

Strengthening the resilience of small farmers through Climate Smart Agriculture (PRP-AIC) techniques in Tahoua Region

Part I: Project Information

GEF ID

11004

Project Type

FSP

Type of Trust Fund

LDCF

CBIT/NGI

CBIT No

NGI No

Project Title

Strengthening the resilience of small farmers through Climate Smart Agriculture (PRP-AIC) techniques in Tahoua Region

Countries

Niger

Agency(ies)

UNDP

Other Executing Partner(s)

Secretariat Exécutif du Conseil National de l'Environnement pour un Développement Durable
(SE/CNEDD)

Executing Partner Type

Government

GEF Focal Area

Climate Change

Taxonomy

Integrated Programs, Focal Areas, Land Degradation, Sustainable Land Management, Restoration and Rehabilitation of Degraded Lands, Improved Soil and Water Management Techniques, Climate Change, Climate Change Adaptation, Community-based adaptation, Climate resilience, Ecosystem-based Adaptation, Private sector, Least Developed Countries, Gender Equality, Gender Mainstreaming, Food Security in Sub-Sahara Africa, Small and Medium Enterprises, Integrated Land and Water Management, Food Value Chains, Food Systems, Land Use and Restoration, Sustainable Food Systems, Integrated Landscapes, Capacity, Knowledge and Research, Knowledge Generation

Sector

AFOLU

Rio Markers

Climate Change Mitigation

Climate Change Mitigation 0

Climate Change Adaptation

Climate Change Adaptation 2

Duration

60 In Months

Agency Fee(\$)

848,580.00

Submission Date

4/13/2022

A. Indicative Focal/Non-Focal Area Elements

Programming Directions	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
CCA-1	LDCF	5,432,420.00	26,000,000.00
CCA-2	LDCF	3,500,000.00	14,800,000.00
	Total Project Cost (\$)	8,932,420.00	40,800,000.00

B. Indicative Project description summary

Project Objective

Reduce food insecurity for small farmers in Tahoua by strengthening their resilience to climate change using ecosystem restoration and climate-smart agriculture (CSA) and supporting the development of the private sector

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
1: Land restoration for climate resilience of agricultural production systems	Investment	1.1: Degraded land is restored to protect agricultural production systems against the adverse impacts of climate change	<p>1.1.1: Awareness raising and training programmes are conducted to sensitise local authorities and communities and equip them with information, skills and knowledge to support ecosystem restoration practices.</p> <p>1.1.2: Degraded ecosystems surrounding the farming areas are restored with the adoption of Nature-based Solutions</p> <p>1.1.3: Energy-saving equipment is promoted to reduce deforestation for firewood consumption</p>	LDC F	2,000,000.00	10,000,000.00
2: Promotion of Climate Smart Agriculture	Investment	2.1. : Climate-smart agriculture techniques are promoted and reduce the vulnerability of smallholder farmers to climate	<p>2.1.1. Climate-resilient farming techniques, including irrigation are adopted to reduce losses and food insecurity</p> <p>2.1.2.: Micro-dams, dikes, bioengineering and other land stabilization methods are implemented to protect agricultural production from the increasing intensity and frequency of droughts and floods.</p> <p>2.1.3.: Agroclimatic and meteorological information and early warnings are available and understood by farmers for climate-resilient decision-making</p>	LDC F	5,000,000.00	22,010,000.00

3: Facilitating the development of the private sector in local communities	Technical Assistance	3.1. Women- and youth-led local Micro and Small Enterprises (MSEs) and entrepreneurs provide adaptive solutions to climate change with local banks and microfinance institutions sustainable facilities	3.1.1. Agricultural groups and community cooperative funds are strengthened to increase their financial sustainability for the adoption of CSA 3.1.2. : In collaboration with the FISAN, the BAGRI and MFIs, MSEs are supported to access loans for climate resilient agriculture financing.	LDC F	1,000,000.00	5,000,000.00	
4: Knowledge Management and Lessons Learned	Technical Assistance	4.1. Lessons learned on climate resilient agriculture and land restoration practices inform future projects in-country and elsewhere	4.1.1. Project results are monitored and evaluated 4.1.2. Lessons learned from the project are compiled, capitalized, and disseminated	LDC F	507,067.00	2,000,000.00	
Sub Total (\$)					8,507,067.00	39,010,000.00	
Project Management Cost (PMC)							
					LDCF	425,353.00	1,790,000.00
					Sub Total(\$)	425,353.00	1,790,000.00
					Total Project Cost(\$)	8,932,420.00	40,800,000.00

Please provide justification

C. Indicative sources of Co-financing for the Project by name and by type

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount(\$)
Recipient Country Government	Ministry of Planning	In-kind	Recurrent expenditures	300,000.00
GEF Agency	UNDP	Grant	Investment mobilized	500,000.00
Recipient Country Government	Ministry of Agriculture – Direction of Rural Engineering (IFAD-Rural Communities resilience; PISA 2; GCF AHA-AIC)	Public Investment	Investment mobilized	20,000,000.00
Recipient Country Government	Ministry of Livestock (PIMELAN; PRAPS 2)	Public Investment	Investment mobilized	20,000,000.00
			Total Project Cost(\$)	40,800,000.00

Describe how any "Investment Mobilized" was identified

UNDP will provide core resources to support the implementation of the project

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

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount(\$)	Fee(\$)	Total(\$)
UNDP	LDCF	Niger	Climate Change	NA	8,932,420	848,580	9,781,000.00
Total GEF Resources(\$)					8,932,420.00	848,580.00	9,781,000.00

E. Project Preparation Grant (PPG)

PPG Required **true**

PPG Amount (\$)

200,000

PPG Agency Fee (\$)

19,000

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount(\$)	Fee(\$)	Total(\$)	
UNDP	LDCF	Niger	Climate Change	NA	200,000	19,000	219,000.00	
					Total Project Costs(\$)	200,000.00	19,000.00	219,000.00

Meta Information - LDCF

LDCF **true**

SCCF-B (Window B) on technology transfer

false

SCCF-A (Window-A) on climate Change adaptation

false

Is this project LDCF SCCF challenge program?

false

This Project involves at least one small island developing State(SIDS).

false

This Project involves at least one fragile and conflict affected state.

true

This Project will provide direct adaptation benefits to the private sector.

true

This Project is explicitly related to the formulation and/or implementation of national adaptation plans (NAPs).

false

This Project has an urban focus.

false

This Project covers the following sector(s)[the total should be 100%]:*

Agriculture	45.00%
Natural resources management	25.00%
Climate information Services	10.00%
Costal zone management	0.00%
Water resources Management	10.00%
Disaster risk Management	10.00%
Other infrastructure	0.00%
Health	0.00%
Other (Please specify:)	0.00%
Total	100%

This Project targets the following Climate change Exacerbated/introduced challenges:*

Sea level rise	Change in mean temperature	Increased Climatic Variability	Natural hazards
false	true	true	true
Land degradation	Costal and/or Coral reef degradation	GroundWater quality/quantity	
true	false	false	

Core Indicators - LDCF

CORE INDICATOR 1	Total	Male	Female	% for Women
Total number of direct beneficiaries	49,000	19,600	29,400	60.00%
CORE INDICATOR 2				
Area of land managed for climate resilience (ha)	3,000.00			
CORE INDICATOR 3				
Total no. of policies/plans that will mainstream climate resilience0				
CORE INDICATOR 4				
Total number of people trained	7,000	2,800	4,200	60.00%

Part II. Project Justification

1a. Project Description

1a. PROJECT DESCRIPTION

1.a.1 THE GLOBAL ENVIRONMENTAL AND/OR ADAPTATION PROBLEMS, ROOT CAUSES AND BARRIERS THAT NEED TO BE ADDRESSED (systems description)

Development Context. The population of Niger more than tripled in 30 years (INS, 2020), with 22,752,385 inhabitants in 2019 and an average growth rate of 3.9% per year. 51.6% of this population is under 15 years old. The Synthetic Fertility Index (ISF) indicates an average of 7.6 children per woman, the highest in the world. This population is essentially rural (83.8%) and derives most of its income from the exploitation of natural resources. The level of extreme poverty remains very high at 41.4% in 2019, affecting more than 9.5 million people (World Bank, 2020). This poverty particularly affects woman-headed households. 60% of women and 75% of female-headed households are under the poverty line. The country's economy, food security and the livelihoods of its rural communities are extremely vulnerable to the impacts of climate change, with an increasingly hot and dry climate and major fluctuation in rainfall across years. Increasing temperatures and increasing rainfall variability have severe impacts on agriculture, which is the main source of income and livelihoods for 87% of the national population. Mean annual rainfall has decreased in recent decades and dry spells have increased, while the onset and length of the rainfall season is highly variable, and rainfall intensity is increasing. These adverse impacts on the agriculture sector result in more prevalent food insecurity, poverty and malnutrition in Niger. In rural areas, 3 million people (12% of the population) were food insecure in 2018 and a further 29% of people were at risk. Agricultural land in Niger is mainly rainfed, but considering the changing climate, characterized by erratic rainfalls, the ongoing expansion of irrigated agriculture is a government priority. More specifically, in Tahoua, the population facing food insecurity or exposed to food insecurity represents 43.2% of the region inhabitants. Studies also indicate a potential increase in people in food insecurity in Tahoua from more than 500,000 in 2021 to more than 900,000 in 2022 due to drought and flooding[1].

