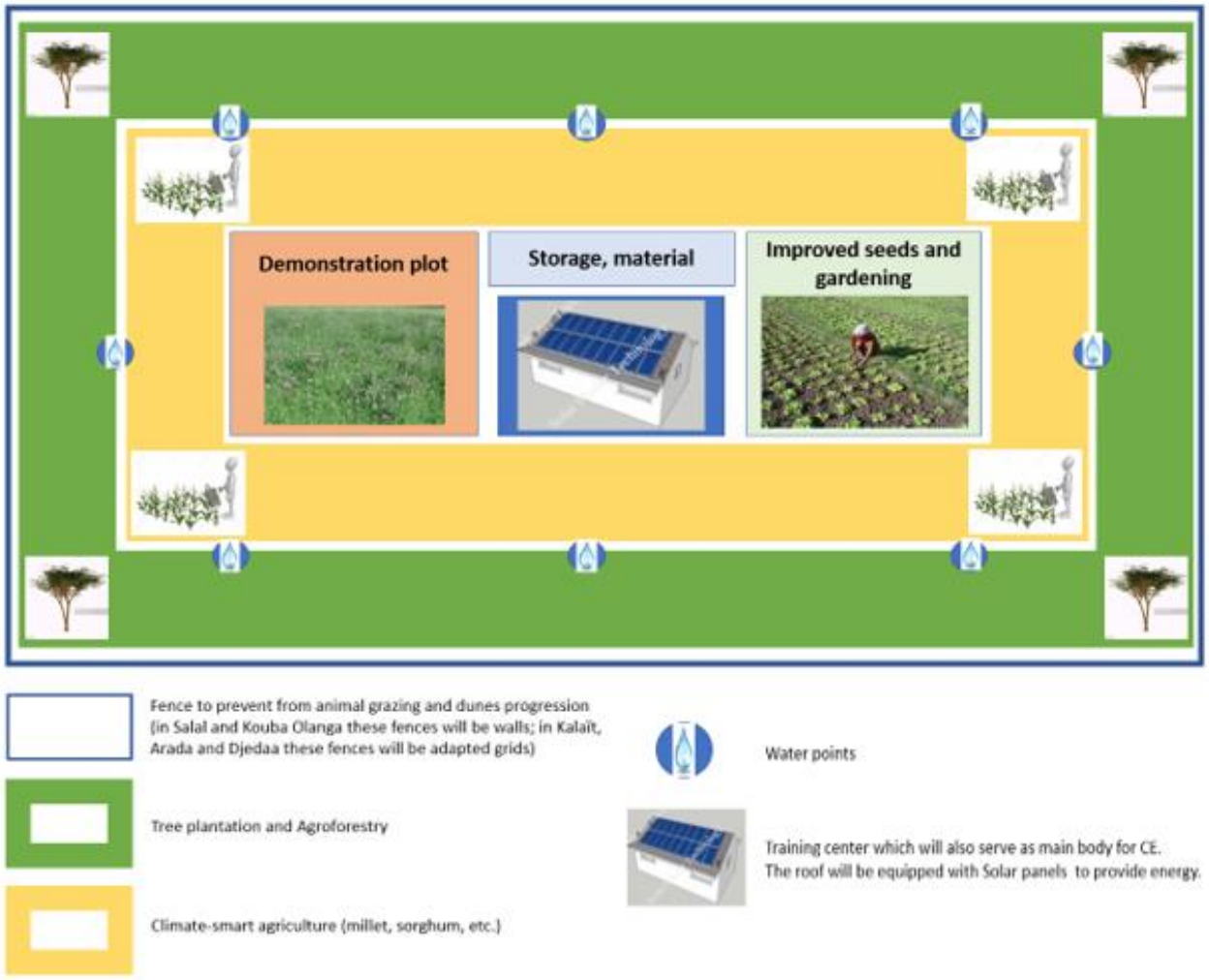
46. This sub-component will also support the national water resources monitoring system, by financing an assessment of the existing water points and piezometric points; based on the results of (i), reactivating the existing piezometric network in the area and installing 5 pluviometres; and (ii) training the management of the reserve to take the measurements regularly and transmit them.

Sub-component 2.2 Income Opportunities and Resilient Livelihoods (GEF+IDA) – US$ 16.45 million

This sub-component will support the setting-up of an integrated agricultural production site - a fenced area including agroforestry, market gardening, storage warehouse, training center (provision of advisory services), and water points - in each selected hotspot outside the reserve[54]. In these sites, producers will develop activities to improve agricultural production (including fallow production) and marketing through the adoption of climate smart agriculture technologies (see Figure 2)[55]. This approach is based on the successful model developed in Arada (described in Box 2).

[52] These technologies protect water from high evapotranspiration rates by holding the water in shallow sand aquifers that can be used to supply limited amounts of water for domestic, livestock, and agricultural uses.
[53] Pastoral boreholes around integrated fenced approach are already being rehabilitated under PRAPS project.
[54] Please refer to box 1. The fenced area will be established on land chosen by the community (under sub-component 1.2) in a transparent, participatory and inclusive manner – under sub-component 1.2. and near a pastoral hole.
[55] Key GEF activities include: (i) stabilization of dunes, (ii) assisted natural regeneration activities at the edges of the reserve (in the 5 identified hotspots) and (iii) apiculture.

Figure 2. Integrated Fenced Approach - ALBIÄ



47. In-site activities will include support for productive investment through:

i. Agroforestry, climate-smart agriculture production (food crops, gardening and fallow production, fuel wood production - see Table 4) as well as tree plantation through the use of improved and high-yielding varieties and breeds for key products targeted, adapted to local conditions and resistant to climate variability/change and other stresses;
ii. Restoration of vegetation soils resilient to climate change such as sustainable soil and water management practices, including increasing soil organic matter, preventing soil erosion, using agricultural rotations and associations, integrated pest and weed management;
iii. Improved fallow production to contribute and reduce grazing pressure in the reserve;
iv. Apiculture for and small-scale fish farming where relevant to diversify income.

Table 4. Type of Crops/Arboreal Species by Hotspots

Activities	Type of crops/arboreal species by hotspots				
	Arada	Kalait	Djadda	Salal	Kouba
Food crop production	Sorghum, millet, cowpea, peanut, sesame	Sorghum, millet, cowpea, peanut, sesame	Sorghum, millet, cowpea, peanut, sesame	N/A	N/A
Gardening production	Tomato, okra, green bean, radish, beetroot, carrot, onion	Tomato, okra, green bean, radish, beetroot, carrot	Tomato, okra, green bean, radish, beetroot, carrot, onion	Tomato, okra, radish, beetroot, carrot, watermelon	Tomato, okra, radish, beetroot, carrot, watermelon
Fallow Production	Brachiaria, luzerne	Brachiaria, luzerne	Brachiaria, luzerne	Brachiaria, luzerne	Brachiaria, luzerne
Arboriculture & Agroforestry	Acacia nilotica, acacia senegal, bauhinia rufescensis, prospis juliflora, ziziphus Mauritania, Cassia siamea, faidherbia albida, moringa oleifera, cajanus cajan	Acacia nilotica, acacia senegal, bauhinia rufescensis, prospis juliflora, ziziphus Mauritania, Cassia siamea, faidherbia albida, moringa oleifera, cajanus cajan	Acacia nilotica, acacia senegal, bauhinia rufescensis, prospis juliflora, ziziphus Mauritania, Cassia siamea, faidherbia albida, moringa oleifera, cajanus cajan	Acacia nilotica, acacia senegal, bauhinia rufescensis, prospis juliflora, ziziphus Mauritania, Cassia siamea, faidherbia albida, moringa oleifera, cajanus cajan	Acacia nilotica, acacia senegal, bauhinia rufescensis, prospis juliflora, ziziphus Mauritania, Cassia siamea, faidherbia albida, moringa oleifera, cajanus cajan

49. The above activities will be implemented through:

i. The introduction, dissemination and development of new climate-smart agricultural production techniques including the production of improved seeds and seedlings for targeted crops and facilitation of access to inputs and mechanization;
ii. The creation of input distribution networks.
iii. Investments in key water infrastructure for small-scale irrigation based on the recommendations of the water resources management study that will be conducted under Sub-component 2.1
iv. Quick-win approach. From the first year, the Project will provide the necessary technical assistance through the specialized NGO to make the integrated areas operational by focusing on the most demanded market gardening crops (to be determined by the farmers during implementation) both by the communities within the hotspots and local markets. The initial investment to purchase agricultural inputs will be co-insured by the Project before the producers take over the second year through the Integrated Space Management Committee[56].

[56] The Management Committee is the Community structure in charge of the governance of the integrated space. Specifically, it is in charge of organizing the producers, managing the resources including land, water, fees and maintenance of the site.

Box 2. Arada Productive Model

With a fenced area of 95 ha divided among 49 farmers' organizations (of which 15 are composed exclusively of women) comprising of about 225 individuals in total, the garden production site of Arada is a model in Sahelian Chad and replicable in the context of an integrated approach in the project's hotspots.

This fenced area is dominated by market gardening and flood-recession crops, with a few rare groups practising irrigated farming. Activities generally begin in September and October after the water has receded. Agricultural practicies are dominated by flood recession crops such as beans. Other crops such as tomato, okra, lettuce, sorrel, onion, beet, carrot... are cultivated and watered manually. One of the lessons learned in Arada is that it could be more interesting for producers to diversify their productrion by introducing the cultivation of onion, potato, garlic, which are high value added crops.

Farmers organizations function with resources generally derived from membership rates, monthly dues and sales of crop products and/or income generating activities (IGAs) or petty trade, which is one of the dominant activities. Revenues vary according to each group's production and yield per season.

Legal texts, availability of arable and fertile land, human resources, membership and subscription rates are among the strengths of these groups. The Project Ouadi Rime Ouadi Achim (POROA)[57] survey shows that these groups work for the most part in the sectors of rainfed crops, market gardening, livestock (small ruminant), handicrafts, businesses, etc. Some have written and managed micro-projects, have received funding, hold regular meetings, have account books, cash registers, reports and minutes, and have financial statements at their disposal. These groups have a rather interesting turnover and well-established visions.

Average incomes are difficult to quantify but vary from one campaign to another. An overall average ranging from 50,000 to 900,000 Central African CFA Franc (XAF) is estimated. Products are mainly sold on the Arada market. Some products are transported and sold on the markets of Kalaït, Biltine and even as far as Faya (in years of good harvest).

In a nutshell, the success of the Arada site is due to the following elements: (i) efficient management of resources by the unions (in terms land and water management); (ii) good capitalization of agricultural practices that are resilient to climate change (support-advisory/extension of good agricultural practices) which is done collectively through the support of the state or partners; and (iii) very good linkage with the local market for the sale of production which is done collectively through the network set up by the producers. This organization of producers around the protected site of Arada has ensured the sustainability and improvement of producers' incomes and means of production[58].

50. Individual innovators (champions) will be identified to help manage the demonstration plots inside each site where all beneficiaries will learn how to apply theoretical knowledge learned during training sessions (supported under Sub-component 1.2)[59]. These interventions will specifically target at least 50 percent women-headed households, as well as households classified as very or extremely vulnerable (based on a rapid poverty level diagnostic).

[57] POROA is the European Union funded project which supports OROA sustainable management of an amount of €3 million. It started in September 2018 and will end in September 2022.
[58] Enquete Diagonstic des Groupement Maraichers a Arada, POROA, 2020.
[59] The project, in collaboration with the Climate Resilient Agricultural and Productivity Enhancement Project (ProPAD), will set up an electronic extension program (E-extension) to meet farmers' needs (advisory services, access to climatological services), to fill the lack of state agricultural advisers for producers and to introduce a new innovative technological approach based on ICTs to improve production and productivity in the project intervention area. E-extension aims to facilitate producers' access to the information and technologies needed to improve their performance in terms of production and productivity using ICT. In this framework, producer groups will receive tablets containing applications in the form of videos translated into local languages for the dissemination of information. The services offered by the system are dissemination of resilient and sustainable technical messages to producers, information and awareness raising among farmers, including on climate change and agricultural calendars. They also provide for the management of alerts, the collection of information from farms and the production of statistical data on agricultural production.

51. Since the site is of a community nature and public utility, producers will contribute in the form of a fee (both in kind and in labor) for the services they receive. This will improve ownership of supported activities and therefore their sustainability. A management committee will be set up to manage the site with the support of the Project. This approach (which is expected to be sustainable beyond project duration[60]) will have clear benefits for increasing value and introducing sustainable management of natural resources within the ecosystem, reducing degradation, strengthening resilience, and achieving adaptation co-benefits. The sustainability of the approach (both financial and managerial) will be monitored on a yearly basis.

52. In addition to the integrated approach, the sub-component will also support the development of community activities (outside fenced areas) in the field of (i) stabilization of dunes, (ii) assisted natural regeneration activities[61].

53. The Project will use the same implementation modalities as those adopted by the Climate Resilient Agricultural and Productivity Enhancement Project (ProPAD) Project – P162956 and the Support for the Resilience of the Agricultural System in Chad (PARSAT) Project (funded by the International Fund for Agricultural Development - IFAD) with the involvement of strategic partners and specialized service providers for the implementation of project activities. In addition, the role of the private sector is vital to ensure the sustainability of the investments that will be made under the Project, particularly in agroforestry activities. To this end, the Project will facilitate the establishment of contacts between agricultural producers (vegetables, cereals and Arabic gum) in the project area (5 hotspots) and wholesalers in local and regional markets in order to develop the spirit of trade in agricultural products, which until now has been timid and unstructured. Concretely a counter will be set up in the 5 hotspots integrated by the site management committee to organize the collection and marketing of agricultural products. Eligibility to Carbon funds will also be further investigated during project implementation (under Sub-component 1.2).

Sub-component 2.3. Rural Water Supply, Sanitation, and Hygiene (IDA) – US$ 16 million

54. This sub-component will help increase access to safe and reliable WSS services and promote hygienic practices in selected semi-urban and rural zones that require expansion and improvement of services in communities to achieve universal access. The intervention will focus on the five hotspots and their surrounding villages outside the reserve. This sub-component is structured into two main interventions: (i) increasing semi-urban and rural access to WSS services; and (ii) enhancing service delivery management capacity. Consequently, connecting health centers, building latrines and strengthening hygiene practices will contribute to reinforce the health system through prevention and awareness tools on water born disease, Cholera, COVID-19, etc.

55. It will finance inter-alia drinking water supply and sanitation infrastructure; awareness and behavior change communication campaign. These activities include measures to protect water sources (concrete slab, fence, drainage system, improve water quality (systematic chlorination), and increase sustainable water use and systems management, thereby increasing population resilience to climate exacerbated droughts and floods in the

[60] The sustainability of the integrated fenced approach will be ensured by the fact that: (i) the Project will contribute to enhance sustainable productivity through farmers' access to improved agricultural technologies and best practices that are useful in enhancing resilience of local production systems as well as rural livelihoods; (ii) the Project will also support access to market activities by helping beneficiaries organize themselves sell together their production and/or facilitating linkages between beneficiary producers and collectors. (iii) The project will provide training and capacity-building tailored to their specific needs including management of farming revenues. (iv) These activities will increase beneficiary's managerial and entrepreneurship capabilities to reinvest part of generated revenues into the improved technology packages to sustain the production system and its expected profitability. (v) Finally, the Project will encourage investment in climate resilience through promotion of climate-smart agricultural technologies and practices such as sustainable land/landscape management.

[61] These activities will be done in synergy with sub-component 2.1

targeted areas by providing basic services all the time. In each hotspot, the Project will finance inter alia the following set of activities:

(i) Construction of new deep wells to supply clean drinking water equipped with immerged electric pumps;
(ii) Rehabilitation works at specific water points;
(iii) Installation of solar system to provide enough energy for the water supply system;
(iv) Construction of overhead water tank to store water and supply population through the network;
(v) Construction of water supply network and water distribution points (standpipes, water troughs, connections in institutions);
(vi) Construction of latrines in schools and health centers[62];
(vii) Behavior change communication and community led total sanitation (CLTS) activities;
(viii) Technical studies and civil work supervision activities for all the five hotspots together; and
(ix) Due diligence activities to contracting water supply assets management through public private partnership arrangements for the all five hotspots together.
(x) Technical advisory services on the maintenance of water supply infrastructure.

56. Due diligence activities will be launched in a timely manner to pair water systems construction with the appointment of private operators in charge of managing the systems. It is important that the private operator participate in the various testing and real scale operationalization of the systems so that the operator understands the systems' critical points. It is expected to recruit local operators based on the promising capacitation supported by the European Union (EU) on 12 rural systems. The Project will support the due diligence process and the recruitment of firms to conduct technical studies and contractors to build and test the real scale functioning of the new system. It is expected that by the end of the Project, the bidding process for private sector management of the systems is finalized and the private sector is in place.

57. For water supply infrastructure, the project will build on the experience of water projects financed by the EU, the French Development Agency (AFD), the German Corporation for International Cooperation (GIZ) and the Great Green Wall to ensure the sustainability of the service provision. On the other hand, it will promote public private partneship suitable for the Chadian context to ensure sustainable management of multivillage water supply systems around the hotspots[63] locations of Salal, Kouba Olanga, Kalait, Arada and Djedaa. The use of solar energy is the recommended option by project preparation studies, however, it can be coupled with other acceptable source of energy as standby option (mainly grid where it exists) to ensure the continuty of service. The solar energy option will help reduce the maintenance cost and then increase the sustainability of rural water service.

58. Regarding hygiene and sanitation, the project will mainly focus on awareness and behavior change communication. However, it will also help to build sanitation infrastructure in public services (health centers and schools). CLTS will be used where applicable to raise awareness and trigger behavior change for hygiene and sanitation. Mass communication through relevant channels will be used to consolidate the awareness and the behavior change. Better hygiene and sanitaiton might contribute, in the longer run, to make populations less exposed and more able to adapt to climate-change induced water-borne diseases.

[62] GBV risks and mitigations measures will be taken into consideration during the preparation and implementation of this activity. Men/boy and women/girl latrines, for example will be placed away from each other in well-lit areas and it will be ensured that they are locked from the inside. In the context of schools, the latrines will be carefully placed away from teachers' rooms.
[63] Outside OROA reserve

Component 3: Project Management, Coordination, and Monitoring (GEF + IDA) – US$ 5 million

59. The component would finance the operational costs of the PIU. This will carry out all fiduciary aspects of project implementation including financial management, procurement, environmental and social risks management, M&E, sector coordination of investment targeting and policy harmonization, and donor coordination structures. In addition, this component will support knowledge sharing through capacity-building workshops for key stakeholders to improve coordination and cooperation as well as particiation in GWP events. GEF funding would allow the Project to further strengthen both its M&E and knowledge management through: (i) provision of good practices to the Government on GWP-related topics such as biodiversity and ecotourism, specifically to support the regional multi-country dialogue on IWT; (ii) extraction of lessons learned and systematization of knowledge on the Project; and (iii) capture and dissemination of information at the community level to produce user-friendly tools and guidelines in local language.

60. Furthermore, this component will also finance the setting up and the operation of a GRM (the GRM is explained in more detail in the environmental and social section of the appraisal summary). As explained under the Sub-component 1.2, this project-related GRM will be coordinated as well with the newly set-up/strengthened community management committees under the project. To ensure targeted social inclusion of project activities, in particular with regards to women, youth and other vulnerable groups (such as for example pastoralists), a social inclusion strategy will form part of the PIM of the project and an action plan on social inclusion will be elaborated before the implementation of project activities (and revisit every year to include lessons learned and make adjustments).

Component 4: Contingency Emergency Response Component (CERC) - US$0 million

61. The Project will operate in a highly complex and volatile environment. This zero-funded component will allow the governments to quickly mobilize funds in the event of an emergency that will require immediate recovery and reconstruction response. In the event of a crisis or disaster caused by a natural hazard, this component enables the Governments to quickly reallocate IDA project funds (no GEF resources will be reallocated) to disaster response and recovery purposes under streamlined procedures. It will therefore support Chad's emergency preparedness and response capacity to the impact of natural hazards, including financing of post-disaster critical emergency goods or emergency recovery and associated services, as well as targeted provision of post-disaster support to affected households and individuals. Following an adverse natural event, the Government's declaration of disaster in accordance with national law, and subject to the Bank's activation policy, the contingent component would be triggered.

C. Project Beneficiaries

62. **Main project beneficiaries are communities – including vulnerable groups (women, youth and pastoralists) in and around the OROA reserve.** Women and youth are currently the most vulnerable to climate change. More precisely, key beneficiaries are communities living in the 5 targeted hotspots that are adjacent to the reserve. It is estimated that at least 70,000 people will directly benefit from the project's investments and of which at least 50 percent are women. Categories of beneficiaries are as follows:

i. Beneficiaries with sustainable climate-smart agriculture services
ii. Beneficiaries with improved access to water sources
iii. Beneficiaries that feel that project investments have positively contributed to the community's social well-being and resilience to climate change

63. **Transhumant communities are also targeted beneficiaries.** The global important flora (including pasture) and fauna of the OROA Reserve will benefit from improved management (pasture management, bushfire management, transhumance corridors, etc.) and increased protection.