Climate Change Impacts. In Tahoua, average annual minimum and maximum temperatures have increased by an estimated +1.2°C and +0.48°C respectively between 1991 and 2010 (Figures 1 and 2)[2]. Temperatures should continue to increase by at least 1°C across the region by-2050 compared to 1995-2014, and 2°C by the end of the century according to the SSP2-4.5[3]. According to the SSP4-8.5, temperatures would increase by 1.5°C by 2050 and up to 5°C by the end of the century (Figure 3). This is reflected in the Mean Temperature Anomaly for both scenarios, with important anomalies at the beginning of the rainy season, in May-June, when reliable weather conditions are critical (Figures 4 and 5).

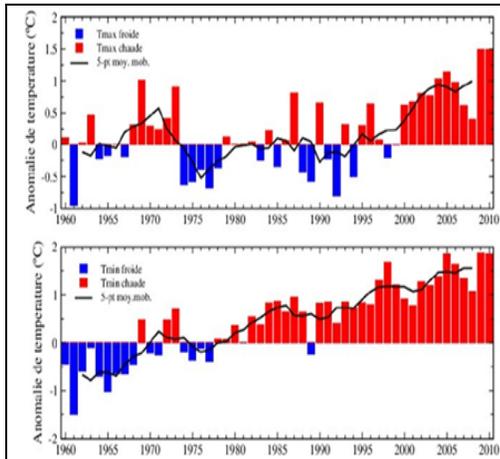


Figure 1: Variability of maximum and minimum temperature anomalies in Niger (AGRHMET, 2015)

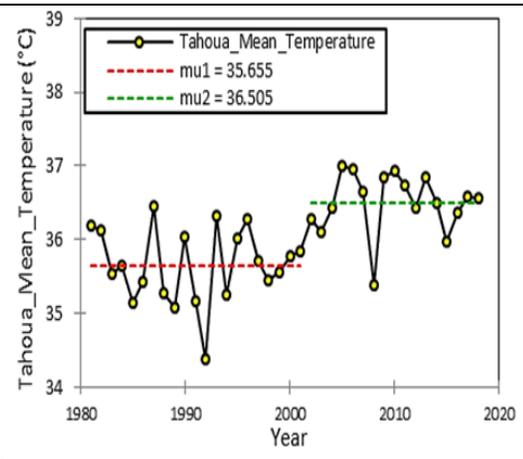


Figure 2: Variability of average temperature at Tahoua (Data from the National Centers for Environmental Information Source: National Centers for Environmental Information (NCEI))

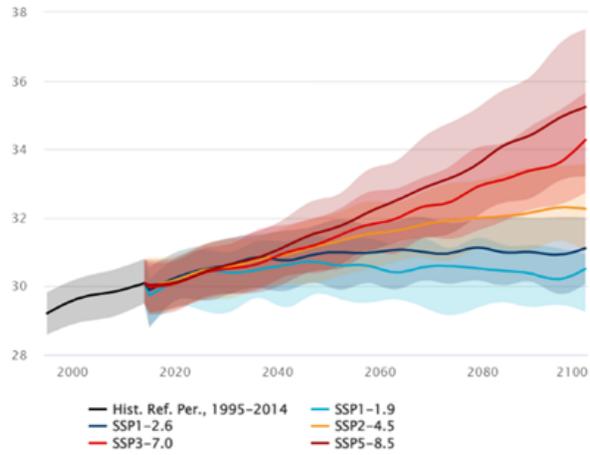
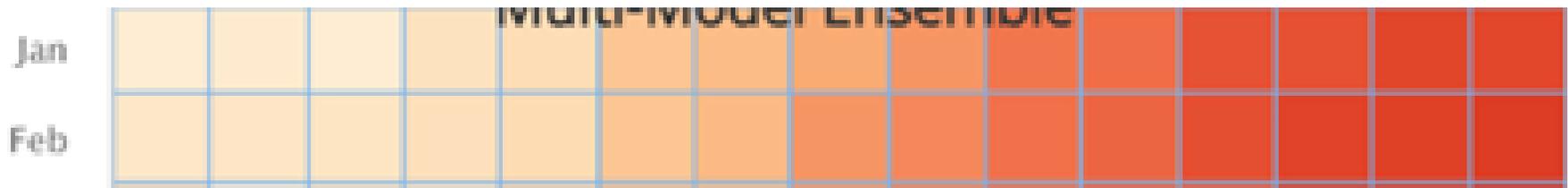


Figure 3: Projected Mean-Temperature Tahoua, Niger (ref. Period: 1995-2014), Multi-Model Ensemble



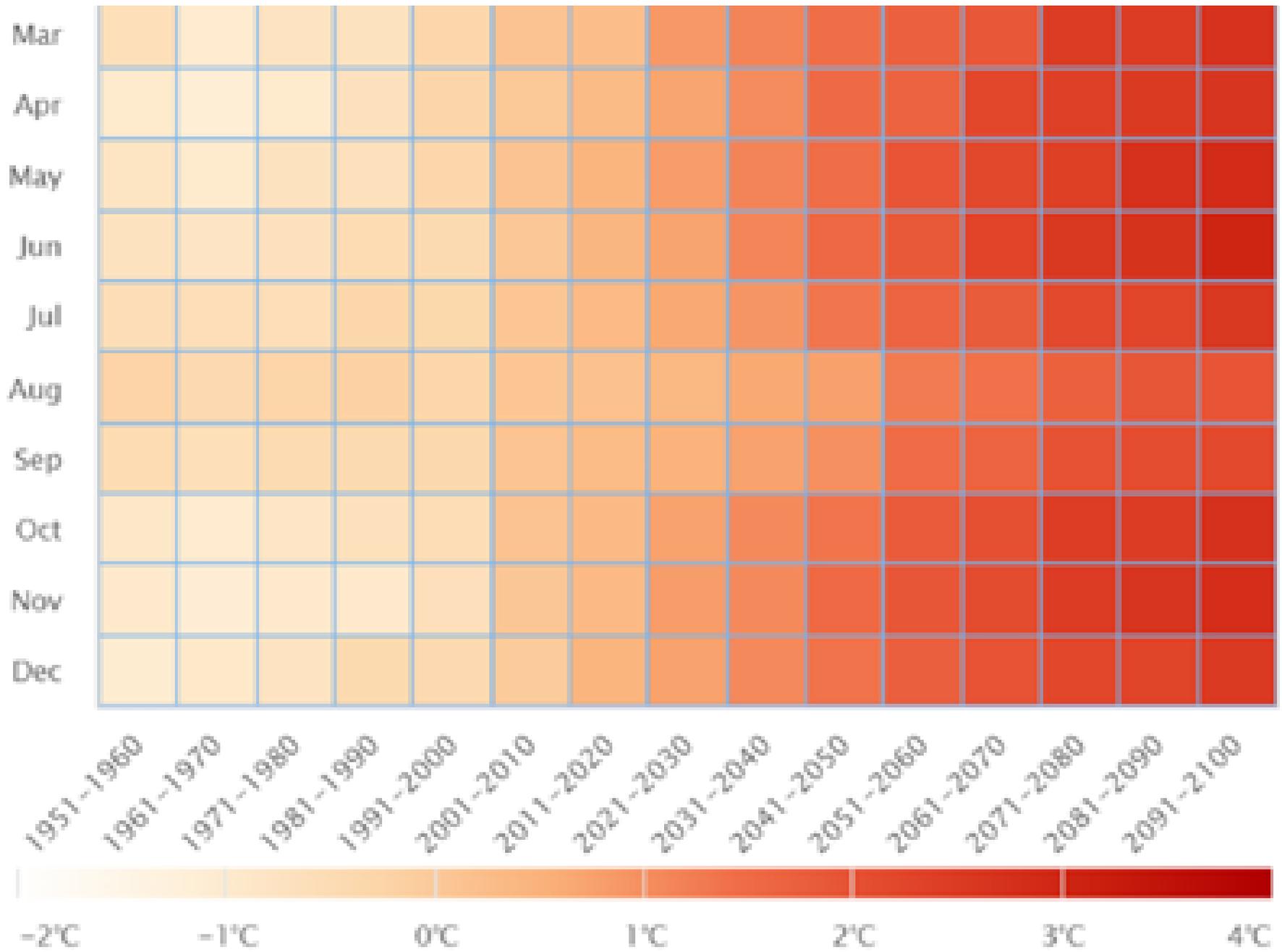


Figure 4: Projected Mean-Temperature Anomaly Tahou, Niger (Ref. Period: 1995-2014), SSP2-4.5, Multi-Model Ensemble