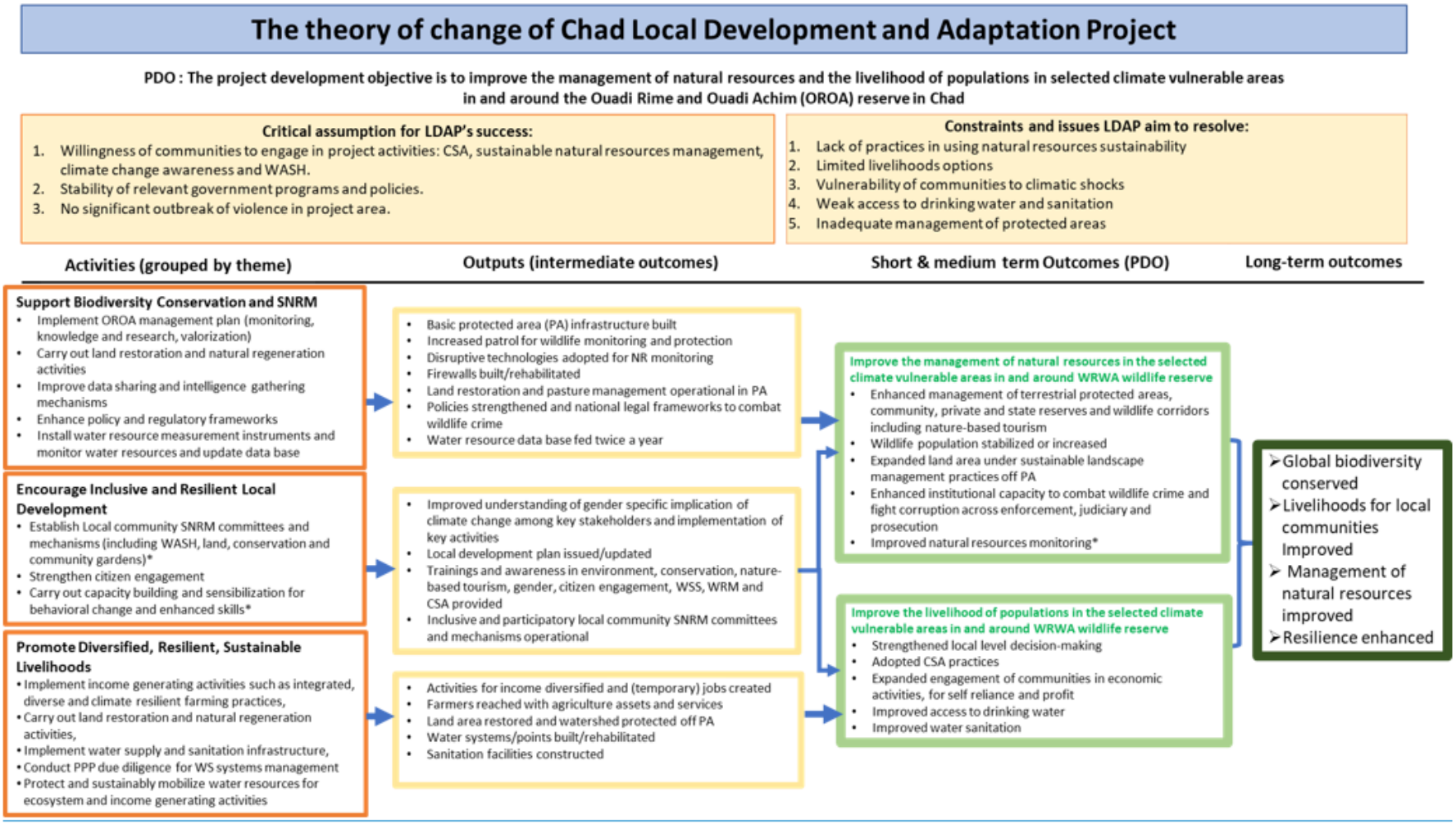
64. At national level, MEEP will directly benefit from the project including through the support under sub-components 1.1 and 2.1. Other conservation agencies, institutions at national, provincial and local levels will indirectly benefit from the project through coordination and capacity-building activities.

D. Results Chain

65. **ALBIÄ's Results Chain is depicted in the Theory of Change figure below.** It is centered on the fundamental role of natural resources in the livelihood of the populations of the Sahel belt. Without project interventions, pressure on land and water will continue, accelerating degradation (e.g., wood harvesting, overgrazing), increasing threats on already endangered wildlife and biodiversity, letting desertification progress quickly. Climate change is accelerating this degradation process, notably by increasing water stress, further pushing, or maintaining, the populations of Sahel into poverty and fueling conflicts between different users. The Project seeks to support the restoration and sustainable management of natural resources and to enhance the natural capital basis for the livelihood of local populations[64]. The Ouadi Rime Ouadi Achim Reserve is the geographic anchor of the project area and it will receive targeted support to improve its management via new and innovative approaches, practices, and technologies for enhanced monitoring of wildlife, enforcement of protection, and fire control and prevention. To improve and diversify the livelihood of local populations in selected hotspots and reduce pressure on the Reserve's resources, the Project will also invest in income-generating activities (around climate-smart agriculture) and in water supply and sanitation infrastructure. To ensure the feasibility and sustainability of the interventions, the Project will also invest in improving the knowledge and management of the water resources, fundamental for sustaining livelihood activities. It is expected that these interventions will also make the area and the populations more resilient to mounting climate variability and change. The Project is thus well aligned with the GWP's Theory of Change[65], as its activities match three of the four pillars of GWP's Theory of Change – Conserve Wildlife and Habitats (Pillar 1), Promote Wildlife-based Economy (Pillar 2), and Combat Wildlife Crime (Pillar 3) – and are expected to contribute among others to the effective management of the Reserve and the stabilization or increase of wildlife populations, increase incentives to protect wildlife and capacity to co-exist with wildlife; as well as strengthened institutional capacity to combat IWT.

[64] These hotpsots are: Salal, Kouba Olanga, Kalait, Arada and Djedaa
[65] Global Wildlife Program Theory of Change is available at: https://www.thegef.org/sites/default/files/web-documents/10200_PFD_Wildlife_PFD.pdf, page 39

Figure 3. Project Theory of Change



E. Rationale for World Bank Involvement and Role of Partners

66. The World Bank committed to support Chad National Development Plan. The CPF intends to alleviate population's vulnerability through its Engagement themes 2 and 3 knowing that communities in rural Chad rely on the exploitation of natural resources. The exploitation of these natural resources contributed to the degradation of landscape and ecosystems exacerbated by increasingly insufficient capacity of these communities to resist climate change impacts. Alleviating communities's vulnerability means restoring their livelihoods and natural resources by: (i) a sound intervention practices in using natural resources sustainably, (ii) diversifying and improving the livelihoods options of the most vulnerable communities, (iii) developing communities resilience to climate shocks, (iv) improving appriopriate management of protected areas, (v) allowing access to basic services (drinking water supply and sanitation).

67. The World Bank has conducted analytical work in the water sector (Water Sector Diagnostic in 2019), in Land, Agriculture and Food, Poverty and Equity joint sectors (Land Property Rights, Investments and Agriculture Productivity in Chad in 2020). Furthermore, the World Bank has conducted various studies on community engagement, participatory development processes and citizen engagement. In the context of climate change, notable studies are for example: the GFDRR's 2015-2017 Strategy for Inclusive Community Resilience and a recent Study Community-led Partnerships for Resilience and a Study on Climate and Disaster Resilience – The Role of Community Driven Development (2014), and a Report Social Dimensions of Climate Change: Equity and Vulnerability in a Warming World (2009). These analytical works have informed the proposed project preparation.

68. Many other donors such as European Union, French Development Agency, African Development Bank, GIZ, Suisse Development Cooperation, United Nations agencies, etc. are also supporting the Chad government to (i) develop population's resilience to the climate variability, (ii) protect wildlife and their environment, and (iii) strengthen local governance. The project creates synergies with existing interventions and projects. Given that the project area is immense and sparsely populated, collaboration with other stakeholders is key for the successful implementation of project activities. The project will contract experienced service providers (see section on institutionnal arrangements) which have ongoing and relevant programs in the project area. Table 5 summarizes key partners that the Project will work with during the implementation.

Table 5. Main Key Partners Working in the Project Area

Partner / Donor	Key area of collaboration
Sahara conservation Fund	Conservation and protection of reserve; law enforcement; conservation education; bushfire management
African Parks Network	Conservation; protection of protected areas; ecotourism
Noe Conservation	Conservation and protection of protected areas
European Union	Conservation; PA management; law enforcement as well as institutional reforms; conservation education; water supply and sanitation; pasture management; rural development
SOS SAHEL France	Community-based natural resources management; CSA; strengthen local governance
Africna Development Bank	WRM, strengthen local governance
IFAD	CSA; matching grants; alphabetization; local development
GIZ/Suisse Development Cooperation	Water Resources Management, Water Supply and Sanitation
UNDP	Strengthen local governance

69. **GEF-7 Incremental reasoning**. The Project is a blended IDA GEF operation (IDA US$ 50 million and GEF US 4.45 million). World Bank IDA-18 resources have been mobilized for a multisectoral Project focusing on sustainable natural resources management and improvement of local livelihood (including access to water, citizen engagement as well as sustainable generating income activities). The Project will in particular provide much needed resources to support the improved management of the OROA Reserve as well as activities at the national level around combatting wildlife crime. On the Reserve's territory, the Project will help introduce new and innovative approaches, practices, and technologies for enhanced monitoring of wildlife, enforcement of protection, and fire control and prevention. It will also seek to raise the Reserve's profile and maximize economic opportunities (e.g., explore ecotourism opportunities). With respect to combating wildlife crime, the Project will in particular help Chad make its fight against wildlife crime more effective. Under the business as usual scenario, the Government would continue improving Chad's ability to prevent, combat, and investigate wildlife trafficking in silos (i.e., when government departments do not share information, goals, tools, priorities and processes with other departments).

70. The Project will also mobilize technical and financial resources to a minimum of US$ 11,645,204 million from co-managers of the reserve – Sahara Conservation Fund – implementing both European Union's POROA Project and Environmental Agency of Abou Dhabi's Oryx project. The Project will then build on the collective efforts of the different government institutions and civil society organizations and supplement resources for a more effective and efficient fight against wildlife crime. In particular, the Project will strengthen the legal and operational base for wildlife protection; encourage regional dialogue and cooperation against illegal ivory trade; as well as raise awareness and educate targeted populations on biodiversity protection and wildlife crime.

F. Lessons Learned and Reflected in the Project Design

71. The project design and implementation plan build on the World Bank and other partners' experience on climate resilience, sustainable natural resources management, water supply and sanitation as well as agriculture and social inclusion such as: (i) agriculture sector support projects in Chad, especially the recently closed Emergency Agriculture Production Support Project (P126576); sustainable agriculture and natural resource management in the Sahel zone; regional agricultural productivity technology generation and exchange in the framework of the West Africa Agricultural Productivity Program (P122065), Sahel Pastoralism Support Project (P147674) (ii) water sector support projects in the region including Water for Agropastoral Livelihoods Pilot Project (P152024), the NBA Regional Program against desertification, 2005-2010 and the Loess Plateau Watershed Rehabilitation and Management projects (P003540, P056216, and P103573). Lessons learned include in particular:

I. **Experience in grassroot local planning constitutes a basis for determining and supporting local CSA-oriented actions**. There is a significant potential for scaling-up technologies/practices to achieve CSA triple objective (productivity, adaptation, and mitigation) in Chad. In addition, operations in fragile, low-capacity contexts need tailored implementation support from the World Bank in the form of regular supervision, customized assistance to proactively address critical implementation challenges, and provision of close support in cases of critical deficiencies.

II. **Investments in institutional capacity building at all levels is critical to sustainability of investments.** Providing the opportunity for local governments to implement small-scale, community-based infrastructure projects enables learning by doing and increases ownership. It is important to place an emphasis throughout the project lifecycle on capacity-building measures to ensure sustainability of investments. At site-level, engaging communities at the outset in broadly inclusive and sustained

community planning and development processes can help stakeholders better understand how their resource management decisions affect their livelihoods and the well-being of their community and build crucial trust and confidence between communities and government agencies delivering services.

III. **Addressing water fragility in Fragile, Conflict and Violence (FCV) context is complex and not without risks** – projects should support associations for the management of conflict over resources. Intervening in an established system of such a critical resource as water has the potential to generate competing priorities. To mitigate potential for conflicts, project teams should pay special attention throughout the project to understand local power dynamics and any history of conflict over resources to avoid aggravating existing tensions. Where a conflict-resolution group or association exists, the project activities should seek to strengthen their capacity. Where no such group exists, the Project should help establish one (Community management committees). These committees are key to ensuring that the water is distributed fairly and that disagreements are amicably addressed.

IV. **Transforming structural causes of gender inequality by making climate change interventions gender sensitive and transformative.** Project interventions should be guided by activities (a) that tackle the structural causes and power dynamics that reinforce gender inequalities; and (b) that are promising in terms of contributing to the closing of gender gaps in the sectors natural resource management and access to water and local development. Integrating gender at all stages of the planning and implementation process is key. This should include, amongst others, (i) increasing women's participation in decision making, project development, identification and implementation, financial allocation, and M&E and (ii) ensuring adaptation builds on the strengths of women and men in a way that their skills, knowledge, and capacities are used adequately. Lessons from various other projects have been included in the design of ALBIÄ. Furthermore, a review of CDD projects[66] found that participatory approaches following the CDD model succeed in increasing women's direct participation in community decision-making forums, especially when target indicators on the number of participating women are set, as it will be the case for community engagement and participatory processes under this project. In addition, the establishment of local level institutions and groups (such as committees, councils, etc.) also have the additional positive effect that they provide a space for women to gather together, form bonds with fellow women, share problems that they are confronted with, and identify possible solutions to these problems.

72. ALBIÄ project also considers key insights from ongoing projects in the Chad portfolio. These lessons include (a) ensuring that PIUs are in place once the project is approved and start implementation immediately; and (b) addressing procurement challenges (and national thresholds) especially with infrastructure projects which require designs, bills of quantities, and supervision of works, and the management of the contracts..

[66] Susan Wong, Scott E. Guggenheim - Community-driven development: myths and realities, 2018

III. IMPLEMENTATION ARRANGEMENTS

A. Institutional and Implementation Arrangements

73. The Ministry of Environment, Water and Fisheries (MEEP) has the mandate to coordinate all environment, water and climate change-related programs in Chad across sectors to ensure a harmonized approach. A PIU will be created before project effectiveness and placed under the supervision of the MEEP. It will have the overall responsibility for project oversight and coordination and will be composed of twelve persons, ten of whom will be based in-site in the project area (Djedaa), and two in Ndjamena. The staff based in the project area will be composed of (i) the coordinator, (ii) the procurement specialist, (iii) the financial management specialist, (iv) accounting specialist, (v) the monitoring and evaluation specialist, (vi) the environmental specialist, (vii) the social development and gender specialist, (viii) the water specialist, (ix) the internal auditor and (x) the communication/citizen engagement specialist. The conservation specialist and the administrative assistant will be based in Ndjamena.

74. Thus, the MEEP has the overall responsibility for project oversight and coordination through the PIU in collaboration with relevant in-line ministries (i.e. Ministry of Agriculture, Ministry of Social Affairs, Ministry of Livestock, Ministry of Land Tenure). Some interventions will be conducted under a delegated management[67] (*Maitrise D'Ouvrage Déléguée* - MDOD), particularly:

i. Sub-component 1.1.i specific investments in the reserve will be managed by Sahara Conservation Fund (US$ 5 million)
ii. Sub-component 2.2 will be managed by SOS SAHEL France (US$ 16.45 million)

Table 6. Project Institutional Arrangements

Project Components	Institutional Arrangements
Component 1	
Sub-component 1.1 i.	Delegated Management with Sahara Conservation Fund
Sub-component 1.1 ii.	PIU with technical assistance
Sub-component 1.2	PIU with technical assistance
Component 2	
Sub-component 2.1	PIU with private sector and technical assistance;
Sub-component 2.2	Delegated Management with SOS SAHEL France (with previous proven experience)
Sub-component 2.3	PIU with private sector and technical assistance

75. The institutional arrangement aims to tackle the isolation and low connectivity of the project area but also its immense size by deploying in-site proven and acknowledged good performance and skills (delegated management) as well as line ministries representatives (hence the delocalized PIU).

76. The Government will prepare a PIM by project effectiveness with detailed account of the implementation arrangements at both national and provincial levels, addressing issues related to procurement, financial management, M&E, environmental and social risks management, and other aspects.

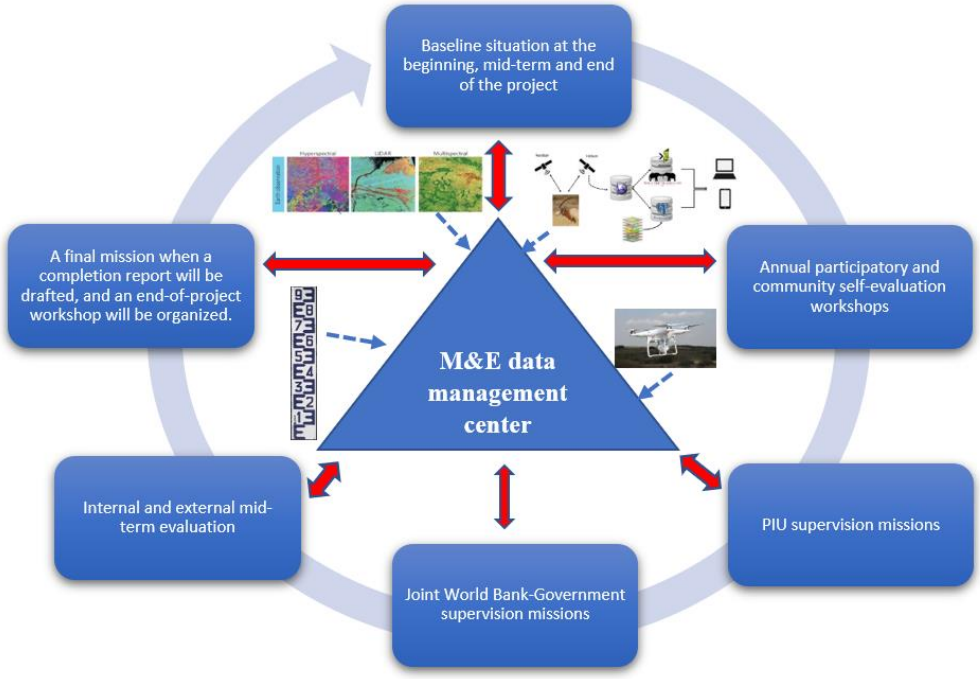
[67] The overall responsibility will remain at PIU level and the component funds will serve to recruit these two MDOD.

B. Results Monitoring and Evaluation Arrangements

77. **General characteristics.** The results monitoring framework consists of expected indicators, relevant baseline data of outputs and outcomes, milestones, and a suggested timeline for monitoring progress. The project's M&E system has been designed following the M&E guidelines, to provide necessary information for the results monitoring framework. The M&E system will be computerized so that it could provide accurate information to verify the progress and eventual achievement of results (outputs, outcomes, and impacts), support learning on the basis of experience, determine accountability for results, and facilitate informed decision-making by the project team.

78. **Disruptive technologies.** An emphasis will be placed on the use of disruptive ICT to facilitate data collection and real-time M&E. Therefore, satellites, drones, GPS collars for wildlife monitoring, GPS, piezometers, mobile phones and tablets will be used in sector of agriculture production, regeneration of fauna and flora, and management of water resources. The project M&E mechanism is detailed in the Figure 4 below.

Figure 4. ALBIÄ M&E System



79. **Results measurement for project performance.** A series of baseline studies have been completed as part of the preparatory works and will be the starting point for setting targets and measuring project results. They will serve as a benchmark for routine monitoring (quarterly report, annual project report) of project implementation to facilitate an informed strategic decision-making process. A mid-term review will be conducted during the project implementation as well as an impact evaluation study at the end of the project implementation.

80. **Learning from experience**. The PIU will be responsible for ensuring that there are strong links between M&E and knowledge management and strategic communication. The M&E evaluation system will generate knowledge products and services that will be disseminated among project beneficiaries through a wide range of communication channels, using user-friendly communication tools.

81. **Accountability for results.** The project's M&E system will involve, in addition to the required M&E reporting, an accountability mechanism comprising stakeholder consultations and the mid-term review. Information-sharing and stakeholders' involvement throughout the project cycle will be a core component of the project's accountability in terms of results. The project management will ensure that stakeholders/beneficiaries have access through various channels to timely, relevant, and unambiguous information about the project's M&E findings and are also able to incorporate their views in the project's review and decision-making process.

82. **Gender impact evaluation**: The project will conduct a gender impact evaluation, supported by the World Bank's Africa Region Gender Innovation Lab. The evaluation would assess the impact of one or more sub-interventions, aimed at empowering women in decision making, agriculture, and generate evidence on how to close the gender gap in income, productivity, assets and employment.

83. **Harmonization and integration with national and sectoral M&E systems**. The project will make consistent efforts to empower national institutions to ensure that the M&E of project outcomes feed into the national MEEP M&E system.

C. Sustainability

84. **Sustainability of the livelihood investments.** The following will be important for the sustainability of investments:

i. At the local level, the livelihood investments will only be successful if the participatory process and capacity building are part of the community natural resource landscape planning, ownership, control, and management of their surrounding natural resources; and if all members and different groups of the community (including vulnerable groups, such as women and youth are involved). Project investments in these areas will have long-term value for targeted communities with inclusiveness in the process.
ii. Capacity enhancement for smallholders' resilience through increased adoption of climate resilient agro-practices that include how to exercise prudent risk taking, risk reduction, risk transfer, risk reserves that will have a long-term, sustained, lasting, and multiplier effect.
iii. Third-party technical and capacity support for improvements to the institutional, technical, and implementation capacity at the provincial-, district-, and community-level with an emphasis on a participatory cross-sectoral landscape approach.
iv. Tangible and intangible incentives will result from better management of natural resources. Hence, all the project investments are intended to not only better manage resources but also to generate incremental income for the communities. Where communities can expect to derive benefit, they will be more likely to maintain those management practices.

85. **Sustainability of the PA/forest reserve conservation investments**. The sustainability of these investments is underpinned by the collaboration between MEEP and the partners engaged in the ongoing concession management of the parks. The MEEP is currently increasing the number of park rangers nationally, which also benefits the project targeted parks. One of the major constraints has been the lack of housing and basic infrastructure, both of which will be addressed under the project. At a higher and broader level, sustainability of wildlife conservation in Chad depends on (a) empowerment of community resource boards and other local entities to allow them to derive financial benefits from ecosystems and wildlife under their authority and (b) enhancing the links between national tourism development and wildlife conservation, community conservancy, to allow for more participation of all relevant stakeholders. The project will also work on how best to collaborate with national innovative initiatives (e.g. Zakouma National Park) to address such challenges in this area.

86. **Sustainability of water access and management**. It is important to ensure the sustainability of both water resource monitoring mechanism and management of water supply assets.

i. **Water resource monitoring mechanism**: the project will support the relevant training of Community management committees at the local level to report and send collected data to CDIG[68] and DGRE[69]. Options of ensuring water resource monitoring will be proposed through the assessment of available water resources in the project area. It is important to setup an incentivization mechanism for the Community management committees to ensure sustainability of tasks allocated to them. The training sessions and social intermediation activities (citizen engagement activities) are good opportunities to engage and explain the importance of the monitoring and information transmission from local levels to central level. Similarly, by engaging communities in the small works financed by the project, their ownership of the assets will increase – and the engineers in charge of their construction will train them on the asset's maintenance.

ii. **Management of water supply assets**: the WASH sector diagnostic issued in June 2019 has recommended options to ensure the sustainability of the management of drinking water supply in rural Chad. Strong recommendation was made to promote Public Private Partnership (PPP) in the management of water supply systems as it is the case in most West African francophone countries (Niger, Senegal, Benin, Burkina Faso…). Prior to the issuance of the WASH sector diagnostic, the government of Chad had organized a national workshop to find sustainable solutions for the management of rural water supply assets in February 2019. Representative from Mauritania, Niger and Senegal were invited to share their respective country's experience with Chad. One of the strong recommendations of this workshop was the promotion of a PPP contract to manage water supply systems. The Project will build on the recommendation of the workshop and the WASH diagnostic report. It will also build on the current experience of 16 centers financed by the EU[70] to ensure the sustainability of the water supply asset planned in the project. The citizen engagement instrument will be used for social intermediation and to engage the beneficiary communities to weigh in on the PPP option.

IV. PROJECT APPRAISAL SUMMARY

A. Technical and Economic Analysis

87. **Technical design of the Project.** The project design builds on similar projects with a good track record of implementation, and there has been intensive collaboration with the client in the preparation stage to ensure appropriate designs and inclusiveness across all the relevant ministries for strong ownership. In addition, the project structure and components have been designed to ensure complementarities among all the components in an integrated landscape and ecosystem approach to ensure implementation feasibility of each subcomponent by creating cumulative benefit accrual to the beneficiaries, environment, and the country from the different activities financed.

88. **Economic analysis of productive investments.** The economic analysis is based on the following assumptions: (i) the period considered is 20 years corresponding to the lifetime of key infrastructure taken as the long-term investment; (ii) financial benefits and costs have been converted into economic values; and (iii) the long-term capital opportunity cost (discount rate) retained is 6 percent.

[68] CDIG : Centre de Documentation et d'Informations Géographiques (Documentation and Geographic information Center)
[69] DGRE : Direction Générale des Ressources en Eau du MEEP
[70] Under the 10th phase of the European Development Fund, Project called: *Projet d'Accès à l'Eau Potable -PAEPA* of an amount of €90 million.

89. **The analysis conducted based on the aforementioned assumptions results in an Economic Internal Rate of Return (EIRR) of 29 percent and a Net Present Value (NPV) of XAF 31 billion or US$ 54 million at Carbon market price.** The overall project is profitable under all scenarios with valuation of environmental benefits (see Annex 5).

B. Fiduciary

(i) Financial Management

90. In line with the Financial Management Manual for World Bank IPF Operations (effective on March 1, 2010 and revised on February 10, 2017), a financial management assessment was conducted within the MEEP. It was agreed that a new PIU will be created and embedded at MEEP to have the fiduciary responsibility of the project. The new PIU will manage both the technical and the fiduciary aspects of the proposed project. The assessment of the FM capacity of MEEP was conducted by a World Bank Financial Management Specialist (FMS). The objectives of the assessment were to determine: (a) whether this entity has adequate FM arrangements in place (planning, budgeting, accounting, internal control, funds flow, financial reporting, and auditing arrangements) to ensure that project funds will be used in an efficient and economical way for the purpose they are intended for and; (b) that project financial reports will be prepared in an accurate, reliable and timely manner; and (c) that the project's assets will be safeguarded.

91. Currently MEEP doesn't have any experience with World Bank financed projects and faces capacity constraints. As a result of the identified FM capacity constraints, the following actions need to be completed to ensure adequate FM arrangements for all aspects of the project: (a) preparing and adopting the PIM by the project effectiveness date, (b) adopting the unified FM procedures manual in use in all World Bank funded projects in Chad (the FM procedures manual, as well as the PIM will include internal controls, budget process, assets safeguards, and description of roles and responsibilities of all stakeholders); (c) recruiting a FMS, an internal auditor, an accountant, and an accounting assistant, by the project effectiveness. The PIU will also need to purchase an accounting software to reflect the specificities of the Project, within three months after the project effectiveness. An external auditor will be recruited based on Terms of Reference (TOR) acceptable to the World Bank, within five months after project effectiveness.

92. Two MDODs are expected to be involved in the implementation of some project activities (sub-components 1.1.i and 2.2). The review of Sahara Conservation Fund and SOS SAHEL France financial management capacities was very positive. Both entities have: (a) a well-established structure for their financial management function, (b) detailed written administrative and financial management procedures, a computerized financial management system capable of recording and reporting separately project funds with a good level of detail, and (c) their financial statements regularly audited by independent auditors.

93. The compliance of the proposed financial management system to be used under the project was evaluated by the World Bank FMS. Based on this evaluation and the improvements introduced during project preparation, the financial management system is considered satisfactory, indicating that it satisfies the World Bank's minimum requirements under World Bank Policy and Procedures for IPF operations, to provide, with reasonable assurance, accurate and timely information on the status of the project as required by the IDA.

94. Given that the MEEP will be reinforced by creating a new properly staffed PIU and considering the mitigation measures specified in Annex 2, the FM residual risk for MEEP is substantial.

(ii) Procurement

95. **Applicable procurement rules and procedures**. Procurement of goods, works, non-consulting and consulting services for the whole project will be carried out in accordance with the procedures specified in (a) the World Bank Procurement Regulations for IPF Borrowers (dated July 2016, revised November 2017 and August 2018) (Procurement Regulations); (b) the Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants (dated October 15, 2006 revised in January 2011 and July 1, 2016) (Anticorruption Guidelines), and (c) the provisions stipulated in the Financing Agreement.

96. The proposed project will use the Systematic Tracking of Exchanges in Procurement (STEP) system. STEP is a planning and tracking system, which will provide data on procurement activities, establish benchmarks, monitor delays, and measure procurement performance.

97. Procurement assessments have been conducted during project appraisal. The main risks identified are:

a) Staff involved in the project may not have enough knowledge of the New Procurement Framework (NPF) and/or there is a risk of confusing NPF with former Procurement and Consultant guidelines;
b) Procurement staff with necessary experience to effectively and timely implement procurement actions in line with WB procurement policies and procedures are insufficient;
c) Inadequate communication and interaction between beneficiaries and the PIU may lead to delays in procurement and poor cost projections;
d) Administrative routines may result in procurement delays with the potential to affect project implementation;
e) Procurement in specialized areas with few bidders can restrict competition and possibly increase prices and collusion risks;
f) Insufficient capacity can lead to poor contract management and administration of big contracts; and,
g) Poor filing of documents may lead to loss of documents.

98. Overall, all these risks can cause mis-procurement, possible delays in evaluation of bids, and technical proposals leading to implementation delays, poor quality of contract deliverables, and reputational risks to the World Bank and the project.

99. To address the risks identified, the **following mitigation measures** should be put in place : (a) hiring, on a competitive basis, a procurement specialist who is experienced and familiar with World Bank procurement procedures and policies ; if this requirement is not met before project effectiveness, the procurement specialist of the ProPAD project[71] will support procurement activities until the new procurement specialist is recruited; (b) training all procurement staff on the NPF; (c) developing a section on procurement procedures as part of the PIM to clarify the role of each staff involved in the procurement process and define the timeline for each procurement stage, specifically with regard to review and approval systems, and signing of contracts ; (d) developing contract management plans for prior review contracts and (e) improving the filing system at the new created PIU level to ensure compliance with the World Bank procurement filing manual. After the proposed mitigation measures below, the residual risk will be substantial.

[71] The ProPAD project (P162956) is currently managing the PPA of the proposed ALBIÄ Project

100. **Project Procurement Strategies for Development (PPSD)** and draft Procurement Plans detailing the first 18 months of implementation were prepared and have been reviewed and approved on May 19, 2020. During implementation, the Procurement Plans will be updated as required and at least annually, to reflect actual program implementation needs and improvements in institutional capacity.

C. Legal Operational Policies

	Triggered?
Projects on International Waterways OP 7.50	No
Projects in Disputed Areas OP 7.60	No

D. Environmental and Social

101. The environmental and social risk rating is moderate. Impacts associated with the implementation of activities financed by this project are expected to be site specific, primarily associated with the construction/rehabilitation of small infrastructure in the protected areas, as well as water access and sanitation infrastructure, and income generating activities such as agro silvopastoral activities. The main environmental risks are related to the potential impact of component 2 on natural resources, e.g. water access and agriculture activities. The main social risks are related to: (i) the impact of potential restrictions on access to the use of natural resources in the protected areas by the local population; (ii) possible SEA/SH and abuse of local communities by workers financed by the project; (iii) effective consultations and information sharing with a widely dispersed and geographically remote population; and (iv) challenges for supervision, given the insecurity in the project area.

102. The project is expected to have significantly positive economic, environmental and social impacts in the project area, as well as contributing toward reducing the overall vulnerability of the local populations, women and youth. The Project is expected to yield significant benefits in improved women and children's health (through access to water), more livelihood opportunities, and reduced environmental and climate impacts. For example, livelihood interventions will specifically target women-headed households (at least 50 percent of beneficiaries of these activities will be women). Improved access to water under this project could increase women's available time for economic activities. However, the implementation of some activities under Sub-component 1.1 and potentially some activities under the Component 2 may have a negative social impact on private land, livelihoods, and the communities themselves (e.g. through small-scale construction work, building airstrips and rehabilitate roads). It is expected that the project will have a significant positive impact on the life of the population through sustainable agricultural development, access to water and protection of the reserve. The Project will aim to mitigate the impacts of climate change, implement adaptation measures, and strengthen the resilience of agricultural production systems, natural resource management and local livelihoods. The Project will notably support the use of: (i) solar energy sources; (ii) low-polluting materials and equipment; and (iii) improved agricultural inputs, including improved seeds, fertilizers and safe pesticides as part of the Integrated Pest Management Plan[72] (potential adverse effects of this will be mitigated with the help of the environmental assessment). This plan will also integrate specific measures regarding potential locust invasion.

[72] As part of the implementation of the integrated pest management plan (IPMP), under certain conditions, selected pesticides could be used. In that case, the use of pesticide will be in compliance with the EHS guidelines of the WBG. As per the ESF, the following additional criteria will apply when selecting pesticides: (a) they will have negligible adverse human health effects; (b) they will be shown to be effective against the target species; and (c) they will have minimal effect on nontarget species and the natural environment.

103. As the exact project sites and technical designs of the activities are not yet exactly known, an Environmental and Social Framework (ESMF), including an integrated pest management plan, a Resettlement Policy Framework (RPF) and a Resettlement Process Framework (PF) in accordance with the Environmental and Social Standards (ESS) of the World Bank's Environmental and Social Framework (ESF) have been prepared, consulted upon[73] and published in-country on May 7, 2020 and at the World Bank site on May 8, 2020. The ESMF outlines the principles and procedures of environmental assessment and makes use of the general and sector-specific Environmental Health and Safety Guidelines for the identified subprojects in relation to occupational and community health and safety. The RPF outlines the principles and procedures that will govern any land acquisition that cannot be avoided, or any negative impact on livelihoods because of activities financed by the project. Environmental and Social Management Plans and Resettlement Action Plans or Abbreviated Resettlement Action Plans will be prepared, when necessary, before any works that will have a potential negative impact on the environment, require land acquisition, or affect local populations or their assets. In addition, a Process Framework has been prepared, consulted upon[74] and published in-country on May 7, 2020 and at the World Bank site on May 8, 2020, as the project may cause restrictions in access to natural resources in the OROA reserve.

104. The PIU will ensure that a functional and effective GRM is in place. The GRM is part of the Stakeholder Engagement Plan (SEP)[75] that has been prepared for the project; there it is also described in more detail. The GRM will be based on the existing local complaint management systems and will be established and operated in strong coordination with the local community management committees (see Sub-Component 1.2.). The GRM will also, as much as possible, be accessible in terms of language and format to local stakeholders and beneficiaries. The project's stakeholders and beneficiaries will be sensitized throughout the project's implementation on the GRM process. Furthermore, specific arrangements will be made to ensure that SEA/SH-related complaints are appropriately handled and referred to specialized SEA/SH service providers. The GRM will have a complaint tracking and recovery system at all levels and efforts will be made to build synergy between the project GRM and the GRMs for other World Bank-financed projects in the country.

105. An Environmental and Social Commitment Plan (ESCP) has also been prepared and disclosed in-country on May 7, 2020 and at the World Bank site on May 8, 2020. The ESCP sets out the material measures and actions required for the project to meet the ESSs over a specified timeframe. The ESCP has been negotiated on May 19, 2020 and forms part of the legal agreement.

106. The social risks related to the project-financed activities are also potentially compounded by the vast project target area that might make the supervision of project activities hard. Given this, a layered approach to project management and supervision will be ensured as World Bank staff and consultants might at times be unable to travel to many or all the activity sites (due to security or/and geographical distance constraints). This layered approach will include a contract with a local NGO as well as Geo-enabled Monitoring Systems (GEMS)-based monitoring and mapping of activities. Social risks, including human security, will be monitored on a continuous basis by the PIU, using a system that includes monitoring and mitigation mechanisms at the community, project, and national level, as well as IT and other innovations for remote monitoring.

107. During project preparation, a SEA/SH risk assessment (using the World Bank's tool developed for projects that include civil works) has been undertaken. As a result of this risk assessment, the SEA/SH risk is considered

[73] Consultations have been taken place from April 24 to 29, 2020.
[74] Consultations have been taken place from April 24 to 29, 2020.
[75] The SEP has also been consulted upon in April 2020 and published in-country on May 7, 2020 and at the World Bank site on May 8, 2020.

Moderate, with key risks being linked to the distant and vast project target area that might make the supervision of activities difficult, the pre-existing high prevalence of SEA/SH across the country and possible small-scale influx of labor for construction work. Engaging women in decision making bodies and offering livelihood opportunities - without proper mitigation measures can also increase the risk of domestic violence by disrupting normative family dynamics, and power and resource control. To mitigate these risks, a SEA/SH Action will be developed before the implementation of activities and NGO specializing in the issue will be identified and mobilized to support the consideration of GBV risks. Sub-Component 1.2. also includes the financing of sensibilization and awareness raising activities with regards to SEA/SH. Key components of the SEA/SH Action Plan will include the identification of SEA/SH risks and mapping of SEA/SH service providers in project areas, stakeholder consultations with women's organizations and groups, the financing of community SEA/SH sensitizations (also under Sub-Component 1.2.), and an SEA/SH sensitive GRM. The Social Development specialist recruited by the PIU will also be responsible for monitoring and supporting the mitigation of SEA/SH risks throughout project implementation. Clauses on SEA/SH and codes of conduct will be systematically included in the contracts of contractors who work with the project and regular training will be mandatory. Workers participating in community infrastructure activities will also sign these Codes of Conduct and participate in regular training.

V. GRIEVANCE REDRESS SERVICES

108. Communities and individuals who believe that they are adversely affected by a World Bank (WB) supported project may submit complaints to existing project-level grievance redress mechanisms or the WB's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS), please visit http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

VI. KEY RISKS

109. The overall risk is assessed as **substantial** because of multiple key risk categories—as listed below. The risks are rated as substantial or moderate and the proposed mitigation measures are elaborated as follows:

110. **Policy and governance risk is substantial.** Although the security environment has stabilized after a period of aggravated tension in 2019 due to inter-communal conflicts around the project area, challenges related to the weak presence of the state at the provincial and communal levels, remain and are likely to affect the PDO. Challenges include those related to devolution of responsibility, decision-making, resource and revenue generation, and service delivery, among others. Additional political risks are posed by the potential shift in Government priorities given the COVID-19 pandemic situation. To mitigate this potential risk, the project implementation structure is designed to include the representation and participation of local stakeholders (traditional leaders, religious leaders and administrative authorities) in decision-making processes and project implementation. To this end, community representation in the project area will be included in the Project Steering Committee at the national level. Another important potential risk that the project could face is that of cross-

border insecurity and insecurity related to illegal gold mining that could spill over into the ZIP. These threats could also affect the World Bank team's travel to parts of the provinces such as Batha and Borkou. These risks will be mitigated through the identification and use of appropriate methods of communication and implementation support, including possible monitoring and support by third parties including local NGO.

111. **Macroeconomic** risk is substantial. Chad is slowly recovering from the crisis caused by the drop in the oil price which undermined economic growth between 2015 and 2017 in Chad. With reliance on a few primary exports and a relatively undiversified economy, Chad remains vulnerable to external demand and price shocks. The macroeconomic instability is compounded by pressures from weak fiscal management. Economic shocks, macroeconomic instability, and weak fiscal management could have negative consequences on the sound implementation of the project. For example, this could weaken private sector participation in either eco-tourism or income generating activities. Furthermore, upcoming elections in December 2020 coupled with the country's lockdown of major districts to deal with the COVID-19 pandemic situation will likely further slowdown economic growth. The macroeconomic situation will be monitored for possible effects on the Project. The project's focus on community mobilization in areas with limited infrastructure and social services would directly contribute to a COVID-19 response strategy in rural areas.

112. **Institutional Capacity for Implementation risk us substantial.** It is highly likely that weak institutional capacity to implement and monitor the operation could have a negative effect on the achievement of the PDO. This is the first time that the Ministry of Environment, Water and Fisheries is implementing a World Bank financed project. In addition to this inexperience, the Ministry has limited technical, fiduciary and administrative capacity. This, combined with the current challenges resulting from the limited capacity of the state at all levels, places the project in a substantial-risk situation in terms of institutional capacity. . As a mitigating measure, the project design foresees substantial capacity building through support to the Ministry's strategy and policy reforms and training. Capacity building will continue throughout the duration of the project, as required, to enable the structures concerned to carry out their tasks effectively. Mitigation measures will include close monitoring of project implementation by the World Bank through continuous support and supervision as appropriate.

113. **Fiduciary risk is substantial.** The overall fiduciary environment is characterized by a significant weakness in the integrity of the financial management and procurement system. There is an ongoing risk that fraud and corruption could potentially affect fiduciary compliance with the World Bank policies. A detailed action plan to mitigate this risk will be prepared and a fiduciary team will be recruited and trained to support the project by project effectiveness and at mid-term phases.

114. **Other – COVID-19 impacts risk is assessed as substantial.** While the impacts from the ongoing COVID-19 pandemic are hard to predict, it is likely that they will significantly affect both the economic and social well-being of the nation, with impacts most acutely felt by the already vulnerable rural poor. The social distancing measures put in place by Government of Chad due to COVID-19 are already limiting the much-needed face-to-face frequent awareness sessions and multi-stakeholder consultations to obtain support and ownership of the Project at the community level. ICT solutions will need to be sought and connectivity at the local levels strengthened to reach project effectiveness and support project implementation.

VII. RESULTS FRAMEWORK AND MONITORING

Results Framework

COUNTRY: Chad

ALBIÄ - Chad Local Development and Adaptation Project

Project Development Objectives(s)

The project development objective is to improve the management of natural resources and the livelihood of populations in selected climate vulnerable areas in and around the Ouadi Rime and Ouadi Achim (OROA) reserve in Chad.