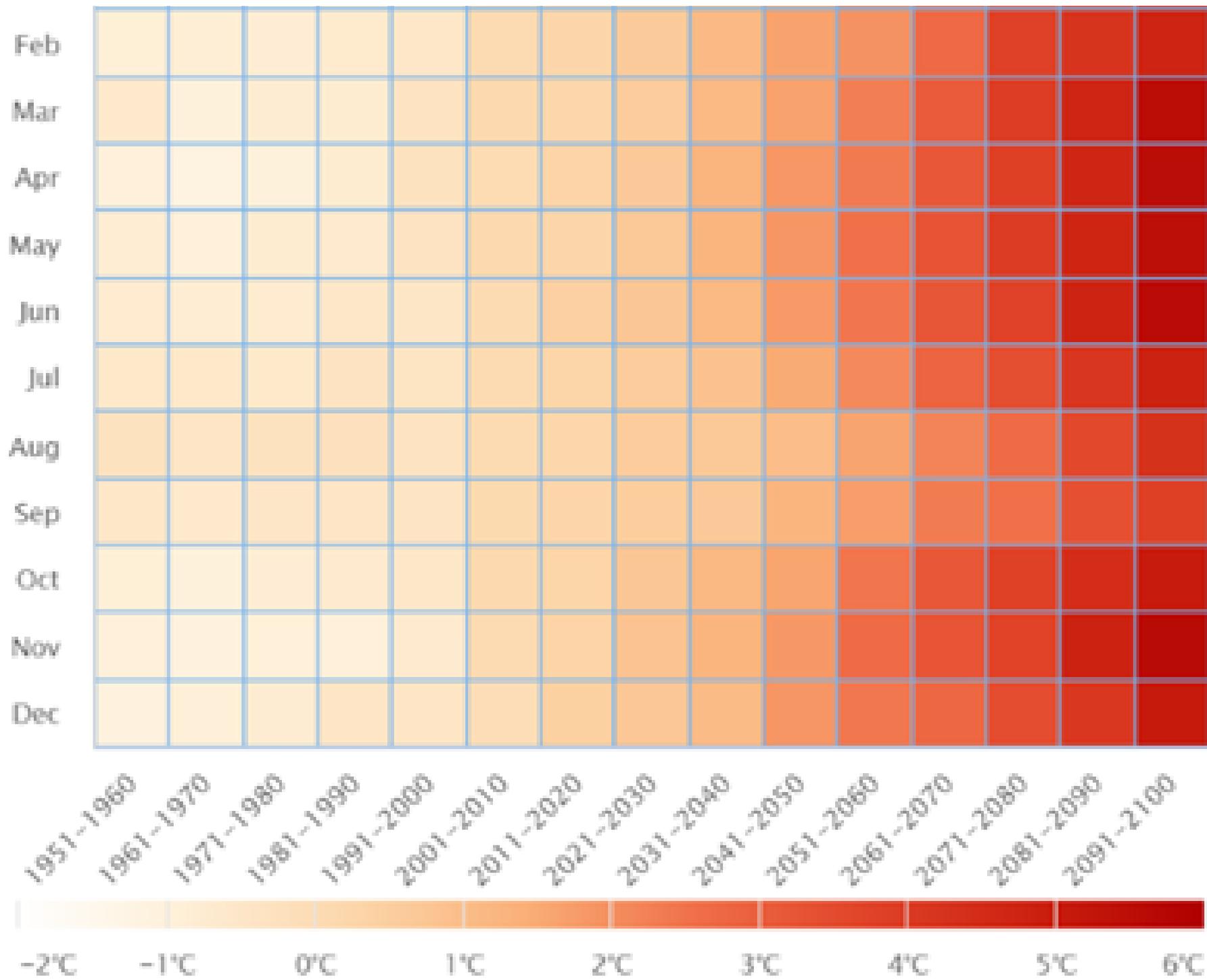


Figure 5: Projected Mean-Temperature Anomaly Tahoua, Niger (Ref. Period: 1995-2014), SSP5-8.5, Multi-Model Ensemble

This warming will accelerate the evapotranspiration and impact negatively the availability of surface water and the recharge of the groundwater resources, particularly alluvial groundwater. According to Niger's Third National Communication on climate change (TNC, 2016), surface and ground water resources in Tahoua are already impacted, in terms of volume, timing, quality and recharge, therefore directly impacting the characteristics of the aquifer system. Consequently, water availability for crop growth and livestock will be reduced, adversely affecting crop harvests and pasture availability and amplifying the impact of droughts or dry spells.

According to agro-meteorological data collected at the national level, Bilma, Diffa, Tahoua, Banibangou and Filingué are the most frequently impacted by droughts in the country. The rainfall deficit in Niger is on average around 20%, but can exceed 30% in the west and the center, with the agro-meteorological stations of Tahoua, Niamey and Tillabéry recording the greatest deficits. Early records indicated that, between 1960 and 1987, Niger's climate used to alternate between wet and dry periods every seven years. Since the beginning of the 1990s, rainfall variability has been characterized by an annual succession of wet and dry years (figures 6). In 2009, fodder production dropped dramatically due to droughts, of more than 11 million tonnes of dry matter compared to 2008, corresponding to 50% of the needs for livestock at the national level (MAG/EL, 2019). In terms of economic impacts, droughts and floods together accounted for an estimated 96% of economic losses (Niger's Fourth National Communication on climate change (July 2021)).

According to the daily rainfall records of 12 stations over 1960–2000, Tahoua receives less than 400 mm/year of total rainfall and is exposed to the occurrence of dry spell extending between 8 to 14 days (Barron et al., 2010). The increasingly high variability in temporal and spatial rainfall distribution, combined with high-intensity rainfall events, affect the water availability for agriculture development and food security, yield loss due to farm flooding, waterlogging of lowland crops (Barron et al., 2010; Salack et al., 2018), and induces an increase in surface runoff, as soil infiltration capacity is quickly exceeded.

This variability in rainfall is also reflected in the changes in the onset and duration of the rainy season. In Tahoua, between 1991 and 2010 early onsets of the rainy season were observed, but were often associated with extreme dry spells and considered as false onset situations (AGRHYMET, 2015). The projections for 5-day wet extremes (maximum consecutive 5-day rainfall - RX5day) with the line representing the regional model ensemble mean and the shaded area represents the model spread for the emission scenario RCP4.5 for Tahoua (figure 7) raises fears of increased flooding of agricultural crops with consequently increasing food insecurity. Indeed, under the SSP2-4.5 and SSP5-8.5, rainfalls are expected to be extremely variable during the rainy season (May to October), with up to 83mm above 1995-2014 average for the 2040-2059 period according to the SSP2-4.5 and 91mm according to the SSP5-8.5 (Figure 8).

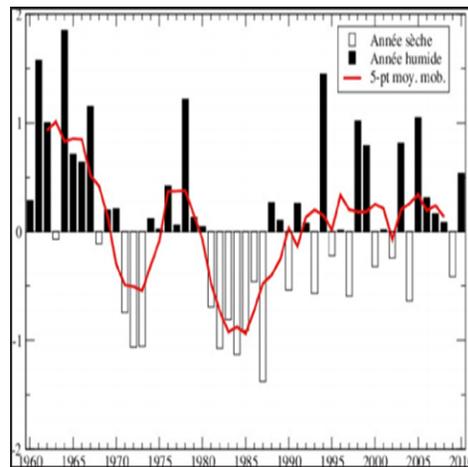


Figure 6: Inter-annual variability of rainfall between 1960-2010 in Niger. Source: Aghrymet

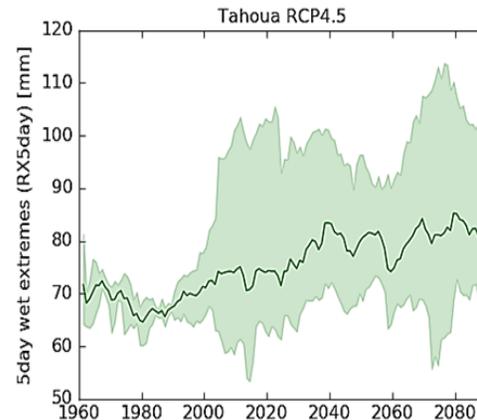


Figure 7: Projections for 5-day wet extremes for Tahoua. Source: Climate Analytics

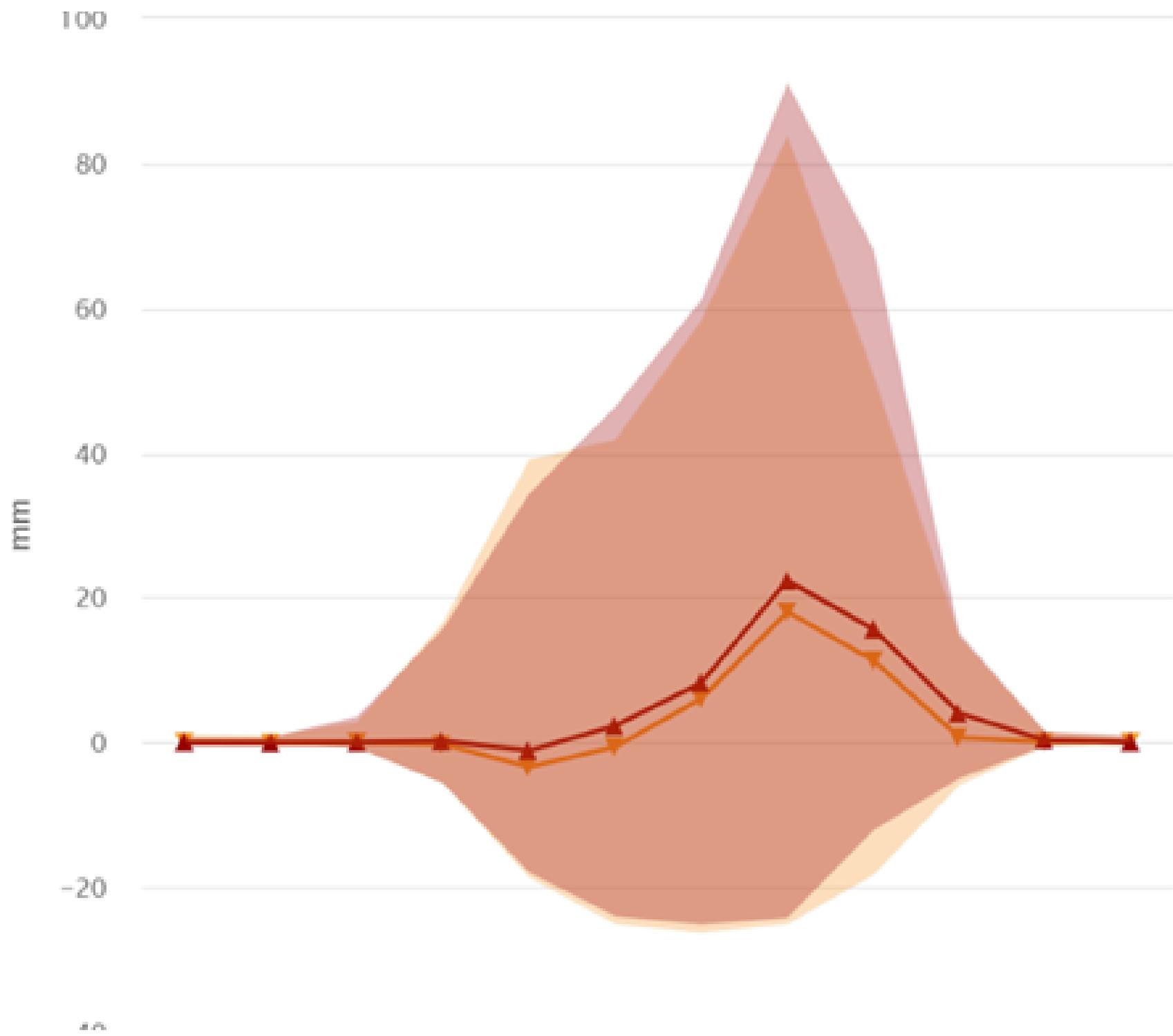




Figure 8: Projected Precipitation Anomaly for 2040-2059. Tahoua, Niger (Ref. Period: 1995-2014), SSP2-4.5 and SSP5-8.5, Multi-Model Ensemble

Farmers in the project intervention area are extremely vulnerable to the projected increased rainfall unreliability and temperature increase, in particular as they rely on regular rainfalls, functioning ecosystems, and have limited financial and technical capacity to adapt. Current adaptive practices include rural exodus relocation to more productive lands and pasture (including by clearing forests and wetlands) and the use of local short cycle varieties. The project intervention area is identified as one of the most vulnerable area to climate change in National adaptation programmes of action (NAPA), across the region of Tahoua.

Food security. Climate change is adversely affecting soil, and therefore the agriculture sector, having direct impacts on the food security of the population at the local and national level, and erodes farmer's incomes. Indeed, the various forecasts show that people's vulnerability to climate change will continue to increase in Niger, with a growing food insecurity. According to sectoral studies, there will be a fall in yields of 5 to 25% if no technological innovation to improve yields is delivered at producer level (Niger's Fourth National Communication on climate change, July 2021).

Multiple studies are also projecting yields reduction under the current changing climate. Millet/Sorghum will decrease by more than 10% by 2050 in the case of a 2°C increase in temperature and insignificant variations in rainfall. An increase of 3°C will lead to a decrease in agricultural yields of around 15 to 25% (Sarr et al., 2007; AGRHYMET, 2009). For rice, the projections under 1.5°C of warming shows a drastic reduction of grain yield by 15% in certain regions. According to Sarr et al (2007) and Agrhymet (2009), yields are expected to continue to decrease in the coming years in connection with the amplification of the climate change phenomenon. The available studies have shown that yields of crops such as millet/sorghum will decrease by more than 10% in the case of a 2°C increase in temperature and insignificant variations in rainfall by 2050. An increase of 3°C will lead to a decrease in agricultural yields of around 15 to 25%. The CNEDD confirmed these projections in the TNC, estimating that the reduction in water availability for crops and livestock will reduce yields and grazing areas availability, amplifying the impacts of droughts or drought pockets[4].

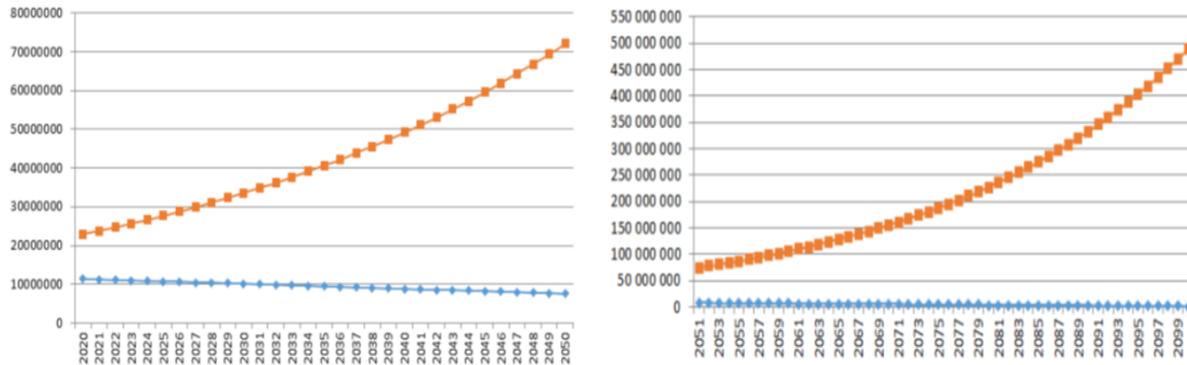
While more recent data on the impacts of climate change on future yields are currently unavailable, food insecurity continues to be a serious concern and guides national priorities, in particular in the context of the very high demographic growth projected for Niger. Indeed, environmental and other shocks (such as COVID-19) seriously put at risk the agriculture sector and food security, as reflected in the expected increase in people facing food insecurity in Tahoua for 2022 and the current food crisis in the Sahel, caused by the compounded impacts of drought, floods, conflict, and the economic impacts of COVID-19[5]. The IPCC also reported in the AR5 that estimated yield losses at mid-century is expected to be 22% aggregated across sub-Saharan Africa[6]. The more recent AR6 also projects negative impacts in important cash crops in West Africa such as Maize, Cassava, Groundnut, Sorghum and Cowpea[7].

Land degradation: In Niger, land degradation is essentially caused by climate change and anthropogenic factors. Weather conditions characterized by insufficient average rainfalls, and frequent torrential, irregular rains, poorly distributed in space and time, as well as frequent and strong winds, are the main climate-related causes of land degradation. It is estimated that each year, 100,000 ha of arable land are lost due to water erosion[8]. This is particularly threatening considering the reliance of rural communities in Tahoua on rainfed agriculture, projected population growth and climate change, having a structural impact on production systems[9].

The effects of this degradation are reflected in the decline in rural production (particularly agricultural, pastoral and forestry), the reduction of household incomes and the persistence of food insecurity, resulting in the exodus of populations to urban centers and coastal countries. Considering the significant impacts of land degradation, stopping and reversing current trends in land degradation by 2030[10] are among the priorities of the Government of Niger.

Forest resources loss: Natural forest formations have decreased from around 16 million hectares in 1982 to about 11,377,281 million hectares in 2020, due to pressure from climate change-driven aridification, clearing for agricultural land and timber harvesting for fuelwood. Over the period 1975-2013, rainfed crops cover increased from 12.6% in 1975 to 18.1% of the national territory in 2000 and 24.5% in 2013 (AGRHYMET, 2014)[11], at the expense of natural ecosystems. Climate impacts, associated with anthropogenic pressures on forest resources will lead to losses in forest formations, expected to decrease by 34,5% between 2020 and 2050, from 11,377,281 ha to 7,550,969 ha (Figure 9) and by 90% between 2020 and 2100, with 1,173,781 ha left by the end of the century (Figure 10).

In addition, low yields and the risk of increasing seasonal production losses have contributed to the expansion of cropland, leading to the encroachment on forests and savannas. The expansion of croplands also comes at the expense of grazing areas, exacerbating conflicts between farmers and breeders. These phenomena are closely intertwined and reinforce the vulnerability of populations to climate change, as well as the risk of food insecurity.



Text Box: Figure 9. Population and areas of forest formations evolution 2020 to 2050. Source: 4th National Communication

Text Box: Figure 10. Population and areas of forest formations evolution 2020 to 2100. Source: 4th National Communication

According to the 4th National communication, wood energy still accounts for 95% of the national energy balance in 2020, and would remain very high in 2050 with 89% of the total consumption. The demand for wood energy is estimated at 5,796,000 tonnes in 2020 and will increase to 10,556,000 tonnes in 2050, due to the sharp demographic increase. Based on these two series of predictions, the possibilities of supplying firewood will dwindle considerably if measures and alternative solutions are not rigorously adopted. Strong pressure on natural resources including water and land, the risks of environmental degradation linked to the overexploitation of its resources are also expected considering the projections of the National Institute of Statistics which predicts that the population of Niger will exceed 34 million inhabitants in 2030 and 68 million in 2050.