Project Development Objective Indicators

Indicator Name	PBC	Baseline	End Target
Improve the management of natural resources in selected climate-vulnerable areas in and around OROA			
Share of populations of key species stabilized or increased on the OROA Reserve's territory (Percentage)		0.00	70.00
Terrestrial protected area under improved management for conservation and sustainable use (Square kilometer(km2))		0.00	77,950.00
Land area under sustainable landscape management practices (CRI, Hectare(Ha))		0.00	2,000.00
Improve the livelihood of populations in selected climate-vulnerable areas in and around OROA			
People provided with access to improved water sources (CRI, Number)		0.00	10,000.00
People provided with access to improved water sources - Female (RMS requirement) (CRI, Number)		0.00	5,000.00
Farmers adopting improved agricultural technology (CRI, Number)		0.00	500.00

Indicator Name	PBC	Baseline	End Target
Farmers adopting improved agricultural technology - Female (CRI, Number)		0.00	260.00
Farmers adopting improved agricultural technology - male (CRI, Number)		0.00	240.00

Intermediate Results Indicators by Components

Indicator Name	PBC	Baseline	End Target
Support Biodiversity Conservation and Sustainable Natural Resources Management			
Number of basic infrastructure built on protected area (e.g., outposts, firebreaks, roads, watchtowers, visual delineation) (Number)		0.00	5.00
Increased frequency and scope (% of PA area) of patrols for wildlife monitoring and protection (Percentage)		10.00	70.00
Policies strengthened and national legal frameworks to combat wildlife crime (Yes/No)		No	Yes
Encourage Inclusive Local Development			
Representatives in community-based decision-making and management structures that are females (Percentage)		0.00	50.00
Participants to training and sensibilization sessions in environment, conservation, nature-based tourism, gender, citizen engagement, WSS, WRM and CSA provided (Number)		0.00	5,000.00
Number of inclusive and participatory local community SNRM committees and mechanisms operational (Number)		0.00	5.00
Promote Resilient Livelihoods			
Farmers reached with agricultural assets or services (CRI,		0.00	2,500.00

Indicator Name	PBC	Baseline	End Target
Number)			
Farmers reached with agricultural assets or services - Female (CRI, Number)		0.00	1,300.00
Number of water systems/points built/rehabilitated under delegated management (Number)		0.00	5.00
Number of Sanitation facilities constructed (Number)		0.00	10.00
Number of water resource data collection campaigns per year (Number)		0.00	2.00
% of women self-reported increased income (or increase yield) from extension services (Percentage)		0.00	50.00
Project Management			
Grievances registered related to delivery of project benefits that are addressed (Percentage)		0.00	100.00

Monitoring & Evaluation Plan: PDO Indicators

Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
Share of populations of key species stabilized or increased on the OROA Reserve's territory	This indicator measures the success of the Project's activities on biodiversity conservation on the territory of the OROA Reserve, using as a proxy the status of the populations of select	Baseline, Mid-Term, Completion.	Field survey undertaken for the Project	Field survey undertaken for the Project (e.g., line transect surveys of selected sample blocks)	Sahara Conservation Fund, via Biodiversity consultant for field survey

	species, deemed suitable for acting as meaningful indicator of conservation effectiveness. The list of species includes: the Scimitar-horned oryx, the Addax, the Dama gazelle, the Dorcas gazelle, the Red-fronted gazelle, the Arabian bustard, the Denham's bustard, the Nubian bustard, the white-bellied bustard, the black-bellied bustard, the Saville's bustard, the Lappet-face vulture, the Rueppell's vulture, and the Ostrich. Conservation efforts would be deemed successful if the populations of at least 70 percent of these select species are stabilized or increasing.				
Terrestrial protected area under improved management for conservation and sustainable use	This indicator tracks the area under improved management (i.e., management plan is developed with realistic and meaningful goals, implementation budget is regularly available, consultations with	Baseline, Mid-term, Completion.	Activity reports from SCF (which are input into the Project's biannual progress report)	Scorecard	SCF

	stakeholders on results and future directions take place from time to time, positive results observed).				
Land area under sustainable landscape management practices	The indicator measures, in hectares, the land area for which new and/or improved sustainable landscape management practices have been introduced. Land is the terrestrial biologically productive system comprising soil, vegetation, and the associated ecological and hydrological processes; Adoption refers to change of practice or change in the use of a technology promoted or introduced by the project; Sustainable landscape management (SLM) practices refers to a combination of at least two technologies and approaches to increase land quality and restore degraded lands for example, agronomic, vegetative, structural, and management measures that, applied as a combination, increase the	Annually	Progress report	Field visits to plots of land being improved under Sub-component 2.2.	NGO implementing Sub-component 2.2.

	connectivity between protected areas, forest land, rangeland, and agriculture land.				
People provided with access to improved water sources	This indicator measures the cumulative number of people who benefited from improved water supply services that have been constructed through operations supported by the World Bank.	Quarterly	Progress report	Field trip to settlements benefitting from Sub-component 2.3.	Project Implementation Unit
People provided with access to improved water sources - Female (RMS requirement)	This indicator measures the cumulative number of people who benefited from improved water supply services that have been constructed through operations supported by the World Bank.	Quarterly	Progress report	Field trip to settlements benefitting form Sub-component 2.3	Project Implementation Unit
Farmers adopting improved agricultural technology	This indicator measures the number of farmers (of agricultural products) who have adopted an improved agricultural technology promoted by operations supported by the World Bank. NB: "Agriculture" or "Agricultural" includes: crops, livestock, capture	Annually	Progress Report	Filed Survey	Implementing Agency (SOS SAHEL France) and Project Implementation Unit

	fisheries, aquaculture, agroforestry, timber and non-timber forest products. Adoption refers to a change of practice or change in use of a technology that was introduced or promoted by the project. Technology includes a change in practices compared to currently used practices or technologies (seed preparation, planting time, feeding schedule, feeding ingredients, postharvest storage/ processing, etc.). If the project introduces or promotes a technology package in which the benefit depends on the application of the entire package (e.g., a combination of inputs such as a new variety and advice on agronomic practices such as soil preparation, changes in seeding time, fertilizer schedule, plant protection, etc.), this counts as one technology. Farmers are people				

	engaged in farming of agricultural products or members of an agriculture related business (disaggregated by men and women) targeted by the project.				
Farmers adopting improved agricultural technology - Female		Annually	Progress Report	Field Survey	Implementing Agency (SOS SAHEL France) and Project Implementation Unit
Farmers adopting improved agricultural technology - male		Annually	Progress Report	Field Survey	Implementing Agency (SOS SAHEL France) and Project Implementation Unit

Monitoring & Evaluation Plan: Intermediate Results Indicators					
Indicator Name	**Definition/Description**	**Frequency**	**Datasource**	**Methodology for Data Collection**	**Responsibility for Data Collection**
Number of basic infrastructure built on protected area (e.g., outposts, firebreaks, roads, watchtowers, visual delineation)	This indicator tracks the small infrastructure investments by the Project on Reserve to support conservation and management of natural resources. These investments, expected to include outposts, firebreaks,	Quarterly	Progress report	Field trip to areas were infrastructure are built.	SCF

	roads, and watchtowers, will facilitate, among others, overall monitoring and enforcement as well as fire management.				
Increased frequency and scope (% of PA area) of patrols for wildlife monitoring and protection	This indicator measures how effective the Project is in supporting more frequent and comprehensive patrolling on the territory of the OROA Reserve.	Quarterly	Progress Report, Interviews with guards and other OROA Reserve stakeholders	Use of advanced software to measure, evaluate and improve the effectiveness of wildlife law enforcement patrols and site-based conservation activities	SCF
Policies strengthened and national legal frameworks to combat wildlife crime	This indicator measures how policies and legal framework have been strengthened as a result of the Project.	Biannually	Progress Report	Survey and interviews	Project Implementation Unit
Representatives in community-based decision-making and management structures that are females	This indicator measures the space created and the effectiveness of mechanisms established by the project to include vulnerable and marginalized groups in decision-making processes. The baseline will be established after a baseline study.	Biannually	Progress report	Field survey	Project Implementation Unit
Participants to training and sensibilization sessions in environment, conservation, nature-based tourism, gender, citizen engagement, WSS, WRM and CSA	This indicator tracks the capacity building and awareness raising activity across a whole spectrum of	Biannually	Progress Report	Satisfaction surveys at training/sensibilization sessions	Project Implementation Unit

provided	NRM and climate change topics.				
Number of inclusive and participatory local community SNRM committees and mechanisms operational	This indicator tracks the empowerment of local populations in managing natural resources in their vicinity. Operational mechanisms refers to: 1/ Clear rules established; 2/ Representativeness of participation; 3/ Regular meeting; 4/Relevant decisions on common interest/community issues. The dimension of "inclusive" refers to the participation of women, youth and other vulnerable groups (such as persons with special needs, from minority groups., etc.). The dimension "participative" refers to the process and regularity with which community members are involved and heard. Both dimensions will be described in more detail in the Project Operations Manual of the project.	Biannually	Progress report	Field survey	Project Implementation Unit
Farmers reached with agricultural assets or services	This indicator measures the number of farmers who were provided with	Annually	Progress report	Field survey	Implementing Agency (SOS SAHEL France) and Project Implementation

	agricultural assets or services as a result of World Bank project support. "Agriculture" or "Agricultural" includes: crops, livestock, capture fisheries, aquaculture, agroforestry, timber, and non-timber forest products. Assets include property, biological assets, and farm and processing equipment. Biological assets may include animal agriculture breeds (e.g., livestock, fisheries) and genetic material of livestock, crops, trees, and shrubs (including fiber and fuel crops). Services include research, extension, training, education, ICTs, inputs (e.g., fertilizers, pesticides, labor), production-related services (e.g., soil testing, animal health/veterinary services), phyto-sanitary and food safety services, agricultural marketing support services (e.g., price monitoring, export promotion), access to farm and post-harvest				Unit

	machinery and storage facilities, employment, irrigation and drainage, and finance. Farmers are people engaged in agricultural activities or members of an agriculture-related business (disaggregated by men and women) targeted by the project.				
Farmers reached with agricultural assets or services - Female		Annually	Progress report	Field survey	Implementing Agency (SOS SAHEL France) and Project Implementation Unit
Number of water systems/points built/rehabilitated under delegated management	The indicator tracks the number of water systems/points built/rehabilitated and under sustainable management through public private partnership (PPP) management.	Biannually	Progress report	Field survey	Project Implementation Unit
Number of Sanitation facilities constructed	This indicator tracks the number of sanitation facilities constructed.	Biannually	Progress report	Field visit	Project Implementation Unit
Number of water resource data collection campaigns per year	The indicator tracks the number of measurement campaigns conducted every year via measurement instruments (piezometer and pluviometer).	Annually	Progress report	Field visit	Project Implementation Unit

	Information collected is sent to the data base operators for update.				
% of women self-reported increased income (or increase yield) from extension services	The indicator captures the percentage of women that report an increase in income (or increase in yield) from extension services that were supported by this project. The target values that are provided are indicative. A baseline studies will provide a baseline value and also define more concretely the end of project target value.	Annually	Project activity reports, annual reports, studies and surveys, as applicable.	Field trips and studies/surveys.	Project Implementation Unit
Grievances registered related to delivery of project benefits that are addressed	This indicator measures the transparency and accountability mechanisms established by the project so the target beneficiaries have trust in the process and are willing to participate, and feel that their grievances are attended to promptly. It tracks the efficiency of the grievance redress mechanism: Communities have information about the project and are fully aware of the project processes, are aware of the grievance redress mechanisms put in	Quarterly	Progress report	Field survey, GRM log	Project Implementation Unit

	place including the response time; and any conflict or disputes they take to the mechanisms is resolved within the appropriate time.				

ANNEX 1: Implementation Arrangements and Support Plan

COUNTRY: Chad
Chad Local Development and Adaptation Project

1. **Strategy and Approach for Implementation Support.** The PIM will present the details of the implementation modalities and institutional arrangements. The PIM and its adoption are considered as standard operating procedures for the Project. The strategy of the Implementation Arrangements and Support Plan has been developed according to the nature and the characteristics of the Project, as well as its risk profile. The strategy focuses on the principal risks identified and the agreed risk mitigation measures described in the SORT. It will also provide the technical advice necessary to facilitate achieving the PDO. The Plan also identifies the minimum requirements to meet the World Bank's fiduciary obligations.

2. **Implementation Support Plan and Resource Requirements.** Collaboration with key stakeholders is a central factor for Project implementation. The Government has developed several key policies and has created and/or strengthened national institutions that are directly linked to wildlife protection, poverty reduction, and local development planning. The main elements of the Implementation Strategy are as follows:

3. **Technical support** will be provided to the participating agencies, in general, and to ALBIÄ PIU to ensure compliance with different agreed modalities and procedures. The World Bank will provide continuous extensive technical support through participating in semi-annual implementation support missions, a review mission one year after effectiveness, a Mid Term Review (MTR) and ad hoc advisory services, as well as through efforts and resources to support the hiring of ad hoc consultants on the ground. The multi-sectoral composition of the World Bank task team will support and monitor the Project's synergies and alignment with other World Bank financed projects and associated government entities. Furthermore, the World Bank will semi-annually conduct Interim Beneficiary Monitoring to collect qualitative information from Project beneficiaries on the implementation progress under components 1 and 2; this will be conducted by the World Bank's Global Practice Group and financed by the Project. Outside Sub-component 1.1 (specifically targeted at OROA Reserve) for which part of the investments' implementation will be delegated to SCF, Project investments have been pre-identified through hotspots to inform the work plan and procurement plan of ALBIÄ PIU, as well as the detailed Project costing. Implementation progress will also be monitored through geotagging. This will help identify and address the main factors that may hinder the proper implementation of the activities and provide guidance on resolving any issues identified. The support will include a continuous assessment of risks (outlined in the SORT), fiduciary requirements and inputs, and safeguards.

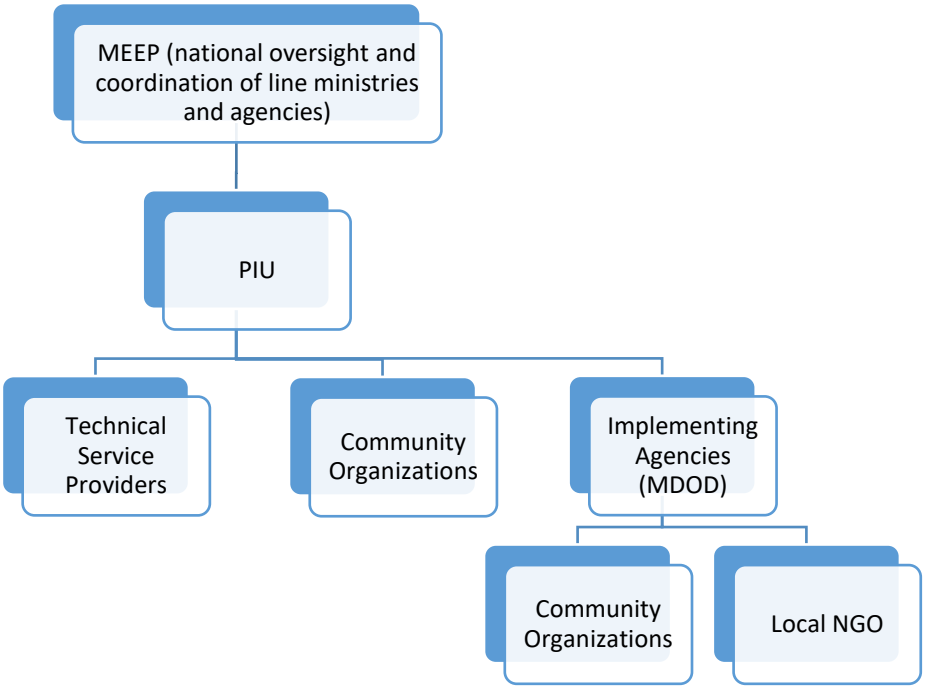
4. **To strengthen the capacity of the Implementing Unit,** PIU staff will be recruited prior to the effectiveness. Core staff will comprise twelve people, including ten based on a site in the project area and two in Ndjamena. Staff based in the project area include the coordinator, the procurement specialist, the financial management specialist, the accounting specialist, the monitoring and evaluation specialist, the environmental specialist, the social development and gender specialist, the water specialist, the internal auditor and the communication / citizen engagement specialist. Those to be based in Ndjamena are the conservation specialist and the administrative assistant (including accounting assistant).

5. **Service providers and partners.** The Project will hire and work with technical experts and service providers with acknowledged technical expertise. There will be 2 delegated management convention, (i) for Sub-component

1.1 with Sahara Conservation Fund, and (ii) for Sub-component 2.2 with a specialized entity with proven experience.

6. **Ministries, departments and agencies**. MEEP and its key technical directions will play a critical role in ensuring (i) sectoral coordination with other line Ministries (Ministry in charge of Agriculture, Ministry in charge of Social Affairs, Ministry in charge of Land Use, etc.) and (ii) regular technical backstopping as well as linking of project investments with development plans and policies.

Figure 1.1. Implementation Arrangements



7. **The Recipient shall, not later than six months after the Effective Date, establish and thereafter maintain, throughout the Project implementation period, with composition, mandate and resources satisfactory to the Association, a steering committee**, to be chaired by the Director General of the MEEP, and to be comprised of representatives of the Recipient's Ministry of Economy and Development Planning; Ministry of Territorial Planning; Ministry of Production, Irrigation and Agricultural Equipment; Ministry of Livestock and Animal Production; Ministry of Finance and Budget; Ministry of Public Service of Employment and Social Dialogue; Ministry of Public Health; Ministry of Tourism Development, Culture and Handicrafts; Ministry of Territorial Administration; Ministry of Mines, Industrial, Commercial Development and Promotion of the Private Sector; Ministry of Women, Protection of Early Childhood and National Solidarity; Ministry delegated to the Presidency of the Republic in charge of national defense, security of veterans and war victims; the Ministry of Infrastructure, Transport and Connectivity; and the MEEP's Coordination Unit of Projects and Programs ("Project Steering Committee").

8. **To this end, the Recipient shall ensure that the Project Steering Committee is responsible for strategic guidance and oversight** of the Project's implementation, including inter alia approval of the Annual Work Plans and Budgets.

9. **Financial Management.** Support will include the provision of training in the World Bank's financial management and disbursement guidelines and semi-annual reviews of the Project financial management system, including accounting, reporting, and internal controls, especially in view of the planned connection to the Integrated Financial Management Information System (within two months of effectiveness). The current financial management (FM) staffing arrangement under ALBIÄ PIU will be reinforced to implement the Project through the recruitment of a Project Financial Management Specialist (FMS) to oversee the Project's financial operations and an internal auditor. The work-program of the Internal Audit Unit will be revised within three months after the Project effectiveness to take into consideration the new Project specificities. The team will have overall FM responsibility for budgeting, accounting, reporting, disbursement, internal control and auditing.

10. FM Implementation support missions will be consistent with a risk-based approach and will involve a collaborative approach with the Project team. A first implementation support mission will be performed six months after Project effectiveness. Afterwards, the missions will be scheduled by using the risk based approach model and will include the following: (i) monitoring of the financial management arrangements during the supervision process at intervals determined by the risk rating assigned to the overall FM Assessment at entry and subsequently during Implementation (through the ISR); (ii) integrated fiduciary review on key contracts; (iii) review the Interim Financial Reports (IFRs); (iv) review the audit reports and management letters from the external auditors and follow-up on material accountability issues by engaging with the task team leader, client, and/or auditors; the quality of the audit (internal and external) also is to be monitored closely to ensure that it covers all relevant aspects and provide enough confidence on the appropriate use of funds by recipients; (v) physical supervision on the ground; and (vi) assistance to build or maintain appropriate financial management capacity.

11. **Procurement.** Procurement under the proposed Project will be carried out in accordance with the World Bank's Procurement Regulations for IPF Borrowers: Procurement in Investment Project Financing, Goods, Works, Non-Consulting, and Consulting Services, dated July 1, 2016 revised November 2017; and Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants, revised as of July 1, 2016; and the provisions stipulated in the Legal Agreement. The Regulations offer opportunities to tailor procurement activities to meet the operational needs under the Project and to deliver the right results. The Regulations are guided by the core procurement principles of value for money, economy, integrity, fit for purpose, efficiency, transparency, and fairness. Procurement requirements should be simple and need to remain flexible and adaptable to the volatile context of this Project, security concerns affecting some parts of the country where the Project will be implemented. The main procurement activities under this Project would include: (i) labor intensive, small-scale infrastructure rehabilitation and construction, provided through the contracting of private sector construction companies and job creation/income generation opportunities for beneficiaries through subprojects in water, sanitation and hygiene, and other commercial and economic infrastructure, agriculture and community centers; (ii) subprojects to be implemented through a contractual arrangement and grant provision from the World Bank to the Project Implementing Unit and contracting of local agro-pastoral suppliers; NGO/Community Based Organizations will assist with the distribution of equipment, tools, inputs and the monitoring of maintenance by beneficiaries; (iii) capacity building of local and regional authorities (municipal councils, regional councils) and central government authorities to strengthen their ability to manage monitoring and evaluation processes to inform future decision making; and (iv) strengthening the capacity of the Project Steering Committee for overall Project coordination; and the ALBIÄ PIU for Project management, coordination,

monitoring and evaluation, including: fiduciary (i.e. financial and procurement management), environmental and social assessments, preparation of Project reports, and monitoring and evaluation.

12. **Project Procurement Strategy for Development (PPSD)** was prepared including the Procurement Plan (PP) resulting from the PPSD. During implementation, the PP will be updated at least annually or as required to reflect the actual work program, implementation needs and improvements in institutional capacity. The Project will use Systematic Tracking of Exchanges in Procurement (STEP), a planning and tracking system, which will provide data on procurement activities, establish benchmarks, monitor delays, and measure procurement performance. Summaries of PPSDs will be attached in Annex 3 upon finalization of PPSD.

13. **Assessment of the Agencies' s Capacity to Implement Procurement.** Procurement assessments were carried out during the preparation of the project. The detailed assessment according to the implementing agencies is provided in annex 3. The overall procurement risk under this project is High. The main risks identified are the following:

(a) Staff involved in the project may not have enough knowledge of the NPF and/or there is a risk of confusing the NPF with former Procurement and Consultant guidelines.
(b) Procurement staff with the experience required to effectively implement procurement actions on time and in line with World Bank procurement policies and procedures are insufficient.
(c) Inadequate communication and interaction between beneficiaries and the PIU may lead to delays in procurement and poor cost projections.
(d) Administrative routines may result in procurement delays with the potential to affect project implementation.
(e) The procurement in fragile areas with few bidders can restrict competition and possibly increase prices and collusion risks.
(f) Insufficient capacity can lead to poor contract management and administration of big contracts.
(g) The poor filing of documents may lead to loss of documents.

14. Overall, all these risks can cause mis-procurement, possible delays in evaluation of bids, and technical proposals leading to implementation delays, poor quality of contract deliverables, and reputational risks to the World Bank and the project.

15. After the proposed mitigation measures as detailed in the following paragraphs, the procurement is **substantial**. For each designated implementing agency, these measures include the following:

(a) Hiring, on a competitive basis, a procurement specialist who is experienced and familiar with World Bank procurement procedures and policies, to be located in the Agency and/or NGO. If this requirement is not met before effectiveness of the project, the procurement specialist in the PIU supporting the PPA will support the procurement activities until the procurement specialist for the new PIU is recruited.
(b) Nominate one borrower staff to be trained, coached continuously by the Procurement specialist, in order to be empowered onto procurement office responsibilities, and promote knowledge transfer;
(c) Training all procurement staff involved on the NPF.
(d) Developing a manual of procedures (administration, finance, and accounting) to clarify roles for each team member involved in the procurement process and define the maximum delay for each procurement stage, specifically with regard to review and approval systems, and the signing of

contracts (see annex 3 for additional and detailed mitigation measures according to the country/implementing agency).

(e) Developing contract management plans for prior review contracts.

(f) Transfer the major risks (identified in the Procurement Assessment and Monitoring System (PRAMS) exercise) to a day-to-day monitoring matrix and monitor it through project implementation monthly meetings with the Client during the first two years of the Project, to make sure things are on track;

(g) Improving the filing system at the newly created PIU level to ensure compliance with the World Bank procurement filing manual.

16. **Special Considerations:** As a large part of the project intervention area is affected by the insecurity and fragility situation, the project will trigger on case by case basis, the paragraph 12 of the Policy for Investment Project Financing in order to apply flexibilities and simplification to facilitate procurement implementation. These procurement arrangements will draw on the Bank Guidance on Procurement Procedures in Situations of Urgent need of Assistance or Capacity Constraints issued on March 2019. These measures include the use of Borrower's national procurement provided the arrangements are consistent with the Bank's Core Procurement Principles. The simplified procurement arrangements will be detailed on the procurement section of the PIM. The PPSD and the derived Procurement Plan will identify up front specific contracts and propose the most flexible procurement arrangements.

17. **Procurement documents.** For international competitive procurement for goods, non-consulting services, and consulting services, the borrower shall use the World Bank's Standard Procurement Documents with minimum changes, acceptable to the World Bank, as necessary to address any project specific conditions.

18. **Procurement information and documentation - filing and database.** Procurement information will be recorded and reported as follows:

(a) Complete procurement documentation for each contract, including bidding documents, advertisements, bids received, bid evaluations, letters of acceptance, contract agreements, securities, and related correspondence will be maintained at the level of the Ministry in an orderly manner, readily available for audit.

(b) Contract award information will be promptly recorded and contract rosters, as agreed, will be maintained.

(c) Comprehensive quarterly reports indicating (i) revised cost estimates, where applicable, for each contract; (ii) status of ongoing procurement, including a comparison of originally planned and actual dates of the procurement actions, preparation of bidding documents, advertising, bidding, evaluation, contract award, and completion time for each contract; and (iii) updated Procurement Plans, including revised dates, where applicable, for all procurement actions.

19. **Advertising Procedure. General Procurement Notice**, **Specific Procurement Notices, Requests for Expression of Interest, and results of the evaluation and contracts award** should be published in accordance with advertising provisions in the Procurement Regulations.

20. For request for **bids** and request for proposals that involve international bidders/consultants, the contract awards shall be published in the United Nations Development Business in line with the provisions of the Procurement Regulations. For works and goods, the information to publish shall specify

(a) The name of each bidder who submitted a bid;

(b) Bid prices as read out at bid opening;

(c) The name and evaluated prices of each bid that was evaluated;
(d) The names of bidders whose bids were rejected and the reasons for their rejection; and
(e) The name of the winning bidder and the price it offered, as well as the duration and summary scope of the contract awarded.

21. For consultants, the following information must be published:
(a) Names of all consultants who submitted proposals.
(b) Technical points assigned to each consultant.
(c) Evaluated prices of each consultant.
(d) Final point ranking of the consultants.
(e) The name of the winning consultant and the price, duration, and summary scope of the contract. The same information will be sent to all consultants who submitted proposals.

22. For other contracts, the information should be published in national/regional gazette periodically (at least, quarterly) and in the format of a summarized table covering the previous period with the following information: (a) the name of the bidder/consultant to whom the contract was awarded; (b) the price;(c) duration; and (d) scope of the contract.

23. **Training, workshops, study tours and conferences**. The training (including training material and support), workshops, and conferences attendance based on individual needs, as well as group requirements, on-the-job training, will be carried out based on an approved annual training and workshop/conference plan that would identify the general framework of training activities for the year. A detailed plan and terms of reference providing the nature of training/workshop, number of trainees/participants, duration, staff months, timing, and estimated cost will be submitted to IDA for review and approval before initiating the process. The appropriate methods of selection will be derived from the detailed schedule. After the training, each beneficiary will be requested to submit a brief report indicating what skills have been acquired and how these skills will contribute to enhance his/her performance and contribute to the attainment of the PDO. Reports by the trainees, including completion certificate/diploma upon completion of training, shall be provided to the Project Coordinator, will be kept as parts of the records, and will be shared with the World Bank if required.

24. **Procurement Manual.** Procurement arrangements, roles and responsibilities, methods, and requirements for carrying out procurement shall be elaborated in detail in the Procurement Manual, which will be a section of the PIM. The fragility context and the capacity constraints will be considered, and simplified procurement arrangements will be designed accordingly. The PIM shall be prepared by the Recipient and agreed with the World Bank before the effectiveness date.

25. **Operating costs**. Operating costs financed by the project are incremental expenses, incurred by the PIU or its regional representations, based on the Annual Work Plans and Budgets as approved by the Association, on account of project implementation, management, and monitoring and evaluation, including office supplies, bank charges, vehicles operation, maintenance and insurance, maintenance of equipment and buildings, communication costs, travel and supervision costs (that is, transport, accommodation, and per diem), the costs related to utilities and office space rental and salaries of contracted and temporary staff. They will be procured using the procurement procedures specified in the project's manual of administrative, financial, accounting and procurement procedures accepted and approved by the World Bank.

ANNEX 2: FM Assessment

FM and Disbursement Arrangements

1. In line with the Financial Management Manual for World Bank IPF Operations (effective on March 1, 2010 and revised on February 10, 2017), a financial management assessment was conducted within the MEEP. It was agreed that a new PIU will be created and embedded at MEEP to have the fiduciary responsibility of the project. The new PIU will manage both the technical and the fiduciary aspects of the proposed project. The assessment of the FM capacity of MEEP was conducted by a World Bank FMS. The objectives of the assessment were to determine: (a) whether this entity has adequate FM arrangements in place (planning, budgeting, accounting, internal control, funds flow, financial reporting, and auditing arrangements) to ensure that project funds will be used in an efficient and economical way for the purpose they are intended; (b) that project financial reports will be prepared in an accurate, reliable and timely manner; and (c) that the project's assets will be safeguarded.

2. Currently MEEP doesn't have any experience with World Bank financed projects and faces capacity constraints. As a result of the identified FM capacity constraints, the following actions need to be completed to ensure adequate FM arrangements for all aspects of the project: (a) preparing and adopting PIM by the project effectiveness date; (b) adopting the unified FM procedures manual in use for all World Bank funded projects in Chad (the FM procedures manual, as well as the PIM will include internal controls, budget process, assets safeguards, and description of roles and responsibilities of all stakeholders); (c) recruit a FMS, an internal auditor, an accountant, and an accounting assistant, by the project effectiveness. The PIU will also need to purchase an accounting software to reflect the specificities of the project, within three months after the project effectiveness. An external auditor will be recruited based on TOR acceptable to the World Bank, within five months after project effectiveness.

3. Two MDODs are expected to be involved in the implementation of some project's activities (sub-components 1.1.i and 2.2). The review of Sahara Conservation Fund and SOS SAHEL France financial management capacities was very positive. Both entities have: (a) a well-established structure for their financial management function, (b) detailed written administrative and financial management procedures, a computerized financial management system capable of recording and reporting separately project funds with a good level of detail, and (c) their financial statements regularly audited by independent auditors.

4. Given that the MEEP will be reinforced by creating a new properly staffed PIU and taking into account the mitigation measures specified in this annex 2, the FM residual risk for MEEP is substantial.

Budgeting and Planning

5. **The budget process** (preparation, adoption, execution and revision,) will be clearly defined in the budget section of the unified FM procedures manual that will be adapted to the project's specificities. The budget will be reviewed and adopted by the project Steering Committees (SC) before the beginning of the year i.e. not later than November 30 each year to enable it to be approved and included in the national finance law as appropriate. Annual budgets adopted by the SC will be submitted to the World Bank's non-objection before implementation. Budgets should be regularly monitored at all levels. The approved annual budget of the project should be at least quarterly monitored against actual expenditure. The budget variances will be adequately explained and justified through the semi-annual IFRs.

Accounting and Staffing

6. **Accounting policies and procedures:** The current OHADA accounting standards (SYSCOHADA) in use in West and Central African Francophone countries will apply to the project. Project's accounts will be maintained on an accrual basis, supported with appropriate records and procedures to track commitments and to safeguard assets. Annual financial statements will be prepared by MEEP PIU, in accordance with the SYSCOHADA and World Bank requirements. Accounting and control procedures will be documented in the PIM before project effectiveness.

7. **Accounting staff**: An FMS, an accountant to be based in the project area in Djedaa, and an accounting assistant to be based in the project office in Ndjamena, will be recruited on a competitive basis by the project effectiveness date. Hence, the required FM skills should be in place before the project effectiveness.

8. **Accounting software**: For the needs of recording, managing the proposed project, and reporting on the use of the funds in a timely manner, an appropriate accounting software with specifications acceptable to the World Bank will be procured and installed by MEEP PIU within three months after project effectiveness. The accounting software should be capable of preparing withdrawal applications and periodic financial reports (IFRs and annual financial statements). The FMS will be trained on using the accounting system. The team will keep records on Excel spreadsheet until the accounting system is acquired and installed.

Internal Controls and Internal Audit

9. **Internal controls systems**: The PIM (including unified FM procedures for all World Bank funded projects in Chad) will be prepared by MEEP PIU and approved by the World Bank by the project effectiveness date. The PIM and the FM manual will provide guidance on project implementation arrangements, and notably on the roles and responsibilities of the MEEP PIU staff, as well as on the technical, administrative, financial and accounting procedures, procurement arrangements, and safeguard procedures adopted by the implementing agency, in accordance with the respective national laws and regulations. MEEP PIU, will be responsible for maintaining all necessary controls to ensure: (a) that project funds are used only for the intended purposes in an efficient and economical way; (ii) the preparation of accurate, reliable, and timely periodic financial reports; and (iii) that the project's assets are adequately safeguarded.

10. In addition, the World Bank will provide adequate training in disbursement and FM procedures to the project's FM team. All these measures aim at further enhancing the internal control.

11. **Internal auditing:** To provide reasonable assurance on the project transactions, an internal auditor will be recruited by MEEP PIU, by the project effectiveness date. The internal auditor will develop audit charts and annual audit plans using a risk-based approach. He/she will be responsible to closing monitoring the implementation of the action plans aimed at addressing weaknesses identified during supervision and audit missions. The project's internal auditor will also focus on the audit of the activities implemented by the MDOD.

Funds Flow and Disbursement Arrangements

12. **Disbursements arrangements:** The disbursement methods that would be used under this project will be based on the Disbursement Guidelines for Investment Project Financing, dated February 2017. Upon effectiveness, this project will follow the transaction-based disbursement method. Direct payment, reimbursement, and special commitment methods will be available to the project and might apply as appropriate. The minimum value of the direct payments, reimbursements and special commitments will be 20 percent of the

Designated Account (DA) ceiling. Further details will be included in the disbursement procedures described in the Disbursement and Financial Information Letter (DFIL) and the unified FM procedures manual.

13. **Banking arrangements for MEEP PIU:** MEEP, through its PIU will open one segregated DA denominated in XAF in a commercial bank on terms and conditions acceptable to the World Bank. The project's DA will function under the co-signature of the project Coordinator and the project FMS.

14. **Banking arrangements for MDODs**: For eligible expenditures under sub-components 1.1. and 2.2, each MDOD will open one segregated Project Account denominated in XAF in a commercial bank on terms and conditions acceptable to the World Bank. Further details about functioning of the MDOD bank accounts will be included in FM procedures manual, as well as in the Financing Agreements to be signed with the MDOD.

15. **Banking arrangements for the Office of Ndjamena**: MEEP will not open any functional account for the eligible expenditure to be incurred by the project's office based in Ndjamena. When needed, the MEEP PIU will make funds available to the office of Ndjamena in the branch of the DA in Ndjamena. Further details about disbursements from the project's DA to the office of Ndjamena will be included in the FM procedures manual.

16. **Flow of funds arrangements for DA:** Funds flow arrangements for the project (through the DA) and regional bank accounts are as follows:

(a) IDA will make an initial advance disbursement into the project DA upon receiving a withdrawal application from the MEEP PIU;
(b) Replenishment of funds from IDA to the DA will be made upon evidence of satisfactory utilization of the advance, reflected in SOEs and/or on full documentation for payments above SOEs thresholds. Replenishment applications will be required to be submitted regularly on a monthly basis.

17. **Flow of funds arrangements for MDOD:** Funds flow arrangements for the project account to be managed by the MDOD account are as follows:

(a) Following the signing of the Financing Agreement between the MDOD and the Government of Chad through MEEP, SCF and the specialized entity will issue an invoice for MEEP PIU to transfer the funds to SCF and the specialized entity, in accordance with the payment schedule set forth in the Financing Agreement;
(b) The General Director of MEEP will authorize and MEEP PIU will make the payment by wire transfer of XAF to SCF's account within 10 working days of receiving the invoices submitted by the MDOD, and notify MDOD on the same day the wire transfer is made;
(c) Upon receipt of the full amount set out in the invoice referred to in the paragraph above, the MDOD will initiate the payment of the eligible expenditure covered by the invoice under sub-components 1.1 and 2.2 of the project.

18. Figure 2.1 depicts the funds flow mechanism that will be deployed for the project. Table 2.1 sets out the expenditure categories to be financed by the grant. This table considers the prevailing Country Financing Parameter for Chad in setting out the financing levels. In accordance with World Bank standard procurement requirements, contracts will continue to be approved 'all taxes included' for local expenditures.

Figure 2.1. Flow of Funds

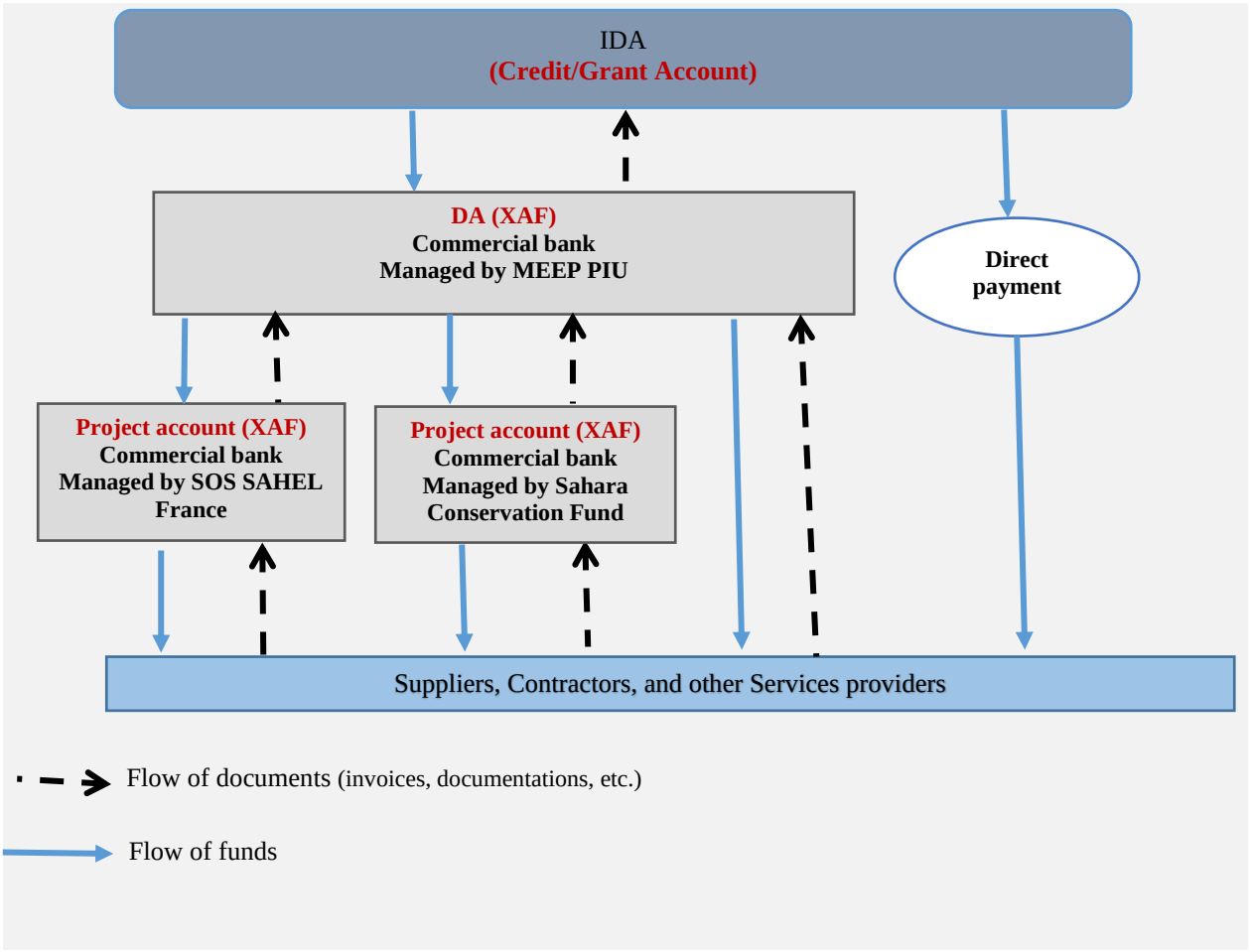


Table 2.1 Disbursements per Expenditure Category

IDA

Category	Amount of the Financing Allocated (in SDR)	Percentage of Expenditures to be Financed (inclusive of Taxes)
(1) Goods, works, non-consulting services, and consulting services under Parts 2.1 and 2.3 of the Project	14,100,100	100%
(2) Goods, works, non-consulting services, and consulting services under Part 1.1(a) of the Project	3,480,600	100%
(3) Goods, works, non-consulting services, and consulting services under Parts 1.1(b), 1.2, and 3 of the Project	7,075,600	100%
(4) Subprojects under Parts 2.2(a)(i), 2.2(a)(ii), and 2.2(a)(iii) of the Project	9,178,500	100%
(5) Subprojects under Part 2.2(b) of the Project	1,932,500	100%
(6) Refund of Preparation Advance	832,700	
(7) Emergency Expenditures under Part 4 of the Project	0	100%
TOTAL ALLOCATED AMOUNT	36,600,000	

GEF

Category	Amount of the Financing Allocated (in US$)	Percentage of Expenditures to be Financed (inclusive of Taxes)
(1) Goods, works, non-consulting services, and consulting services under Part 1.1(a) of the Project	1,496,000	100%
(2) Goods, works, non-consulting services, and consulting services under Parts 1.1(b), 1.2, and 3 of the Project	1,819,986	100%
(3) Subprojects under Part 2.2(a)(iv) of the Project	498,184	100%
(4) Subprojects under Part 2.2(b) of the Project	636,000	100%
TOTAL ALLOCATED AMOUNT	4,450,170	

19. If ineligible expenditures are found to have been made from the DA, the Recipient will be obligated to refund the amount in question, and IDA will have the right to suspend disbursement of funds if reporting requirements are not complied with as provided for in the Financing Agreement. The World Bank will periodically assess the adequacy of the FM systems and this will form the basis of any change in disbursement methods. The authorized signatories will sign and submit withdrawal applications electronically through the World Bank's Client Connection website.

20. Further details about disbursements to the project will be included in the disbursement procedures described in the DFIL and the financial procedures included in the PIM.