COVID impacts. At the community level, the impacts of COVID-19 include: (i) the loss of livelihoods for farmers due to lower sales, limited access to selling points because of movement restrictions, the closure of markets and the scarcity of agricultural workers; and (ii) the impact on the health and ability of households to maintain their activities - planting, maintaining crops, harvesting. The trade balance was marked by a drop in exports (-0.9%), due to health control measures on the transport of goods taken by certain countries and border closures to people. On the other hand, imports increased by 4.3% in 2020, due to the increase in purchases of food products and COVID-19 kits and equipment. The management of this health crisis has also affected internal revenue mobilization forecasts and created new expenditure, particularly for households, health and food security.

Security in the project area. The region of Tahoua is partly affected by the insecurity linked to terrorism. This creates instability and rural exodus, especially among young people and women. However, the project area is not directly affected by terrorism. This insecurity mainly concerns the extreme north of the region, along the border with the Republic of Mali. It can create displacement of populations towards the south of the region, particularly among young people and women; this can eventually lead to conflicts over access to and management of natural

resources such as water and pasture in the host areas. Measures are being implemented by the government to curb insecurity in the country in general, and in the Tahoua region in particular. These include the massive deployment of defence and security forces, the strengthening of social cohesion between the communities involved and the reinforcement of collaboration between these communities and the government.

This project aims to address the problem of food insecurity in the targeted communes of Tahoua, worsened by the impacts of climate change on the agriculture sector. Farmers rely almost exclusively on rain-fed agriculture, which is threatened by the increase in temperatures, the unreliability of the spatial and temporal distribution of rainfalls, and the increasing risk of floods and droughts.

Underlying root causes of maladaptive practices for the agriculture sector are the high poverty rate and population growth. High poverty lead to the lack of sustainable adaptive practices, with the encroachment on preserved ecosystems often perceived as the most immediately available solutions. This is further reinforced by the increasing demographic pressure on natural resources.

The preferred solution is to enhance the resilience of the agriculture sector in the selected communes of Tahoua to climate adverse impacts through climate smart agriculture (CSA) practices, ensuring food security. This will involve an ecosystem approach to offer a buffer to the impacts of climate change for agricultural lands. The impacts of droughts and floods need to be understood beyond the productive areas, by taking into account the ecosystem services healthy wetlands, forests or savannahs offer. In particular, a functioning wetland or forest will offer significant benefits in terms of water availability and management in the event of floods and droughts, with improved water infiltration, the recharge of aquifers, improved wildlife and biodiversity, soil stabilization, etc. The preferred solution will therefore fully integrate the restoration of surrounding ecosystems as a Nature-based Solution to climate change (component 1) to complement CSA practices (component 2). The dissemination and upscaling of these practices will be supported by the development of SMEs and the improved access to financing for vulnerable communities for CSA and the maintenance of infrastructure and investments (component 3).

However, the resilience of the agriculture sector and the adoption of agriculture techniques for food security is facing the following barriers:

Barrier#1: Limited technical and financial support from the Government to address climate-induced land degradation: Agricultural fields are increasingly exposed to flooding, erosion and silting due to climate change and adverse practices such as deforestation. However, with limited public budget, only one agriculture advisor per 1,000 producer household is in place, and insufficient investment in infrastructure and restoration are undertaken. In addition, Niger's fiscal balance has been negatively impacted by the impacts of COVID-19 and sovereign debt became even more difficult to assume.^[12] The economic downturn, fiscal pressures, and tightening of financial conditions are giving rise to large financing gaps in Niger's public finances and balance of payments. According to the International Monetary Fund (IMF), the country has a limited capacity to borrow additional loan financing, considering the overall fiscal balance including grants which is projected at -5% in 2020. In particular, the budget allocated to agriculture by the government remains well below the financing needs to adapt the agriculture sector to the adverse effects of climate change.

In addition, in spite of the food crisis the Sahel region is facing, the war in Ukraine has led to a large reduction in ODA following the reallocation of resources from important donor countries such as Denmark or Norway. Indeed, Niger does not have the resources in the national budget to address the climate crisis in the Agriculture sector and is highly dependant on international support. This is reflected in the NDC, with the distinction between unconditional adaptation and conditional adaptation, budgeted at US\$2.4 billion for 2021-2040 and US\$4.343 billion respectively – indicating that 64% of the needs for adaptation financing are expected to be met by external financing ;

Barrier#2: Low knowledge and technical and technological capacity to adopt climate-smart agriculture and ecosystem restoration practices. Even though some traditional practices in terms of ecosystem restoration and protection exist and have been reintroduced, there is a need to adjust these practices to the projected rapid impacts of climate change and to introduce CSA practices. . Due to this lack of experience and adequate sensitization efforts, producers are reluctant to adopt new practices as such shifts are perceived risky. This is particularly true in the case of ecosystem restoration practices, which often do not yield immediately perceivable benefits due to the period needed for the ecosystems regenerate.

In addition, successful strategies (including developed by farmers) are not consolidated and disseminated to generate the larger replication of the practices within and outside the community. Due to the limited availability of deconcentrated state agents, the lack of communication networks and the poor management of lessons learned at the local level (within local authorities, CSOs, NGOs or community groups) and at the national level (within research institutions and universities), successful practices are not replicated beyond the areas of intervention. This also translates into a lack of data and knowledge at the national level on local agricultural production and the impacts of climate change, thereby adversely affecting the informed planning for adaptation at the national level – either using Government's resources or external donors' funding.

Even though progress was achieved under Great Green Wall Initiative (GGWI), including in Niger and Tahoua, and the growing interest from Governments, donors and other stakeholders, key pressing areas of intervention still require support to implement the three strategic axis of the GGW in Niger: (i) promoting the good governance of natural resources and the Local Development with the involvement of local populations and for their benefit, (ii) the improvement of food security through the valuation and sustainable management of agrosylvopastoral

production systems and (iii) knowledge management. The GGWI was envisioned as a large scale programme that would ensure the generation, compilation and sharing of knowledge and lessons learned, but climate risk management support is still urgently needed.

Finally, CSA and ecosystem restoration practices are not introduced as complementary measures and their self-reinforcing adaptive benefits are not always understood by communities and local stakeholders. The relationship between the pressure on surrounding ecosystems and the increased vulnerability to climate change is not clearly understood due to the delayed and indirect nature of the benefits of restored and protected ecosystems as opposed to the direct revenues and livelihood issued from new agricultural land;

Barrier#3: Vulnerable populations don't have access to low-cost, long-term financing for innovative climate-resilient techniques including solar water pumping systems, water-efficient irrigation networks and other CSA practices. For the communities recognizing the impacts of climate change and wishing to invest in adaptive practices, they face barriers to access financing. Local communities are often perceived by traditional financing institutions (including Micro-Finance Institutions – MFIs) as too risky and not creditworthy and in turn, local communities are not able to afford the high interest rates offered by these institutions.

Despite the availability of an estimated US\$2.1 billion of total assets within the financial sector in Niger, constituting an important source of finance to catalyze in order to meet the investment gap for climate resilient agriculture, farmers are not able to access affordable financing for innovative climate resilient technologies. This can be explained by: i) the lack of capacity of Banks and Microfinance Institutions (MFIs) in green lending, ii) the high interest rates charged by banks and MFIs on lending products for climate resilient agriculture, iii) the weak and/or in-existent regulatory frameworks on agriculture resilience and renewable energy technologies financing. Niger's financial system does not provide adequate and sufficient financing that responds effectively to the needs of the national agricultural sector.

The financing available does not allow access to medium and long-term credit to finance equipment or structured finance to meet the sector's supply or value chain needs. While agriculture contributes more than 35% of GDP and employs almost 85% of Niger's working population, the proportion of the banking sector lending to agriculture is extremely limited (less than 1% of total lending). The factors that hinder the development of appropriate and accessible on-farm financial services are: (i) high credit interest rates (12% to 20%) with short-term maturities of under a year; (ii) insufficient supply of credit to meet demand ; (iii) non-financing of all agricultural sectors/activities due to the high risk perception and difficulties in debt collection, (iv) lack of guarantee mechanisms, and (v) the lack of capacity of Banks and Microfinance Institutions (MFIs) on financing small holder farmers, agriculture groups and cooperatives for climate resilient agriculture. Thus, it is necessary to create incentives for the financial sector to lower interest rates and make loans more accessible (with longer tenors) for agriculture groups and cooperatives and improve the profitability of their farms while increasing the resilience to climate change.

Even the Niger agricultural Bank's (BAGRI) has not been able to sufficiently support the agriculture sector. As of 31 January 2020, total outstanding loans, all terms included, amounted to 81 million USD, of which 13 million USD were for agriculture (17% of the total portfolio), while the estimated costs of the Agricultural Value Chain Development of the Strategic Programme for the period 2016-2020 is estimated at more than 268 million USD. From 2021 to 2025, the estimated annual financial requirements for priority resilience, water management and sustainable land management programmes are estimated at \$520 million. Given the aggravation of food insecurity due to climate change, the Government of Niger is implementing actions to migrate from rain-fed agriculture to CSA^[1]. While resources to support local communities adopt these practices are limited, there is a need to create an enabling environment for vulnerable subsistence farmers to develop into local MSEs, access microfinance, and replicate and scale-up the current investments. Currently, vulnerable farmers are not able to borrow due to the absence of sufficient guarantees and the lack of solvent organization of agricultural groups. There is therefore a gap to strengthen existing organizations and support the access to affordable credit.