Financial Reporting and Monitoring

21. For this project, MEEP PIU will prepare consolidated semi-annual unaudited IFRs which will be submitted to the World Bank within forty-five (45) days of the end of the semester. The two MDOD will be required to submit to the MEEP PIU the monthly reports, along with their payment requests. The format and the content, consistent with the World Bank's standards, have been agreed during project negotiations. At a minimum, the financial report will include: (a) a statement of sources and uses of funds and opening and closing balances for the semester

and cumulative; (b) a statement of uses of fund that shows actual expenditures appropriately classified by main project activities (categories, sub-components) including comparison with budget for the semester and cumulative; (c) a statement on movements (inflows and outflows) of the project DA including opening and closing balances; (d) a statement of expenditure forecast for the next semester together with the cash requirement; (e) notes and explanations; and (f) other supporting schedules and documents.

22. In addition, and in compliance with IDA requirements, MEEP PIU will produce annual project financial statements (PFS) similar to the contents of the semi-annual IFRs. These financial statements will comply with the accounting system implemented in the sub-region (SYSCOHADA) and will be submitted for audit within three months after the end of the recipient's fiscal year.

External Audit

23. The annual financial statements and semi-annual IFRs prepared by MEEP PIU as well as the internal control system will be subject to an annual audit by a reputable and independent auditing firm recruited based on TOR satisfactory to IDA. The scope of the audit will be tailored to the project's specific risks in accordance with World Bank requirements and will be agreed upon with the government. In particular, the independent auditor will audit the use of all funds flowing from the DA to the ultimate beneficiaries. The project will comply with the World Bank's access to information and disclosure policies by making all disclosable audit reports publicly available promptly after receiving them. A single audit opinion, in compliance with International Standards on Auditing, will be issued and will cover all project receipts, payments, and accounts. The audited financial statements, along with the auditor's report and management letter (incorporating management's comments) covering any identified internal control and accounting system weaknesses, will be submitted to World Bank within six months of the end of each Recipient's fiscal year. The Financing Agreements signed with the MDOD will specify that the MDODs are required to submit their entities audit report to the MEEP PIU and the World Bank.

24. In order to ensure the timely carrying out of the audits referred to in above paragraph, the Recipient, through MEEP PIU, shall recruit not later than five months after the Effective Date, the external auditor pursuant to TOR satisfactory to the World Bank.

25. The audit reports that will be submitted by MEEP through its PIU with due dates for submission are:

Table 2.2 Audit Reports

Audit Report	Due Date
Project Financial Statements (PFS) and management letter to be submitted by MEEP through its PIU.	Submitted within **six** (6) months after the end of each financial year.

Financial Management Action Plan

26. Following on the FM Assessment of MEEP which identified some weaknesses and areas of improvement, the below FM Management Action Plan is recommended as a mean of mitigating risks and helping to improve the fiduciary environment during implementation.

Table 2.3 Financial Management Action Plan

	Activity	Timeline	Responsibility
1.	Establish MEEP PIU, including composition and organization satisfactory to World Bank.	By the project effectiveness	• MEEP
2.	Recruit based on ToRs satisfactory to World Bank (i) one Financial Management Specialist, (ii) on Internal Auditor, (ii) one Accountant, and (iv) one Accounting Assistant	By the project effectiveness	• MEEP
3.	Elaborate and adopt a PIM in form and content satisfactory to World Bank.	By the project effectiveness	• MEEP
4.	Agree on the format, content, and frequency of the IFR.	This has been **done** during negotiations. IFR will be sent to the World Bank every six months	• MEEP/ World Bank
5.	Agree on the TOR of the independent auditor	TOR templates have been shared with the Government during negotiations	• MEEP/ World Bank
6.	Adapt and adopt the unified FM procedures manual in use for the overall World Bank funded projects implemented in Chad, to reflect the specificities of the proposed project.	By the project effectiveness	• MEEP
7.	Acquire and install a “multi-project” computerized accounting system to fit project needs and generate useful information and financial statements.	Within three months following effectiveness	• MEEP
8.	Recruit an independent auditor, with terms of reference and qualifications acceptable to the Association.	Within five months following effectiveness	• MEEP

Conclusions of the FM Assessment

27. The overall residual FM risk is considered substantial. The proposed financial management arrangements for this project are considered adequate, subject to the implementation of the mitigation measures, and meet the Bank’s minimum requirements under Bank Policy and Procedure for IPF operations.

Implementation Support and Supervision Plan

28. FM implementation support intensity and frequency will be in line with risk-based approach and will involve a collaborative approach with the entire Task Team. A first implementation support mission will be performed six months after the project effectiveness. Afterwards, the missions will be scheduled by using the risk based approach model and will include the following diligences: (a) monitoring the financial management arrangements during the supervision at intervals determined by the risk rating assigned to the overall FM assessment at entry and subsequently during project implementation (through the ISR); (b) undertaking an integrated fiduciary review on key contracts, (c) reviewing the IFRs; (iv) reviewing the audit reports and management letters from the external auditors and following up on material accountability issues by engaging with the task team leader, Client, and/or Auditors. The quality of the audit (internal and external) will also be monitored closely to cover all relevant aspects and provide enough confidence on the appropriate use of funds by the recipient; (d) undertaking physical supervision on the ground directly or using GEMS technology; and (e) providing assistance to build and maintain appropriate financial management capacity and efficient internal control system.

ANNEX 3: Procurement Assessment

1. **Procurement institutional arrangement.** A PIU will be created and placed under the supervision of the MEEP. It will have the overall responsibility for project oversight and coordination and will be composed of twelve persons, ten of whom will be based in-site in the project area (Djedaa), and two in Ndjamena. The staff based in the project area will be composed of (a) the coordinator, (b) the procurement specialist, (c) the FMS, (d) the accounting specialist, (e) the monitoring and evaluation specialist, (f) the environmental specialist, (g) the social development and gender specialist, (h) the water specialist, (i) the internal auditor and (j) the communication/citizen engagement specialist. The conservation specialist and the administrative assistant will be based in Ndjamena. The ALBIÄ PIU will be responsible for the implementation of the all fiduciary activities comprising procurement and financial management. The ALBIÄ PIU will also select two international entities and procurement type will be confirmed in a timely manner.

2. **Assessment of the ALBIÄ PIU to implement procurement.** An assessment of the capacity of the MEEP to implement procurement activities of the project was carried out. The assessment reviewed the organizational structure for implementing the project, the ALBIÄ PIU to be put in place, and the interaction between the different stakeholders and/or NGO involved in the project.

3. **The assessment revealed** that (a) MEEP has no experience in implementing World Bank financed projects through PIUs reporting to it. There is a need to put in place a dedicated PIU with technical and fiduciary staff including procurement. The ProPAD PIU is currently managing procurement activities of the PPA until the creation and the staffing of the ALBIÄ PIU.

4. **The key risks identified** for procurement are as follows: (a) staff involved in the project may not have sufficient knowledge of the NPF and/or there is a risk of confusion with previous sets of guidelines, (b) there is lack of proficient procurement staff to implement actions on time and in line with the NPF, (c) inadequate communication and interaction between the beneficiaries and the ALBIÄ PIU may lead to delays in procurement processes and poor cost estimations, (d) administrative routines may increase delays in the procurement processes and affect project implementation, (e) procurement in a specialized market in fragile area with few bidders can restrict competition and possibly increase prices and collusion risks, (f) there may be poor management and administration of big contracts, and (g) poor filing of documents may lead to loss of documents. Overall, all these risks can cause mis-procurement, possible delays in evaluation of bids, and technical proposals leading to implementation delays, poor quality of contract deliverables, and reputational risks to the World Bank and the Project

5. The residual risk will be Substantial after adopting the agreed mitigation action plan summarized in Table 3.1 below.

Table 3.1. Mitigation Action Plan (for MEEP/PIU)

1. Staff involved in the project who may not have enough knowledge of the NPF and/or risk of confusion with the former guidelines	Hire, on a competitive basis, a procurement specialist who is experienced and familiar with World Bank procurement procedures and policies	MEEP	Before project effectiveness
	Nominate one borrower staff to be trained, coached continuously by the Procurement specialist, in order to be empowered onto procurement office responsibilities, and promote knowledge transfer;	MEEP ALBIÄ PUI/ProPAD	Three months after effectiveness
	Organize workshop sessions on the NPF to train all staff involved in the procurement of the project	ALBIÄ PIU/WBG	Two months after effectiveness
	Continuous hands-on trainings on the NPF for identified key staff	ALBIÄ PIU/World Bank	During the life of the project
2. Inadequate communication and interaction between the beneficiaries and the PIU which may lead to delays in procurement processes and poor estimation of the costs	Develop a procurement section in the PIM to clarify the role of each team member involved in the project procurement process and the timeline for each procurement stage, specifically about the review, approval system, and signature of contracts.	MEEP/ ALBIÄ -PIU	Before effectiveness
	Exercise quality control on all aspects of the procurement process, including developing TORs, technical specifications, bidding documents, proposals, request of quotations, evaluation, and award.	ALBIÄ PIU	During the life of the project
3. Internal administrative procedures may increase delays in the procurement processes and affect project implementation	Monitor, on regular basis, the Procurement Plan's implementation and set up a close follow-up in relation with beneficiaries to ensure that appropriate actions are taken on time	ALBIÄ PIU	During the life of the project
	Transfer the major risks (identified in the PRAMS exercise) to a day-to-day monitoring matrix and monitor it through project implementation monthly meetings with the Client during the first two years of the Project, to make sure things are on track;	ALBIÄ PIU/WBG	During the life of the Project
4. Poor contract management and administration of big contracts	Develop contract management plans for prior review	ALBIÄ PIU	During the life of the project
5. Poor filing which can lead to loss of documents	Improve the filing system at the PIU level to ensure compliance with World Bank procurement filing manual.	ALBIÄ PIU/Procurement specialist	During the life of the project

6. **Assessment of the Project Implementing Agencies to Implement Procurement.** During the preparation of this project the assessment of the Project implementing Agencies was carried out. The procurement activities for the project will be executed by the respective Project Implementing agencies comprising (a) the PIU anchored in the MEEP with the technical assistance of consultants or NGO, (b) the Sahara Conservation Fund as MDOD under sub-component 1.1.i of the Project and (c) the SOS SAHEL France as MDOD under sub-component 2.2 of the Project. The PIU will carry out the following activities: (a) managing overall procurement activities and ensuring compliance with the procurement process described in the relevant manuals; (b) ensuring compliance of bidding documents, draft requests for proposals, evaluation reports, and contracts with World Bank procedures; (c) preparing and updating the Procurement Plan; (d) monitoring the implementation of procurement activities; (e)

developing procurement reports; and (f) seeking and obtaining approval of internal designated entities and then of IDA on procurement documents, as required. The PIU will participate in the process of all procurement activities and will notably support the following activities: (a) preparation of TORs and the bidding documents; (b) preparation of evaluation reports and contracts related with World Bank procedures; and (c) participation in procurement commission activities and all related meetings.

Detailed assessment of the capacity of Sahara Conservation Fund (SCF) and SOS SAHEL France to implement procurement activities

7. **An assessment of the capacity of the SCF and SOS SAHEL France to implement procurement activities** of the Project was carried out. The assessment reviewed their organizational structure to implement the project, the procedures manual, the tender committee put in place, and the interaction between the different persons involved in procurement activities.

8. The main weaknesses identified during the assessment are (a) the procurement staff of SCF and SOS SAHEL France have limited experience in World Bank Procurement Regulations for IPF, (b) the SCF tender committee is not trained in the World Bank Procurement Regulations for IPF, (c) the procurement section on SCF and SOS SAHEL France procedures manual does not comply with the World Bank Procurement Regulations; (d) the procurement thresholds are low, and (e) filing procurement documentation is of poor quality. To address the above risk, the following mitigation measures should be taken: (a) update the procurement section of the SCF and SOS SAHEL France procedures manual in form and substance acceptable to the World Bank and (b) provide training to the procurement staff to strengthen their knowledge on the World Bank Procurement Regulations.

9. The residual risk will be **Substantial** after adopting the agreed mitigation action plan summarized in table 3.2.

Table 3.2. Mitigation Action Plan (SCF and SOS SAHEL France)

Risk	Action	Responsibility	Date
1. The procurement staff of SCF and SOS SAHEL France have limited experience in WB Procurement Regulations for IPF	Organize workshop sessions on the NPF to train all staff involved in the procurement of the project.	SCF/SOS SAHEL France/World Bank Team	Two months after effectiveness
2. The SCF tender committee is not trained in the WB Procurement Regulations for IPF,	Continuous hands-on trainings on the NPF for identified key staff.	SCF/SOS SAHEL France Tenders Committees/ WB	During the life of the project
3. The procurement section on SCF and SOS SAHEL France procedures manual does not comply with the WB Procurement Regulations.	Update the procurement section of the SCF and SOS SAHEL France procedures manual in form and substance acceptable to the WB	SCF/SOS SAHEL France/ WB team	Within a few months after effectiveness
4. The procurement thresholds are low for international competitive procurement processes	Increase the procurement threshold for international competitive procurement and reflected in Procedures manual	SOS SAHEL France/Procurement Specialist of PIU	After project effectiveness
5. Filing procurement documentation is of poor quality	Improve the filing system at the PIU level to ensure compliance with World Bank procurement filing manual.	SCF/Procurement Specialist of PIU	During the life of Project

10. **Frequency of procurement reviews and implementation support.** The IDA prior and post reviews will be carried out based on thresholds indicated in the table below. IDA will conduct six-monthly implementation support missions and annual post procurement reviews. The standard post procurement reviews by the World Bank should cover at least 20 percent of contracts subject to post review. Post reviews consist of reviewing technical, financial, and procurement reports on project procurement actions by the World Bank staff or consultants selected and hired by the World Bank. Project supervision missions shall include a World Bank procurement specialist or a specialized consultant. IDA may also conduct an independent procurement review at any time until two years after the closing date of the project.

11. **Procurement prior review.** Table 3.3 summarizes the procurement prior review thresholds that can evolve according to the variation of procurement risk during the life of the Project.

Table 3.3 Procurement Prior Review Thresholds (US$, million)

Type of Procurement	High Risk	Substantial risk	Moderate Risk	Low Risk
Works	5.0	10.0	15.0	20.0
Goods, information technology, and non-consulting services	1.5	2.0	4.0	6.0
Consulting firms	0.5	1.0	2.0	4.0
Individual consultants	0.2	0.3	0.4	0.5

12. Contract management and administration. For all prior review contracts, contract management plans (in line with the provisions of Annex XI of the World Bank_Procurement_Regulations~~)~~ will be developed during contracts creation and completed at the time the contracts are signed.

ANNEX 4: OUADI RIME-OUADI ACHIM RESERVE, CHAD

Background

1. Chad's OROA was established by Presidential decree on the 10 of May 1969. Located in central Chad's sahel and sub-desert zones, the reserve covers 77,950 km^2, making it the largest protected area in the country and one of the largest in Africa. The reserve was established to protect the Sahel's increasingly threatened wildlife, including iconic species such as the addax (Addax nasomaculatus), scimitar-horned oryx (Oryx dama), dama gazelle (Nanger dama), cheetah (Acinonyx jubatus) and ostrich (Struthio camelus). The reserve's unusually large size, fully 6 percent of Chad's surface area, was deliberately chosen to create a biological unit big enough to conserve and develop the area's largely migratory wildlife and to allow it to live and breed in security. The reserve's name springs from two of its major ouadi systems, the Ouadi Rimé in the south and the Ouadi Achim in the north.

2. As an IUCN Category IV protected area76, the national laws at the time prohibited hunting and harassment of wildlife and the destruction of trees but allowed other forms of traditional land use, such as the use of grazing, dead wood, and traditional wells and waterholes. Scientific documents and reports of the time (Gillet 1965, 1969; Newby 1974, 1978) describe a reserve rich in wildlife and pasture, where offtake, including traditional poaching of the larger mammals, was largely in balance with productivity. And although development of the pastoral lands, through the digging of deep-water cement wells, was gaining speed, wildlife still had access to tens of thousands of square kilometers of pasture virtually uninhabited for large parts of the year, including the critically important hot season, when access to good grazing and shade is most important to the wildlife. It should be recalled, that outside of the relatively brief wet season, from June to September, the reserve is very largely waterless for most of the year. Average annual rainfall is in the order of 100-250 mm.

3. In the late 1970s and early 1980s much was to change as a result of the civil war in Chad and the invasion of the north by Libyan forces. Within a short period of time, much of the reserve's wildlife had been shot out, pushing species like the addax, oryx, dama gazelle and ostrich to the verge of extinction. What was little realized at the time was the importance of the role the reserve had played, not only in a Chadian context but internationally. When the oryx finally became extinct in the reserve in the late 1980s, it became fully Extinct in the Wild[77].

4. Following the post-war period, control and management of the reserve failed to be reasserted, something compacted by the lack of external support from the conservation agencies that had formerly provided funding to Chad's National Parks department (FAO, WWF, IUCN). By the mid-1990s, uncontrolled hunting, including by the armed forces, and unsustainable offtake by hunting parties from the Gulf states had reduced wildlife populations dramatically[78]. The oryx, addax, ostrich and cheetah were long gone, and the dama gazelle was reduced to one tiny population of a few individuals.

5. On the development side, however, livestock development initiatives, largely focused on bringing water to hitherto waterless areas of prime grazing, were making huge inroads into the reserve's pastures, sparking a significant increase in livestock numbers and the accompanying impacts on the land (over grazing, trampling, desertification) and biodiversity (loss of prime grazing species, competition with livestock, eradication of large predators, opportunistic hunting).

[76] https://www.protectedplanet.net/ouadi-rime-ouadi-achim-faunal-reserve
[77] https://www.iucnredlist.org/search?query=Scimitar-horned%20Oryx&searchType=species
[78] *Association pour la protection de la Flore et de la Faune (*APPROCOF) – Association for Flora and Wildlife Protection

6. As a response to the adoption of a concerted action plan for the conservation of Sahelo-Saharan antelopes in Djerba, Tunisia, in 1998 (CMS 1998), the reserve benefitted from new interest and over the following decade a series of highly important and detailed technical reports were written[79]. Although underlining the disappearance of several of the reserve's former key species, the reports painted an optimistic picture. Despite high livestock numbers and some large areas of heavily over-grazed and damaged habitat, many areas of useful habitat remained with good wildlife resources, including dorcas gazelles and bustards, together with many smaller vertebrates and a rich bird fauna.

7. In 2008, Chad adopted a new law for forests, wildlife and fisheries (Loi n°14 / PR / 2008 portant regime des forets, de la faune et des ressources halieutiques), which was subsequently completed in 2014 by a specific decree for wildlife (Decret n°380 /PR/PM/MAE/2014 fixant les modalites d'application du regime de la faune). These were complemented by strong declarations by the Head of State in favor of wildlife and habitat conservation. This had an immediate and positive impact on wildlife and anti-poaching control.

8. Also, in 2008, SCF spearheaded efforts to develop a strategy for the reintroduction of the scimitar-horned oryx based on the numerous captive-bred animals that existed outside of Africa. Many of the founders of the world's captive bred oryx originated in Chad as a result of two commercial captures that took place in the 1960s[80]. In 2012, it was finally decided in collaboration with the Chadian authorities to focus oryx reintroduction efforts on the OROAGR[81]. In 2013, two feasibility missions were undertaken by SCF and the Zoological Society of London (ZSL) in association with Chad's wildlife services. And in 2014, funding for a full-blown project was acquired through the Environment Agency Abu Dhabi. In parallel to this, the Environment Agency Abu Dhabi also made funds available to Chad's Ministry of the Environment to assist with management of the reserve.

9. In March 2016, the first shipment of oryx arrived from Abu Dhabi. These 23 animals were successfully released into the wild in August of the same year. Since then, some 200 oryx have been cargoed into Chad and the wild population is now estimated to be approaching 260 animals. During all this time, only one oryx has been poached. In January 2020, a new phase of the oryx project began with the arrival in Chad of 15 addax, which have also been subsequently released into the wild. The reserve's partners are also actively engaged in restoration of the small but globally significant population of dama gazelles (about a third of all known animals in the wild) and the reintroduction of the North African ostrich.

10. The implementation of current programs (Oryx Phase II, POROA) in favor of the reserve builds on what is already successfully taking place to reintroduce the oryx, complementing it with much-needed work to conserve habitat, improve overall management of the reserve, and address the need for greater cooperation between and input from the communities and sectors vying for the reserve's resources. A major output will be a consensual reserve management plan. Current programs, however, cannot guarantee a sufficiently long enough timeframe to develop and implement the novel management and governance systems sought. Nor can they cover the reserve's needs in terms of infrastructure, vehicles, air support and capacity-building. Further significant engagement from the development partners is required.

11. There can be no doubt that the long-term survival of the reserve's wildlife and the integrity of its critical

[79] By Office National de la Chasse et de la Faune Sauvage (ONFCS) and Sahara Conservation Fund
[80] T. Gilbert; International Studbook for the Scimitar-horned oryx Oryx Dammah (twelfth ed.), Marwell Wildlife, Winchester (2017)
[81] Bemadjim, N. E., J. Newby, A. Desbiez, C. Lees, and P. Miller (Editors). 2012. Technical workshop on the reintroduction of scimitar-horned oryx to the Ouadi Rimé-Ouadi Achim Game Reserve, Chad. Sahara Conservation Fund & IUCN/SSC Conservation Breeding Specialist Group

habitats depend on finding solutions that reconcile pastoralism and biodiversity conservation. Given the extreme rarity of many of the wildlife species concerned, failure to conserve them in the reserve may well lead to their extinction globally. From the perspective of pastoral development, failure to manage the reserve's grazing resources and livestock numbers could also lead to catastrophic scenarios similar to those of the early 1970s and mid-1980s. It is in fact in everyone's interest that win-win solutions be found, especially under the added constraints of climate change and its largely unknown impacts on the Chadian Sahel.