Barrier#4: Unavailable, obsolete or inaccessible climate information. Currently, reliable climate information is not available or widely disseminated for local communities. The meteorological network is scattered through the country and does not provide data specific to the local level, preventing the adoption of adequate adaptive practices. When available, the shared information provides approximately downscaled warnings and forecasts that do not provide the needed accuracy to adapt the agriculture practices in a timely manner. In addition, forecasts and early warnings are not always disseminated in a way that is understandable by local communities – for instance, most of the information is only available in French and not translated in local languages.

Finally, the communication strategies often exclude most remote and isolated communities, who may not have access to phones or radios and are less accessible for scarce deconcentrated state services. There is a lack of locally-collected data, timely shared with meteorological institutions to issue agricultural advice, projections and early warnings. This communication channel also fails to share and consolidate lessons learned from CSA and other traditional and modern agricultural practices for a better management of knowledge at the national and regional level.

1.a.2. The baseline scenario and any associated baseline projects

In response to the chronic food insecurity, rural finance, agriculture livelihood development and land and forest management, the Government has developed a number of policies and strategies including:

- The strategic framework of the 3N Initiative, adopted in 2012, to fight chronic food insecurity. The first axis focuses on the growth and diversification of production. One of the government's priorities is the intensification and diversification of agricultural activities by providing the needed infrastructure to rural farmers to increase the level of production and incomes, including with irrigation. The objective is to increase the contribution of irrigated agriculture to the national agricultural production by 30% in the 5 coming years. To this end, it is planned to bring the area under irrigation from 85,000 ha to 125,000 ha. The ongoing initiatives in the country cannot alone cover priority needs. Indeed, the estimated costs to create and develop new areas of irrigated land are estimated at USD 580 million, and contributions from national budget and the various initiatives supported by the African Development Bank, World Bank, UNDP, IFAD, West African Development Bank and other technical and financial partners are far from meeting these financial needs.
- To scale up the efforts of the government, the Small scale Irrigation Strategy of Niger (SPIN), adopted in 2015, plans is to boost the irrigation sub-sector with additional 5,600 ha of irrigated perimeters annually. The challenge is to develop agriculture irrigation as defined under the United Nations Convention on Climate Change Framework (UNFCCC).
- The renewed Master Plan for Water Resources Development and Management, implemented between 2021 and 2040, is based on the results of the evaluation of the first phases of two national plans: PROSEHA (2016-2020) and of PANGIRE (2017-2020). The renewed Master Plan comprises multifaceted actions distributed within five priority axes: (i) improving knowledge of water resources; (ii) meeting drinking water and sanitation needs; (iii) increasing and protecting water resources; (iv) water control in support of the production sectors; (v) restoring the environment in support of plant production and the protection and/or preservation of water resources; (vi) water governance.
- Niger, with the support of several partners, developed in 2014 a Strategic Investment Framework on Sustainable Land Management (SIF-SLM). The overall objective of the SLM-SF is to prioritize, plan and guide the implementation of current and future SLM investments by both the public and private sectors and with all actors from the local to the national level. It constitutes a dashboard for coordinating in a harmonious and coherent manner the allocation of resources for financing and scaling up SLM actions by the various government agencies and development partners.
- The national gender policy, adopted in 2008, aims to reduce the gaps that exist in the distribution, control, and management of resources between men and women in Niger. The aim of the National Gender Policy is "to contribute to the achievement of equity and equal access of men and women in Niger" through two global objectives: (i) the establishment of an institutional, socio-cultural, legal and economic environment conducive to the achievement of equity and equal access of men and women in Niger; (ii) the effective integration of gender as a variable at all stages of the study and research processes on the socio-economic conditions of the populations, analysis, planning, implementation, monitoring and evaluation of development programmes and the systematic consideration of gender-related needs in the interventions of the sectors of activities in terms of objectives, strategies and actions. This project will establish the principle of equity and equal access for women and men to the different resources and opportunities available.
- Niger drew up its National Action Plan for Adaptation to Climate Change in 2006, the general objective of which is to contribute to the mitigation of the adverse effects of climate variability and change on the most vulnerable populations with a view to sustainable development. The NAPA identifies the most common climate risks in Niger, and general adaptation measures to guide and coordinate priority climate change adaptation activities in the country. This project will contribute to the achievement of the NAPA objectives through the development of 1000 ha of irrigated crops and the rehabilitation of 500 ha in different areas of the country. In addition, it will help mitigate the adverse effects of climate change through the reduction of CO2 emissions by using solar panels instead of generators for water drainage.
- Niger also submitted its Nationally Determined Contribution in 2015, with a revised version in 2021. The NDC lists the conditional and unconditional climate change mitigation and adaptation objectives for Niger. Climate change adaptation measures focus exclusively on the application of all Strategic Framework for Sustainable Land Management (SF-SLM) techniques on the different key ecosystems in the country.

In addition, the public consultations conducted as part of the PIF formulation identified several development projects operating in the rural sector in Tahoua region. A list of the projects can be found in annex D and their relevance will be further assessed during PPG phase. Currently, four major agriculture programs/projects are underway to strengthen the resilience of farming populations to climate change for ensuring food security. These are:

1. the Great Green Wall Initiative (GGWI) began in 2005 as a tree planting venture, but is today focused on integrated management of natural resources as a means to transform livelihoods and landscapes by improving crop and livestock productivity, restoring degraded lands, and promoting resilient landscapes for food security, taking into account the risks in the region, including conflicts and migrations. The initiative covers 8,000km, spanning across 20 countries, including Niger. Each country covered by the GGWI has defined its own set of priorities, appointed an agency to support the process and selected the area of intervention. In Niger, the National Agency for the GGW under the Ministry of Environment and the Fight against Desertification is monitoring the progresses and compiling lessons learned. As defined under the barriers, the three axis are (i) (a) Sustainable management of natural resources and (b) Capacity building of local stakeholders, (ii) the improvement of food security through the valuation and sustainable management of agrosylvopastoral production systems and (iii) knowledge management. These priorities have a strong focus on land restoration to benefit the agriculture sector and specifically target the region of Tahoua. As such, the proposed LDCF project is expected to directly help advance the GGWI.

2. the Project to Strengthen the Resilience of Rural Communities to Food and Nutritional Insecurity in Niger (2020-2026). Implemented by IFAD, this project operates in four regions of Niger, including Tahoua. It aims to promote local development through (i) the recovery of degraded land through assisted natural regeneration (ANR) and Water and Soil Conservation and Soil Defence and Restoration (CES/DRS); (ii) water harvesting for agricultural and livestock; (iii) small-scale irrigation; (iv) strengthening the capacities of producers and women's leadership through farmers' field schools (rainfed and market gardening), Small Livestock Innovation Systems (DIPE), women's emergency granaries and literacy centres; (v) the construction of market access infrastructure and rural tracks to open up production sites and facilitate trade; (vi) the development and promotion of youth and women's entrepreneurship.

3. The Integrated Project for the Modernisation of Livestock and Agriculture in Niger (PIMELAN), financed by the World Bank and implemented in 6 regions, including Tahoua (2020-2025). The project aims to improve the quality of agricultural support services and agricultural policies and to increase investments in agricultural production, processing and market access. The expected results are: (i) increased agricultural productivity for crop and livestock production systems, including aquaculture and fisheries, and improved food security, (by strengthening agricultural support services and policies); (ii) increased investment by different agri-food actors in agricultural production, processing and market access.

4. the Regional Project to support Pastoralism in the Sahel – Phase 2 (PRAPS-2), financed by the World Bank and starting in 2022. The objective of this project is to improve the resilience of pastoralists and agropastoralists in the Sahel region (including Niger, Mali, Benin, Burkina Faso, Nigeria and Chad). In Niger, the project covers five regions including Tahoua. The PRAPS will support national and regional transhumance committees by strengthening consultation between cross-border communes for peaceful transhumance. It will work to increase technical meetings between countries, the development of joint programmes for the development of cross-border pastoral rangelands recognised by common agreement (environmental preservation, rehabilitation/creation of water points, access to natural resources and sustainable management of landscapes and water access infrastructures, and improvement of livestock value chains), and to set up joint programmes for vaccination campaigns against the main cross-border diseases. In addition, the project will support any initiative aiming at a better use of digital technologies in the villages located in the communes crossed by the transhumance axes and the "intelligent pastoral centres".

5. the Project for Mobilization and Valorization of Water Resources (PROMOVARE), financed by the African Development Bank (AfDB), has a research and development character which is under implementation in the northern parts of the Tillabéry, Dosso, Tahoua and Agadez regions. PROMOVARE seeks to enhance the population's capacity to adapt to access reliable water resources for irrigation and the popularization of resilient seeds and improved irrigation techniques, taking into account climate change impacts. For the mobilization of water resources, PROMOVARE is also supporting the development of small-scale irrigation.

6. the Community Action Project for Climate Resilience (PACRC), funded by the World Bank, which aims to improve the resilience of populations and production systems to climate change to increase national food security. The PACRC invests in the improvement of sustainable forest management and grazing areas productivity. In addition to the mainstreaming of climate change into health, water and road infrastructure sectors, this project also aims to improve social protection and safety nets with : (a) the protection and rehabilitation of socio-economic community facilities prone to climate risks; (b) an operational cash transfer system for the most vulnerable households; (c) the remunerated seasonal labor intensive activities for poor households and 'food stamps' or 'vouchers' distribution to chronically poor households[2];

Due to the interrelatedness of climate change and development challenges, the baseline projects include an adaptation focus, however they are mainly tackling non-climate factors of land degradation, food insecurity and water resource management. These projects will provide an important baseline for the LDCF project additionality. However, despite significant efforts from the government and technical and financial partners in Niger, the key persistent barriers remain in the sector of agriculture to adapt to climate change and address the risks of food insecurity. Without the LDCF-funded interventions farmers won't be sensitized and supported to invest in ecosystem restoration and reverse the current trends of degradation. They won't be equipped and trained to adopt climate-smart agriculture practices that will reduce the vulnerability of their livelihoods to the intensifying impacts of climate change. Without the project local finance won't be unlocked for adaptation solutions in agriculture, to support currently climate vulnerable farming communities to turn into entrepreneurs in agribusiness, and thereby shifting towards climate resilient farming and food production.

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

The funded LDCF project will support producers to adapt to the adverse effects of climate change on their production. Exposure of fields to flood and silting will be reduced through climate smart agriculture and restoration of production areas as well as surrounding ecosystems. Indeed, restoration practices are currently not systematically adopted by farmers due to the perceived loss of arable lands through these practices. With the visible impacts of climate change, farmers tend to seek expand their agricultural land, at the expense of surrounding ecosystems. This further increases their vulnerability, with the increasing risk of a total crop loss during climate shocks (flood, drought). Restoration practices supported under the component 1 need to be part of a comprehensive approach, with complementary interventions that provide directly perceivable benefits. Component 2 will provide more immediate solutions for farmers to climate change by introducing CSA practices, thereby increasing yields and reducing vulnerability to climate change.. Component 3 will also be closely related to land restoration, enable farmers to organize into the functional farmers groups so as to mobilize their collateral and access local finance, including government funding, and expand on such farmer-managed regeneration.

A sustainable private financing mechanism will also be set up to finance agriculture practices resilient to climate change, benefiting vulnerable people, with a focus on women and youth. See the Theory of Change in Annex I.

Component 1: Land restoration for climate resilience of agricultural production systems

Outcome 1.1: Degraded land is restored to protect agricultural production systems against the adverse impacts of climate change

This component will align with the *GGWI* to strengthen the resilience of vulnerable farmers against the adverse impacts of climate change. While the *GGWI* has had limited results to date, with only 15% currently underway after more than 10 years of implementation, and most of the action plan for Niger still outstanding,, early experiences, including from other countries (in particular Senegal) will be highly relevant to identify sustainable and adaptive practices. The project will build on a combination of traditional practices and modern/innovative approaches to restore lands and benefit farmers, including lessons learned from ongoing projects such as the *project to Strengthen the Resilience of Rural Communities to Food and Nutritional Insecurity in Niger* which will support the recovery of degraded land in Tahoua (estimated co-financing of US\$10,000,000). Projects supporting pastoralism, including addressing conflicts between farmers and herders, such as the *Regional Project to support Pastoralism in the Sahel*, will also complement the restoration activities under this component by creating a peaceful discussion platform for exchange, including for the protection of restored ecosystems (estimated co-financing of US\$ 5,000,000).

Indeed, fully functioning ecosystems will improve water retention and reduce the impacts of floods and droughts on vulnerable farming land. During the PPG phase, an analysis of past and present land use and the restoration of degraded areas, taking into account the projected changes in climate will be conducted to better define restoration activities. Preliminary consultations during the PIF formulation phase identified past successful experiences implemented through past and ongoing adaptation projects such as the *Community-based adaptation project* (funded by the LDCF) with the introduction of farmer-managed regeneration, half moons, benches, rocky outcrops³¹, planting of trees of adapted species and Assisted Natural Regeneration (ANR) practices. The illustrations below present some NbS successfully introduced in Tahoua, as observed during the field visits conducted in March 2022.

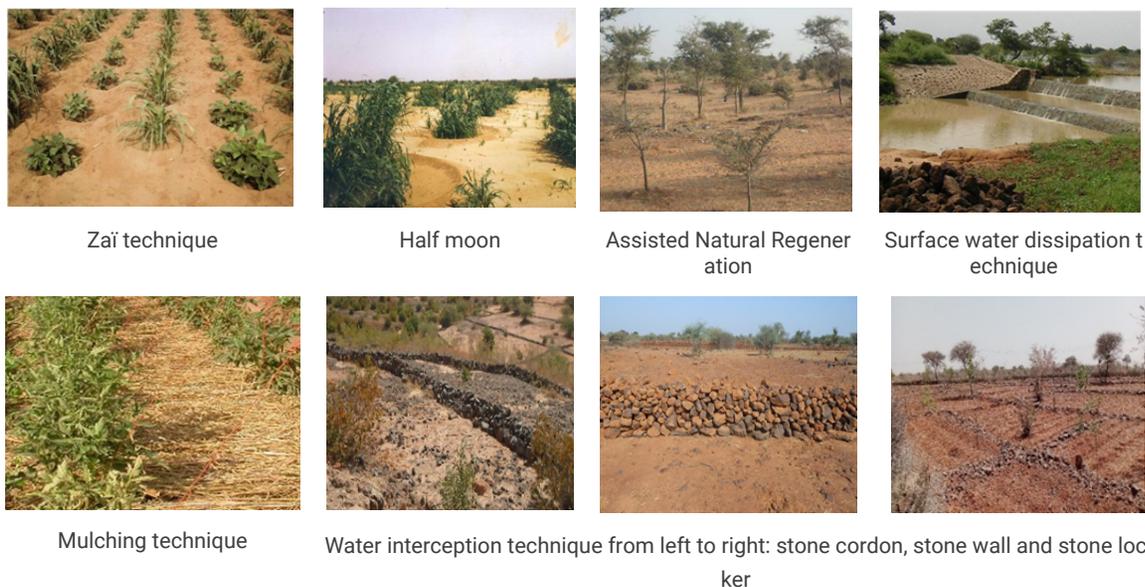


Figure: Successful land restoration and water mobilization practices. Source Public consultation held in March 2022 during PIF formulation

In addition, because of the importance of domestic fuelwood consumption in the project area, causing an overexploitation of wood resources, and in turn, soil and ecosystem degradation, the project will conduct trainings and awareness raising for the adoption of improved stoves and other fuelwood efficient practices within surrounding communities, where reforestation, afforestation and agroforestry will be implemented. This output will be conducted in close coordination with output 3.1.2. to support and provide incentives to local entrepreneurs to offer and disseminate a range of fuelwood efficient practices and equipment (including improved stoves) in surrounding villages. This will reduce the pressure on forest resources and ensure the sustainability of the project. During the PPG phase, the project will also explore opportunities under the UNISS (UN Integrated Strategy for the Sahel) programme, led by UNDP *Energy offer for the Sahel*. The project aims to increase access to clean energy for improved basic services and enhanced value chains, in particular in the agricultural sector. A pipeline of flagship joint projects is currently being developed to operationalize the offer and might offer potential for supporting the access to clean energy promoted under the LDCF project.

This component will have important mitigation and biodiversity co-benefits by restoring and preserving ecosystems that provide CO2 sequestration and provide living environments for the fauna and flora to thrive. It will also directly fits within the GGWI and aligns with its geographical and technical scope, including its focus on restoring ecosystems for food security. The project will be implemented through the following outputs:

Output 1.1.1. : Awareness raising and training programmes are conducted to sensitise local authorities and communities and equip them with information, skills and knowledge to support ecosystem restoration practices

Under this output, the project will work with local leaders as key partners during project design and implementation, to ensure their buy-in and their involvement in the sustainability and expansion of successful restoration practices. The engagement of local authorities and decentralized state agents will be ensured by setting up clear monitoring frameworks for the protection of restored ecosystems in the long-term. Local and regional planning and financing will be revised and supported to introduce the protection of ecosystems and the adoption and upscaling of Nbs. In addition, the project will establish or strengthen local committees involving beneficiary farmer groups for natural resources management.

Community groups will be involved in the targeted areas to ensure a common understanding and engagement in restoration activities. These measures will be implemented and the upscaling of the restoration activities achieved through the funding mechanisms set up under output 3.1.1, thereby increasing the access to funding for these groups in the long-term and ensuring the sustained protection of restored ecosystems.

Awareness raising and sensitization will be conducted with local communities to discuss the long-term benefits of preserving ecosystems for the agricultural production and food security at the local level. The discussions will cover the impacts of climate change; key ecosystems such as wetlands, savannahs and forests; their linkages with production systems; the climate change adaptive benefits they offer. In addition, the discussions will support the documentation of existing traditional knowledge, sustainable practices and agriculture knowledge, to build on local experience for restoration activities.

Under this output, the project will also create links with the stakeholders involved with the GGWI, in Niger and in other regions. Effective communication will be built along the entire project to share lessons learned and results from the project and build on the results of other activities conducted under the GGWI. Effective communication channels will be established with the focal points in the ministries involved in the implementation of the GGWI (the National Agency of the GGW under the Ministry of Environment and the Fight against Desertification, the Ministry of Agriculture and the Ministry of Community Development).