Limits of the Reserve

12. When established in 1969, the boundary of the reserve was based largely on visible and tangible features, such as roadways, tracks and ouadi beds. Only one segment, connecting the Ouadi Rimé to the village of Salal, was defined using a hypothetical straight line. The original decree makes no mention of the length of the reserve's perimeter, but subsequent GIS-based studies show this to be about 1,442 km. The same GIS survey, based on a verification of the reserve's limits using the original decree and the maps of the time (IGN 1964-65), show the surface area of the reserve to be significantly higher than originally calculated (93,687 km^2 vs. 77,950 km^2).

13. Over the years, the roadways delimiting the reserve have undergone modification and modernization as traffic has increased and the ability of vehicles to negotiate difficult terrain improved. Also, new settlements have developed, and others used as waypoints in the official decree declined. A good example is the town of Kalait, which hardly existed when the reserve was established but today is an important town to the east of the old administrative post Oum Chalouba, formerly a reserve waypoint but now virtually abandoned.

14. With the exception of the southwest corner already mentioned, the entire southern boundary of the reserve is composed of a series of inter-joining ouadis (Enne, Djedid, Zoralnam, Rimé) that are difficult to follow on the ground as a mostly diffuse and interconnected series of tree lines and inundation zones generally flowing from east to west.

15. In the interests of the reserve's management and the communication of its territorial limits, a redefinition of the reserve's boundaries is deemed necessary. Such a redefinition would not only consider the changes in road infrastructure that have occurred over the past several decades but also the presence of new administrative entities. In 1969, the reserve covered part of the territorial administrative entities (départements at the time) of Biltine, Batha, Borkou-Ennedi-Tibesti (BET) and Kanem. Today, the relevant administrative units (provinces) are Ouadi Fira, Batha, Ennedi-Ouest, Borkou and Bahr Al Ghazal. Currently, the reserve covers part of the following eight prefectures and sub-prefectures: Arada (Ouadi Fira), Haraz Djombo, Ouadi Djedid, Djedda (Batha), Kalla Id (Ennedi-Ouest), Kouba Olanga, Borkou (Borkou) et Salal (Bahr Al Ghazal).

16. The redefinition might also take into consideration areas that are now heavily degraded but any readjustment on social or ecological grounds would only take place following thorough study and assessment of the impacts and implications, including the retention of land that could be rehabilitated and the presence of potential or actual corridors with surrounding areas of conservation interest (e.g. Manga, Eguey, Ennedi, etc.). Work over the last decade or more has also highlighted the presence of assets unknown or unrecorded at the time of the reserve's establishment. This would certainly include temporary wetlands that play a very major role in maintaining the flyways of migratory birds from the Palearctic to the Afrotropical zone.

17. Irrespective of the outcome, it is vital to communicate the reserve's presence, role and territorial limits. Renewal and updating of the original 1969 decree are certainly required, along with a solid communications

campaign. Both elements could be handled by local partners.

18. It is worth noting that OROAGR is one of 85 Key Landscapes for Conservation (WAF-01 Desert Niger-Chad-Algeria) identified EU “Biodiversity for Life” (B4Life) program.

Conclusion

19. To summarize, the following points emphasize the exceptional value of the OROA Reserve at all levels, national, regional and global:

- Vast and relatively intact area of seasonal grazing lands and woodlands;
- Exceptional (possibly unique) assemblage of large birds and mammals of global significance (scimitar-horned oryx, addax, dama gazelle, dorcas gazelle, large bustards);
- Very rich avifauna (local and migratory species), with a continentally significant population of large vultures (lappet-faced, Rüppell’s, hooded, Egyptian, white-backed) and raptors;
- Natural woodland barriers against desert encroachment (e.g. Ouadis Kharma and Achim);
- Strong support for conservation at both government and international levels (EU, NGO, UAE).

ANNEX 5: Economic and Financial Analysis including Greenhouse Gas (GHG) accounting

1. **The Economic and Financial Analysis (EFA) of the proposed ALBIÄ Project** is built on a cost-benefit analysis applied to i) typical agricultural models (Sorghum, Cowpea, Groundnut, and Vegetables), ii) Income Generating Activities (IGA) (storage and beekeeping) and iii) Water Supply, Sanitation, and Hygiene activities in the Project intervention areas. It incorporates the estimated the carbon balance of the Project (using the Ex-Ante Carbon Balance Tool, or Ex-Act, and the Greenhouse Gas Accounting for (WSS services). This annex is organized as follows: (i) Part I describes the methodology and underlying assumptions; (ii) Part II summarizes the results from the financial analysis of the agricultural and IGA models; (iii) Part III details the GHG accounting, and (iv) Part IV summarizes the results of the economic analysis and sensitivity analysis to test how results change under different modelling scenario.

2. **Overall, ALBIÄ is a viable project, generating a NPV of US$ 54 million (at a 6 percent discount rate) and an Economic Internal Rate of Return (EIRR) of 29 percent** (on a total budget of US$ 54.45 million, of which US$$ 50 million from IDA and US$$ 4.45 million from GEF), with the environmental benefits at market price. The sensitivity analysis shows that the project's results remain robust under various scenarios.

I. Methodology and assumptions

3. The methodology used is a cost-benefit analysis[82].[83] The following steps were used for the financial analysis: (i) identification of benefits and costs generated/incurred by the project; (ii) comparison of With Project (WP) and Without Project (WOP) scenarios in order to assess the net incremental benefits; and (iii) calculation of the financial and economic profitability indicators (such as the NPV and the EIRR).

4. **Identification of benefits.** The project activities are expected to generate multiple benefit streams. Based on available data and projects interventions, this EFA considers the following main benefits streams: (i) *production benefits at farmers' level* in the Integrated Agricultural Production Sites (IAPSs), such as increased crop yields of sorghum, groundnut, cowpea, and vegetables (which are representative of crop production systems in the IAPSs), leading to increased revenues, resilience to climate change, as well as more intangible social benefits (not assessed here) such as improved food security and nutrition, and human capital strengthening; (ii) *benefits at the level of farmers' organizations and individual entrepreneurs* from improved storage[84] and beekeeping[85]; (iii) *environmental co-benefits*, such as sustainable natural resources management and reduced Greenhouse Gas (GHG) emissions/enhanced carbon sequestration through the adoption of climate-smart technologies and practices[86] and, WSS; (iv) *water supply, sanitation and hygiene interventions benefits* related to increasing semi-urban and rural access to WSS services and enhancing service delivery management capacity in the five hotspots (Salal, Kouba, Olanga, Kalait, Arada, and Djedda) and their surrounding villages outside the Reserve.

5. For farmers and communities, the productivity gains and additional income generation are realized through the development of 500 ha of integrated plantation in the IAPSs, including staple crops (sorghum, cowpea,[87] groundnut, and vegetable) and agroforestry; the access to improved seeds, inputs (including fertilizers), equipment, and extension services; the construction of 40 improved storages and the promotion of 100

[82] This analysis follows the standard methodology recommended by the World Bank, as described in Gittinger (1982) and Belli et al. (2001), and is aligned to with the Cost benefit analysis for World Bank Projects guidelines (WB-Independent Evaluation Group, 2010)
[83] No shadow pricing adjustments, corrections for foreign exchange rate distortions, using the standard correction factor, or adjustment for tax content in the local currency portion of the investment cost, are made. No taxes and duties are assumed in the investment costs, so market prices are assumed to be the same as economic prices for WSS. These would all tend to increase economic returns; their exclusion ensures a conservative result.
[84] Access to agri-inputs, improved storage and preservation conditions, storage rent, etc.
[85] Mainly from the sale of honey.
[86] Climate change resilient agriculture practices *https://www.worldbank.org/en/topic/climate-smart-agriculture*
[87] Sorghum and cowpea are also forage crops.

beekeeping enterprises.[88]

6. Regarding environmental benefits, reduced GHG emissions/enhanced carbon sequestration would result from decreased land degradation given: (a) the improved natural resources management of project areas (inside and outside the Reserve) including 917,000 ha of grassland;[89] (b) the participative and sustainable management of Ouadi Rime Ouadi Achim Reserve (OROAR) projected area; (c) the improved agricultural practices in the IAPSs; (d) the development of perennial agroforestry crops;[90] and (e) use of solar panel for WSS.

7. The proposed Water Supply, Sanitation, and Hygiene activities will help increase access to safe and reliable WSS services and promote better hygiene in selected semi-urban and rural zones that require expansion and improvement of services in communities to achieve universal access. The total investment (US$14.98 million) and disbursement plan in each hotspot for rural water supply and sanitation is as outlined in Table 5.1. Sanitation interventions will be limited to construction of latrines in schools and health centers, behavior change communication and community-led total sanitation (CLTS) activities and have a single budget line (US$1.59 million) for all hotspots.

Table 5.1 Component 2.3 Investment and Disbursement Plan

	Total Inv. (US$m)	Disbursement plan (US$m)					
		2020	2021	2022	2023	2024	2025
A. Technical studies, control and supervision	1.20	0.20	0.30	0.30	0.30	0.10	0.00
B. Hotspot salal	1.61	0.00	0.00	1.13	0.32	0.16	0.00
C. Hotspot Kouba olanga	1.30	0.00	0.00	0.91	0.26	0.13	0.00
D. Hotspot Kalait	2.99	0.00	0.00	2.09	0.60	0.30	0.00
E. Hotspot A rada	1.81	0.00	0.00	1.27	0.36	0.18	0.00
F. Hotspot Djedda	4.17	0.00	0.00	2.92	0.83	0.42	0.00
G. Due diligence activities PPP arrangement	0.30	0.00	0.06	0.06	0.06	0.06	0.06
Total Water Supply	13.38	0.20	0.36	8.68	2.74	1.35	0.06
Sanitation	1.59	0.00	0.00	1.27	0.32	0.00	0.00
Total Water Supply and Sanitation	14.98	0.20	0.36	9.95	3.06	1.35	0.06

8. Intended beneficiaries per hotspot are outlined in Table 5.2 At present, out of 54,812 people living in the project area, only 8,579 (16 percent) have access to safe water supply; the project intends to raise such access rate to 100 percent by 2027. To achieve such ambitious target, the project will offer access through standpipes to 70 percent of the population and through household connection to 30 percent of the population. With the universal access achieved through the project, 70,218 people will have access to water and sanitation services by 2027, and 102,653 by 2040.

Table 5.2 Population and Safe Water Access Rates, at Present and at the End of the Project

	2020			2027			Incremental	2040	Incremental
	Population	Coverage	people with access	Population	Coverage	people with access	people with access, 2027	Pop. with access	people with access, 2040
Salal	7,174	65%	4,663	9,189	100%	9,189	4,526	14,553	9,890
Kouba Olanga	4,851	40%	1,940	6,214	100%	6,214	4,273	9,841	7,900
Kalait	13,340	0%	0	17,087	100%	17,087	17,087	27,061	27,061
Arada	25,854	6%	1,551	33,125	100%	33,125	31,574	52,487	50,936
Djedda	3,593	12%	424	4,602	100%	4,602	4,179	7,290	6,866
Total	54,812	16%	8,579	70,218	100%	70,218	61,639	111,232	102,653

9. For WSS, it is assumed that the per unit operating and maintenance cost is constant for the WP scenario. Average water fees are assumed to remain fixed. It is also assumed that service provision in the WOP scenario is

[88] For all the IAPS.
[89] Which represents around 70 % of the degraded steppes since 2000 in the project areas and around 1/10 of the OROAR Protected Areas (*Etude sur la vulnérabilité aux changements climatiques et les stratégies d'adaptation dans la zone du projet*, Kokou K. and all, 2020, page 76).
[90] Such as Acacia nilotica ; Acacia senegal ; Bauhinia rufescensis ; Prosopis juliflora ; Ziziphus mauritian.

limited to the existing population that count with water supply service in 2020. Benefits are estimated using revealed preferences, i.e., an implied economic price for water being used, of communities in hotspots, and assuming water consumption between 30 and 40 lpcd in standpipes and 50 and 60 lpcd in household connections.

10. **The other benefits of ALBIÄ are multiple but are challenging to quantify.** The main non-quantifiable benefits are the following.

i. The potable water supply activities financed will have an impact on human capital development by alleviating: (a) the health challenges posed by the lack of safe drinking water and sanitation, and (b) the burden of fetching water imposed on children, particularly girls, which is a major cause of intermittent school attendance.
ii. Reducing poor hygiene, which is a contributing factor to chronic malnutrition and stunted growth that pose a threat to future generations of the country's population.
iii. The project will equally have a positive impact on poverty reduction with the substantial monetary and non-monetary benefits to be derived from improved public health and labour productivity, including the new jobs created for the management of the new water points.
iv. The benefits from ecotourism to be promoted in close collaboration with African Parks Network.

11. **Financial Models.** Seven financial models have been prepared, namely: (i) crop budgets for sorghum, cowpea, groundnut and vegetables (tomato and okra), and (ii) budgets for income generating activities (storage and beekeeping). These models are good representatives of the investments likely to be developed by the project based on the community-driven approach. This analysis is based on best judgements about the crop choice and mix of benefits, as well as preferred type of income-generating activities, based on decisions likely to be made by beneficiaries. It is also based on plausible assumptions arising from the recent experience from World Bank and IFAD[91] funded projects, preparatory studies for project design, and agricultural statistics. A simple cash flow model has been used to assess financial viability of the water supply services from the operator's perspective.

12. **The economic analysis** follows a similar approach but uses economic prices and aggregates the results of the project from the society viewpoint. The economic analysis uses the aggregated incremental economic benefits, adding the environmental co-benefits, and subtracting the project economic costs to determine the overall economic viability of the Project.

13. **The discount rates** used to compute the financial and economic NPVs are in line with the World Bank recent guidance notes[92] and the practice of recent similar projects in Chad: 12 percent for the financial analysis and 6 percent for the economic analysis.[93] Exchange rate used is XAF 570 for US$ 1.

14. **WOP and WP parameters for yields and outputs are presented in the table below.** Across the models, the analysis assumed a quick uptake of improvements over 1 to 3 years. The financial models[94] were developed over a 20-year period.

[91] ProPAD (P162956) and PARSAT, funded by IFAD.
[92] *Discounting Costs and Benefits in Economic Analysis of World Bank Projects*, OPSPQ, 2016
[93] The financial discount rate is the interest rate at which the beneficiaries have access to credit (12%). The economic discount rate of 6% corresponds to the yield of public bills issued by Chad in 2013, with a maturity of between 5 years. https://www.african-markets.com/fr/actualite/afrique-centrale/tchad/le-tchad-lance-un-emprunt-obligataire-de-85-milliards-f-cfa
[94] The parameters of the seven models were developed based on the guidance from the PARSAT's project document, other similar projects in Sahelian countries, and the technical discussion with the project team.

Table 5.3 WOP and WP Parameters for Yields and Outputs

Model	Parameter	Yield / output			
		WOP	WP	Δ	Δ (%)
Sorghum	yield increase (kg/ha)	695	1,200	505	73%
Groundnut	yield increase (kg/ha)	600	1,200	600	100%
Cowpea	yield increase (kg/ha)	552	1,000	448	81%
Tomato	yield increase (kg/ha)	8,500	12,000	3500	41%
Okra	yield increase (kg/ha)	5,500	7,500	2000	36%
Storage	Reduction of lost (%)	N/A	12	12	12
Beekeeping	Quantity processed (litre)	40	80	40	50%

II. Financial Results

15. **All the models for agricultural activities assessed as part of this analysis are viable,** generating significant amounts of additional income and attractive returns on investment (see Table 5.4 below). Overall, all agricultural activities show positive NPVs and attractive internal rates of return.

Table 5.4 Summary of the Profitability Indicators for Production Models

	Production					IGA	
	Sorghum	Groundnut	Cowpea	Tomato	Okra	Storage	Beekeeping
Discount rate	12%	12%	12%	12%	12%	12%	12%
NPV @ 0.12 (XAF)	75,252	399,759	1,956,196	975,826	502,503	280,034	327,984
NPV @ 0.12 (US$)	132	701	3,432	1,712	882	491	575
EIRR	26%	60%	62%	72%	43%	14%	39%

1 US$= 570 XAF

16. **For the water supply service' operator**, the standpipe water supply systems and pipe networks will be able to cover operations costs and pay for spare parts needed for maintenance, provided they can charge a US$1.12/$m^3$ water fee (about XAF 13 per 20-liter container) over the life of the assets. Being able to cover operation and maintenance is key for the operators technical and financial viability and paying the proposed US$1.12/$m^3$ is much less than what people currently pay, about XAF 50 per 20-liter container (equivalent to US$4.39/$m^3$).

III. Greenhouse Gas Accounting

17. **Environmental co-benefits.** ALBIÄ is expected to generate several environmental benefits. The promotion of climate-smart agriculture practices, the agroforestry techniques, the development of integrated production sites, the integrated approach of sustainable land management and the natural resource management community-led approach, will help strengthening the resilience of rural livelihoods and improving the management of natural resources. The sustainable management of land and natural resources in the project area (inside and outside the Reserve) and the installation of perennial agroforestry crops will be a key source of carbon sequestration. Measures to adapt to climate change risks for water access (energy efficiency improvements and sustainable management of water resources) and infrastructures (storage and office) will be promoted. It is planned to exclusively use solar energy for water supply activities.

18. **The Carbon balance/sequestration potential of the Project was estimated using the EX-ACT tool**[95] and the Greenhouse Gas Accounting for WSS activities. The carbon-balance is defined as the net balance from all GHGs expressed in CO_2 equivalent (CO_2eq) that were emitted or sequestered due to project implementation (WP) as compared to a business-as-usual scenario (WOP).

19. **For ALBIÄ, the GHG accounting calculations from EX-ACT were based on the climate characteristics of the selected zones in Chad.** Based on the Intergovernmental Panel on Climate Change (IPCC) classification, the Project is located in a zone with Warm temperate dry climatic conditions and Sandy Soils. Land use, crop management practices, and grassland were estimated for WP and WOP situations. Changes brought by the Project were factored into the tool's different modules (in full alignment with the EFA assumptions and budget provisions).

Table 5.5 Data Inputs to EX-ACT in the Current, WOP and WP

Activities	Current/without project scenario	With project scenario
Introducing of perennial and annual crops (staple and agroforestry crops)	500 ha of degraded land	500[96] ha of perennial and annuals crops under improved agronomic practices.
Afforestation	2,000 ha of set aside areas under human and livestock pressure	2,000[97] ha of conservative areas under improved management including natural assisted regeneration (NAR)
Grassland	917,059 ha of Grassland under pressure due to mismanaged livestock and human activities	917,059 ha[98] of Grassland under improved practices and management Reduction of land and natural resources degradation
Fertilizer	No fertilizers	2 tons of Urea 60 tons of N per year from NPK and urea 60 tons of P per year from potassium sulphate 60 tons of K per year from NPK
Construction –wall/Grid /warehouse	No construction	200 km of wall and grid 2000 m² for agricultural/warehouse buildings
Liquide or gaseous – Gasoil/diesel	0	1000 m^3 per year

[95] EX-ACT (Ex-Ante Carbon-balance) was developed by FAO. It is an appraisal tool that provides estimates of the impact of Agriculture, Forestry and Other Land Use (AFOLU) development projects, programs and policies on the carbon-balance. EX-ACT is a land-based accounting system, estimating carbon stock changes (i.e., emissions or sinks of CO_2) as well as GHG emissions per unit of land, expressed in equivalent tons of CO_2 per hectare and year. The tool helps project designers to estimate and prioritize project activities with high benefits in economic and climate change mitigation terms. The tool was designed using mostly data from the Intergovernmental Panel on Climate Change (IPCC) Guidelines for National Greenhouse Gas Inventories (NGGI-IPCC, 2006), which furnishes EX-ACT with recognized default values for emission factors and carbon values in soils and biomass (the so-called "Tier 1 level" of precision).
[96] ALBIÄ Project result framework
[97] ALBIÄ Project result framework
[98] Which represents around 70 % of the degraded steppes since 2000 in the project areas and around 1/10 of the OROAR Protected Areas (*Etude sur la vulnérabilité aux changements climatiques et les stratégies d'adaptation dans la zone du projet*, Kokou K. et al, 2020, page 76)

Table 5.6 Detailed Results

Project Name	ALBIÄ		Warm temperate dry
Continent	Africa		Dominant Regional Soil Sandy Soils
Components of the project	Gross fluxes		
	Without	With	Balance
	All GHG in tCO_2eq		
	Positive = source / negative = sink		
Land use changes			
Afforestation	0	-239,662	-239,662
Other land use changes	0	-16,758	-16,758
Agriculture			
Annual	0	-7,518	-7,518
Perennial	0	-12,865	-12,865
rice	0	0	0
Grassland and Livestock			
Grassland	387,624	-23,191,501	-23,579,124
Degradation & Management	0	0	0
Coastal wetlands	0	0	0
Inputs and Investments		52,217	52,217
Fishery and Aquaculture	0	0	0
Total	387,624	-23,416,085	-23,803,709
Per hectare	0	-25	-26
Per hectare per year	0.0	-1.3	-1.3

20. **For agriculture and natural resources management activities, the difference between the without and with-project scenario gross results yields a total project's carbon balance of 23,803,709 tCO2-e in carbon sequestration over the full project implementation period.** The carbon balance overall gross results show that the without-project scenario leads to combined effects from GHG emissions and carbon sequestration that add up to 387,624tCO_2-e.

21. **For WSS activities,** a preliminary assessment of fossil fuel usage avoided by the adoption of solar panels to power the pumps used in the wells producing water in the various service areas has been undertaken. It is estimated that average 0.87 GWH[99] of energy per year will be produced by solar panels, which **is equivalent to a net - 643 tCO_2eq per year of GHG emissions**. Over the lifetime of the Project, gross emissions will be -10,650 tCO2eq and net emissions -11,578 tCO2eq.

22. **The project implementation scenario has a considerably high impact on GHG emissions and carbon sequestration leading to a removal of 23,804,909 tCO_2-e**, or 14 percent of reduction compare to the emission of the reference 2010 from CHAD Intended Nationally Determined Contribution (INDC) for the Republic of Chad.[100]

23. The gross results and carbon-balance by module identifies those practices and activities contributing to the positive carbon-balance of the with-project scenario thus leading to carbon sequestration. As a result, the central components leading to carbon sequestration are the grassland as the outcome to the sustainable management of natural resources in the project area inside and outside the reserve.

[99] Average production of water estimated at about 1.74 million m3 per year, with 0.5 kWh/ m^3, results in about 0.87 GWH/year.
[100] CHAD INDC 2015.
https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Chad%20First/INDC%20Chad_Official%20version_English.pdf

24. **Economic value of the mitigation potential.** According to the World Bank Guidance Note on the Social Value of Carbon (2014), the value of carbon can be derived from three different measures: (i) the social cost of carbon; (ii) the marginal abatement costs; and (iii) the carbon market prices. The social cost of carbon attempts to capture the marginal global damage (cost) of an additional unit of CO_2e emitted. The recent draft Guidance Note on Shadow Price of Carbon in Economic Analysis (September 2017) recommends projects economic analysis use a low and high estimate of the carbon price starting at US$ 40 and 80, respectively, in 2020 and increasing to US$50 and 100 by 2030". Marginal abatement costs are designed to reflect the carbon price necessary to achieve various climate change targets. Carbon market prices are the market value of CO_2e emission reductions or sequestration (offsets) that are registered and sold through various market structures. Carbon market prices currently average US$8 per ton[101] [102]. Following the World Bank guidelines, this analysis presents three scenarios using the low and high range social cost of carbon and at market prices.

IV. Economic results

25. **Economic analysis of the project investments.** The economic analysis is based on the following assumptions: (i) the period considered is 20 years corresponding to the lifetime of key infrastructures taken as the long-term investment; (ii) financial benefits and costs have been converted into economic values; (iii) the costs of the project components deducting (1) direct support provided to producers, farmers groups and community in order to avoid taking into account the costs already contained in the business models, and (2) last year' costs of the project (years 8 to 20) in recurrent cost to reflect the costs incurred by the public sector for post-project activities and maintenance of the infrastructure ; (iv) 100 percent of additional project revenues; and (v) the long-term capital opportunity cost (discount rate) retained is 6 percent.

26. **For the WSS investments**. The economic results have been assessed based on the following development impacts: (a) Increased access to water supply services in Salal, Kouba, Olanga, Kalait, Arada, and Djedda with 30 percent of the beneficiary populations through household water connections and 70 percent of the populations through standpipes; and (b) improved access to sanitation in schools and public buildings. In the WOP scenario, it is assumed that people with access to water services (8,579) will continue having access to those services, during the evaluation period (Table 5.2). In the WP scenario, drinking water services to communities will increase by 1.37 million m^3 per year by 2027 and by 2.77 million m^3 per year by 2040. As a result, benefits accruing to people because of their new access to water services and increased water consumption are estimated to be in the order of US$2.61million per year by 2027 and US$5.43 million per year by 2040[103].

27. **The analysis conducted based on the aforementioned assumptions results in an EIRR of 29 percent and a NPV of XAF 31 billion or US$ 54 million at Carbon market price. The overall project is profitable under all scenarios with valuation of environmental benefits**. Including the GHG mitigation valued at the low estimate range (on average, 47 US$/$tCO_2e$), ALBIÄ generates a net present value (NPV) of US$ 457 million and an EIRR of 202 percent. With environmental benefits valued at the high estimate range (on average, 94 US$/$tCO_2e$), the project's results yield an NPV of US$ 941 million and an EIRR of 341 percent. These three scenarios are summarized in the table below.

[101] https://carbonpricingdashboard.worldbank.org/map_data
[102] https://markets.businessinsider.com/commodities/historical-prices/co2-european-emission-allowances/euro/24.2.2010_24.3.2020
[103] Benefits are estimated using economic prices paid by people for drinking water in hotspots based on information in studies prepared to inform project preparation. The underlying assumption in using such economic prices is that in the WP scenario, they represent value in the form of avoided walk and waiting time to fetch water and improved health outcomes. For example, it is reported that people in hotspot communities have to walk in average 500 m to fetch water and that waiting time could be around 30 minutes which will not happen anymore in the scenario with project. In addition, it is assumed that safe water and hand washing campaigns will improve health outcomes of communities receiving water services which are factored in the economic prices of water

Table 5.7 Scenarios of Valuation of Environmental Benefits

Indicators	Results incl. ENV benefits, valued @ market cost (8 USD/tCO2e)	Results incl. ENV benefits, valued @ low estimate range (average 47 USD/tCO2e)	Results incl. ENV benefits, valued @ high estimate range (average 94 USD/tCO2e)
NPV NAB (USD, @6%)	54,889,225	457,142,406	941,909,061
NPV NAB (FCFA, @6%)	31,286,858,128	260,571,171,579	536,888,164,711
ERR	29%	202%	341%
Discount rate	6%	6%	6%

28. **Sensitivity analysis shows that the baseline results are robust under most scenarios.** The robustness of these results was explored by testing the effects of changes in several critical parameters: (i) increased project costs; (ii) increased project benefits; (iii) reduced project benefits; (iv) delayed project benefits. The sensitivity analysis also tested for an increase in the discount rate, to arrive at the break-even point of the Project. The NPV remains positive up to a point where the social discount rate is 12 percent, suggesting robust results. The findings are summarized in the below table.

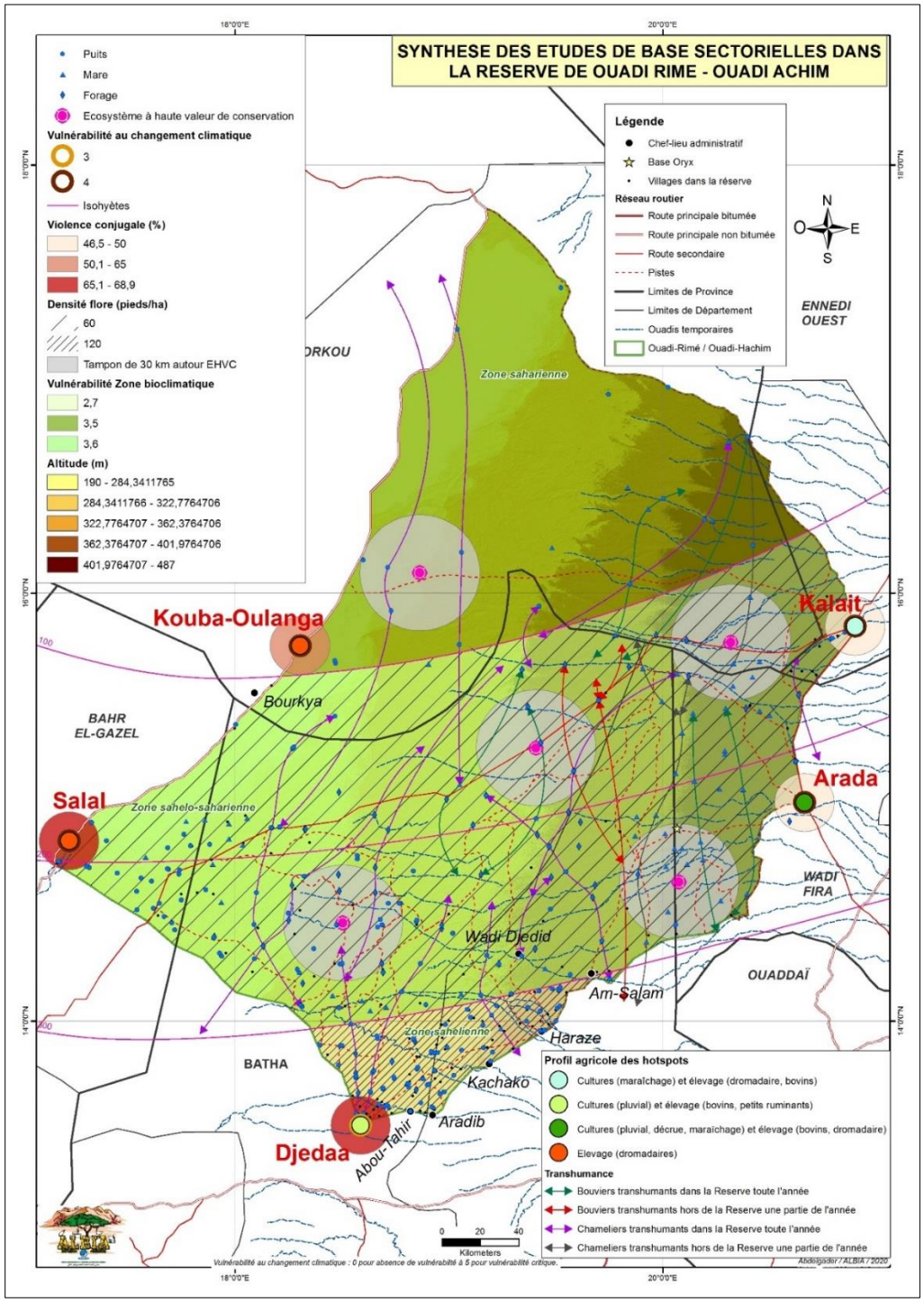
Table 5.8 Sensitivity Analysis

Scenarios	EIRR	NPV	
	%	US$	XAF
Discount rate 6%			
Base scenario	29	54,889,225	34,172,142,818
Costs overrun by 10%	25	49,148,998	30,598,474,836
Costs overrun by 20%	21	43,408,770	27,024,806,854
Benefits increased by 10%	34	66,118,375	41,163,025,082
Benefits increased by 20%	38	77,347,524	48,153,907,345
Decreased in Benefits by 10%	24%	43,660,075	27,181,260,554
Decreased in Benefits by 20%	20%	32,430,925	20,190,378,291
Benefits delayed by 1 year	21%	44,086,433	27,446,696,503
Benefits delayed by 2 year	16%	33,979,001	21,154,157,213
Increase in discount rate to 8 %	29	41,346,823	23,567,689,019
Increase in discount rate to 10%	29	31,162,900	17,762,852,944
Increase in discount rate to 12%	29	23,438,532	13,359,963,099

Table 5.9 Project costs by component									
Expenditure Accounts by Components - Totals Including Contingencies (US$ thousand)	**Component 1.** Sustainable natural resources management and protected areas		**Component 2.** Promoting diversified, resilient, sustainable livelihoods			**Component 3.** Project management, coordination and monitoring	**CERC**	**PPA**	**Total**
	Improved management of protected areas	Community sustainable natural resource management	Water resources planning and monitoring	Income opportunities and resilient livelihoods	Rural water supply, sanitation and hygiene				
I. Investment Costs									
A. Delegated management (incl. B. C. D. E. H)	3 261,3	-	-	15 049,5	-	-	-	-	18 310,8
B. Works	-	-	-	-	14 371,7	-	-	-	14 371,7
C. Equipment and material	-	-	-	-	-	-	-	86,6	86,6
D. Goods, services et inputs	-	-	1 445,4	-	-	-	-	-	1 445,4
E. Vehicles	-	-	-	-	-	-	-	36,2	36,2
F. Workshop	-	-	-	-	-	-	-	360,1	360,1
G. Consultant /a	1 667,4	2 002,2	1 352,3	-	1 617,7	-	-	797,0	7 436,7
H. Training	-	2 994,2	1 126,9	-	-	-	-	-	4 121,1
Total Investment Costs	**4 928,8**	**4 996,4**	**3 924,6**	**15 049,5**	**15 989,3**	**-**	**-**	**1 279,9**	**46 168,6**
II. Recurrent Costs									
A. Operating cost	-	-	-	-	-	1 318,4	-	200,4	1 518,8
B. Salary and allowance	2 988,5	-	-	-	-	3 676,2	-	97,8	6 762,6
Total Recurrent Costs	2 988,5	-	-	-	-	4 994,7	-	298,2	8 281,4
Total PROJECT COSTS	**7 917,3**	**4 996,4**	**3 924,6**	**15 049,5**	**15 989,3**	**4 994,7**	**-**	**1 578,1**	**54 450,0**
Taxes	992,8	-	704,6	2 705,8	2 875,5	623,1	-	276,5	8 178,3
Foreign Exchange	634,3	-	276,6	2 894,1	1 401,6	253,8	-	71,4	5 531,8

ANNEX 6: Project Map

Map 6.1 Synthesis of sectoral problematics in the project area



ANNEX 7: Gender Analysis in the ALBIÄ Project Area

1. The country of Chad, which is ranked 160 out of 162 countries in the Gender Inequality Index (GII), faces major challenges related to the three dimensions of reproductive health, empowerment, and labor market that underpin the characterization of the said index. Chad's Gender Development Index (GDI), which currently stands at 0.774, highlights poverty as a major factor that has a differentiated impact on different population groups[104]. This is illustrated by the precocity of reproductive life[105]. In the context of climate change, gender disparities are a factor of exposure of both the effects and impacts of climate change, particularly within communities where relationships are based on different hierarchies, such as male vs. female; chiefdom vs. population, noble class vs. lower class.

2. Within the ALBIÄ project area, women and girls assume most of the domestic tasks that supply households with water, energy and food from agricultural production. Inequalities in gender relations, which produce a gendered division of labor in both the domestic and community spheres, are a major factor in women's exposure to the risks associated with the effects and impacts of climate change. Indeed, differentiated impacts of these effects and impacts are observed through living conditions, livelihoods and roles and responsibilities according to each gender[106]. The need for grazing and drinking water for livestock is central to the occupation of boys and men. However, depending on the locality, the time spent fetching water, searching for drinking water, and engaging in productive activities (e.g. livestock, agriculture) is a source of deprivation of the right to education, access to health services, and participation in decision-making processes. Women's responsibilities are increased with the migration of men in search of employment to central and southern Chad on the one hand, and to neighboring countries on the other.

3. Chad recently adopted the National Strategy on Climate Change (NSCC) in 2018. The process of operationalizing the NSCC is being put in place in terms of operational planning and mobilizing resources for investments. A few programs and projects are being implemented, while waiting for a coordinated and systematized approach for investments to be implemented. However, the management of risks of exposure and effects and impacts of climate change is not done within an institutional framework involving key actors. Actions aimed at adaptation and mitigation of credits and impacts exist informally. Programs, projects, and mechanisms for participation in decision-making processes in various fields are dominated by men (husbands, chiefs, religious leaders, and administrative authorities) – except in the case of men of the "lower class" in the presence of individuals of the "noble class". Moreover, governance structures at the decentralized level (CPA, CDA)[107] are composed of administrative authorities, heads of services, and representatives of civil society organizations. Therefore, the structural obstacles that deprive women of the right to participate in decision-making processes are patriarchy, unequal traditional practices and beliefs that permeate all aspects of life and confine women to socially 'acceptable' and 'accepted' social roles. Speaking in most decision-making spaces is reserved primarily for men and, depending on the context, for women who have developed proven leadership through life skills – such as self-esteem, speaking ability, dynamism, etc. – in their environment.

4. In the family and community spheres, the basis of social relations is itself discriminatory against women regarding household decision-making processes. Their participation in decision-making in important areas of conjugal life (acquisition of household goods, visits from relatives, health care) is low, while roles relating to

[104] UNDP (2019). Human Development Report.
[105] EDS-MICS 2014/2015, Proportion of adolescent girls (15-19 years) who started a high reproductive life in the provinces covering these hotspots: Batha (29.8%), Borkou (18.7%), Bahr el Gazal (36.2%), Ennedi Ouest (14.3%), Wadi Fira (20.1%)
[106] Ministry of the Environment, Water and Fisheries (2020). Study report on gender and the impact of climate change on women and coping mechanisms
[107] Provincial Action Committee (CPA), Departmental Action Committee (CDA)

reproduction and family care are assigned to them[108].

5. The income-generating activities within the project area involve mainly taking care of livestock, agricultural activities, and trade. However, the dynamics of economic development face structural obstacles: i) the lack of manpower in a context of low population density and migration of young people and heads of households seeking employment, ii) a system of service provision (education, health, support for productive activities) that puts people with particular lifestyles (nomadism/transhumance) on the margins, where girls, women and persons belonging to the "lower class" are more deprived of their rights in this regard in patriarchal communities, iii) the virtual non-existence of support services for productive activities and delivery, and iv) the lack of financing mechanisms.

6. Chad's commitments to the promotion of human rights and gender equality have been reflected in the ratification of numerous international and regional instruments, such as: the Convention on the Elimination of All Forms of Discrimination against Women, ratified on 10 June 1995; the Convention on the Rights of the Child, ratified on 1 October 1990; the African Charter on Human and Peoples' Rights, which recommends that States parties should scrupulously ensure respect for women's rights (art. 18). 3), and the Additional Protocol to the African Charter on Human and Peoples' Rights on the Rights of Women in Africa. National legislation is also strengthened for the promotion of reproductive health[109], such as better protection for girls in the face of early marriage[110], institutionalization of parity in nominative and elective positions[111], and criminalization of gender-based violence by the revised penal code. Chad also has a gender policy underpinned by an action plan. However, the application of the legal and political framework regarding the protection of women and girls is mixed because gender is not systematized through programs and projects institutionally, appointments do not yet respect the minimum quota of 30% representation of women, and laws against child marriage and violence against women are difficult to apply in the face of resistance to change in the practices and behavior of rights-holders.

7. In order to reduce, and even eliminate, gender inequalities and increase the enjoyment of the rights of women and girls, the ALBIÄ project will implement actions targeting the following practical needs and strategic interests:

- The alleviation of domestic chores (water, firewood, manual work) through the realization of hydraulic works, alternative solutions to firewood, the supply of equipment. This constitutes the starting point for the empowerment of women and girls in the context of climate change;
- The provision of advisory support and agricultural inputs for productive activities;
- The promotion of access to knowledge, know-how and technological innovations for young people, women and men;
- The implementation of civic education focusing on gender equality, gender and the rights of women and girls that are acquired through political, legal and institutional instruments; as well as adapting a "functional literacy" approach to the context of high illiteracy;
- Support for the emergence of a dynamic women's association through the creation of animation and training centers for providing techniques for land restoration, animal and agricultural production;
- The representation of women in the management committees of hydraulic works,

[108] EDST/MICS 2014/2015
[109] Law No. 06 / PR / 2002 of April 15, 2002 promoting reproductive health, prohibiting female genital mutilation, early marriage and domestic and sexual violence;
[110] Law 012 / PR / 2015 prohibiting child marriage;
[111] Ordinance No. 012 / PR / 2018 of May 22, 2018 establishing parity in nominative and elective functions in the Republic of Chad.

- The establishment of a financing mechanism for youth and women's entrepreneurial initiatives to strengthen animal and agricultural production, as well as the creation of processing units and related services;
- The elaboration of development plans and the revision of existing ones with a view to gender mainstreaming through strategic orientations and the definition of priorities,
- The development of a communication plan for awareness raising, advocacy and lobbying;
- The promotion of dialogue with administrative authorities, chiefdoms, church leaders and other opinion leaders on gender equality and gender.
- Strengthening the life skills of women who are community leaders in the field of associative governance, speaking out, advocacy;
- The composition of mixed operational teams to ensure better communication with women;
- The creation of a formal, multi-stakeholder framework for knowledge management and climate-resilient practices that promote gender equality and gender.

8. The consolidation and sustainability of the achievements of the project's interventions that are aimed at eliminating social inequalities will be implemented at the institutional level through the elaboration and/or revision of local development plans that systematize gender. Raising girls' and women's awareness of their rights as full citizens and supporting their economic empowerment will help build gender-sensitive attitudes and behavior. Project ALBIÄ 's investments will help to strengthen local associative dynamics that will provide spaces for the expression of citizenship. It should be noted that the establishment of the Women's Associations Liaison and Information Unit (CELIAF)[112] within the area covered by the interventions will help in implementing the achievements on a long-term basis. At the institutional level, the gender policy includes the creation of a Gender Observatory whose mission is to monitor Chad's commitments to gender equality. The establishment of an observatory is a lever for the application of the legislation in force to protect human rights and gender equality in the long term.

9. In addition to administrative authorities, the project will engage the responsibility of the traditional chiefs, whose power to influence changes in community beliefs and practices. The High Council of Autonomous Communities and Traditional Chiefdoms, a new institution of the Fourth Republic since December 2018, which has representation in all provinces, is engaged in promoting the national gender policy through awareness-raising activities among the population. As such, it is an essential ally in the strategy for the promotion of gender equality.

[112] CELIAF, a platform of women's organizations that is established in 19 out of 23 provinces and whose mission is to defend the rights and interests of girls/women.