Output 1.1.2. Degraded ecosystems surrounding the farming areas are restored with the adoption of Nature-based Solutions

Based on the analysis of past and present land-use to be conducted during the PPG phase, restoration and protective practices will be introduced. The consultation conducted at PIF formulation stage identified a range of successful NbS that will be analyzed and considered to be introduced and/or upscaled in the project areas. Local communities will be engaged in the identification of restoration activities, as well as during the implementation of these activities, providing local employment and building on and strengthening local practices. NbS practices identified include Zai technique, half-moons, ANR, surface water dissipation techniques, mulching techniques, stone cordons, stone walls and stone lockers.

NbS will be introduced to restore degraded areas, increase the vegetation cover, protect forests, savannahs and wetlands from conversion to other types of occupation and reduce silting and water erosion (gullyng) along watercourses. These practices will be introduced in areas surrounding agricultural lands, in order to provide large-scale adaptive benefits. Restoring key surrounding ecosystems will provide important ecosystem services to farmers by increasing the water recharge, reducing land slides and water runoff during floods, increasing biodiversity.

Lessons learned will be systematically collected and compiled into actionable knowledge products and shared with the farming communities and other land users in the project intervention areas and other projects in Tahoua and in the GGW area. This knowledge will be particularly relevant for the community groups targeted under output 1.1.1 for the replication and upscaling of practices in the project area and beyond.

The Social and Environmental safeguards work conducted during the PIF and to be developed at PPG stage and during implementation will guide and recommend the selection process of degraded land plots to be restored. This work will ensure Free Prior and Informed Consent (FPIC) is obtained from beneficiaries and impacted communities. The necessary studies and assessments will be conducted to avoid the risk of land grabbing by the project and/or land used for other purpose by some communities to be turned into another land use, thereby adversely impacting their livelihoods. In addition, the project will support community land-use planning, through the consultations and local contracts and/or the formulation of local development plans.

Output 1.1.3. : Energy-saving equipment is promoted to reduce deforestation for firewood consumption

Considering the devastating impacts of increasing pressure on timber for household consumption and the consequences on protective ecosystems, this output will aim at changing the behavior of the rising generation in the use of wood energy. To do this, awareness-raising actions will be carried out throughout the project, targeting young people. A youth education campaign will be conducted to raise awareness of the accelerated depletion of local and national wood energy resources and its consequences on ecosystems and ecosystem services, and to advocate for the adoption of cooking equipment with low wood energy consumption and sustainable management. The project will closely coordinate with the activities conducted under the outcome 3 to incentivize supported MSEs to provide energy-efficient technologies to reduce fuelwood consumption. This will be ensured by conducting demonstration for the use and production of energy efficient equipment and demonstrate the viability of such investments. For instance, cook stoves are expected to reduce by 20% to 30% the wood consumption of beneficiary households. This campaign will be conducted through various channels: (i) trainings of young entrepreneurs, including through the presentation of economic potential of these activities, (ii) sensitization through the media (local radio, television, advertising posters); (iii) sports championships in the beneficiary localities; (iv) various school competitions and activities on the theme of wood energy resource management. The project will also identify the sites where these technologies will be most effective, including the availability of materials for their replication and maintenance. For cook stoves, the use of local materials such as banco (a local clay) is widely available and could ensure the dissemination of best practices.

In addition, during PPG phase, the project will map ongoing projects and interventions supporting the adoption of energy efficient technologies and seek partnerships with these interventions. For example, UNDP is leading an initiative on supporting clean energy access in the Sahel, which might offer potential collaboration in Niger.

Component 2: Promotion of Climate Smart Agriculture

Outcome 2.1. : Climate-smart agriculture techniques are promoted and reduce the vulnerability of smallholder farmers to climate

This component will promote climate-smart agriculture (CSA) techniques and technologies, adapted to the project intervention areas to reduce the vulnerability of smallholder farmers to climate change and enhance food security. Beneficiaries will be provided with practices and techniques for a comprehensive approach to tackle climate change. These practices will sustainably reinforce the resilience of communities against the adverse effects of climate change, improve agricultural production and beneficiary incomes, and contribute to carbon sequestration and thus GHG mitigation. Techniques and practices will include mechanical irrigation, with solar powered water pumps to reduce the impacts of water stress.

The project will build on the results of ongoing adaptation and food security projects implemented in Tahoua. to further improve the capacity to adopt CSA (barrier#2). Under the component 4 on knowledge management, the project will support the sharing of lessons learned and best practices and their introduction in the project design. In particular, the project will cooperate with the *PIMELAN*, which supports agricultural support services and agricultural policies, in order to disseminate lessons learned at the national level (estimated co-financing of US\$15,000,000). The project will also work closely with the recently approved GCF project *Hydro-agricultural development with smart agriculture practices resilient to climate change in Niger* to avoid duplication and exchange knowledge. Beneficiaries will also be supported to access additional resources to expand their access to irrigation, for instance through the programme for small irrigation and food security (PISA 2) (estimated co-financing of US\$5,000,000). The project will also coordinate with the recently approved GCF-funded project, the *Hydro-agricultural development with smart agriculture practices resilient to climate change in Niger* (AHA-AIC), supported by the BOAD (estimated co-financing of US\$5,000,000). Other projects supporting the access to water will also be consulted and engaged.

While these projects provide important lessons learned, it appears from the PIF that they are only supporting the local agriculture sector, without taking into account the entire ecosystem on which they depend. This component will be strongly connected with component 1 and recognize the need for restored ecosystems. Component 2 will aim at increasing agriculture production and thereby food security, taking into account and, when possible, taking advantage of the impacts of climate change. This will only possible in an environment where surrounding ecosystems are offering protection against the increasing risks of floods and droughts, as addressed under component 1.

The component will also strengthen the capacity of local producer to access, understand and use agro-climatic and meteorological information, and contribute to producing basic local data (rainfall, humidity, temperature) to inform farming practices (barrier#4). This local data will be shared at the national level to increase the availability of local data for planning and projections.

Output 2.1.1. Climate-resilient farming techniques, including irrigation are adopted to reduce losses and food insecurity

In the context of climate change, access to water resources is increasingly scarce and less reliable, and current water practices often lack sustainability. To limit water losses and achieve sustainable water savings, the project will promote drip and California irrigation systems. These systems have an irrigation yield of 90% and 85% respectively, and will help save up to 50% of water^[4]. Under this output, boreholes with solar pumps (kits composed of solar pumps, solar panels, inverter, regulator, and connection accessories for pumping), storage basins, piezometers, drip and California irrigation network units, reservoirs for storing irrigation water, etc. will be installed. The project will support the procurement and installation of these irrigation systems, which will be the property of community groups. MSEs supported under the component 3 will be incentivized and trained to develop businesses for the maintenance of this equipment, thereby creating sustainable frameworks for the procurement of spare parts and technical knowledge for repairs at the local level. In addition, community groups will be strengthened for the basic maintenance of the equipment. The installation of the equipment will therefore be closely coordinated with the activities conducted under component 3, and contacts will be established between community groups and entrepreneurs.

In addition, the success of crop intensification in climate-smart farming practices is based on the control of varietal performance, rigorous management of irrigation water, soil fertility and ecosystems, efficient management of irrigation areas and mastery of different cultivation techniques. To facilitate the implementation of the actions promoted by the project, training will be organized for producers. Manuals/guides and training for good practices will be adopted in water management, soil restoration, water pumping energy management, crop planning will be developed and made available to producers' groups. When extension services are not sufficient to ensure the adequate training and dissemination of these manuals, local stakeholders active in the area will be involved, this will include CSOs, NGOs or students and teachers from the Tahoua university.

Producers and community groups will receive training to design and implement a mechanism for servicing and maintaining sustainable infrastructure such as water-saving irrigation, solar water pumping equipment, etc. A technical study will be held at the PPG stage to clarify the sustainability use of underground water in the project zone. This study will also ensure FPIC from beneficiaries and surrounding communities who might be impacted by the pumps and the selection of sites for irrigation.

Output 2.1.2.: Micro-dams, dikes, bioengineering and other land stabilization methods are implemented to protect agricultural production from the increasing intensity and frequency of droughts and floods.

While the activities under component 1 are expected to provide protection against droughts and floods, considering the increasing intensity of both climate events, lowland works will provide an additional and more immediate protection to agricultural lands. In addition, restoration activities will only be fully functioning a few years after their start and communities need to be offered a more immediate solution to floods and droughts for the restoration activities to be successful and to avoid further encroachment on surrounding ecosystems.

Under this output, micro dams will be built to provide a reliable access to water for crops during drought pockets in the rainy season. In areas where flooding is increasingly recurrent, sites will be protected by dykes lined with channels and drainage equipment. This will include the preparation of sites, drilling and protecting sites from water erosion by building anti-erosion structures, flood protection infrastructures, implementation of processing koris and tree planting around project sites.

Similarly to the output 2.1.1, the maintenance and sustainability of these infrastructure will be ensured through the set-up of MSEs providing such services, with an access to the market for the procurement of spare parts or construction material and equipment. Community groups will also be entrusted the ownership of the infrastructure for their maintenance, and will be trained to provide small repairs. They will also be put in contact with the set-up MSEs for larger maintenance work.

Output 2.1.3.: Agroclimatic and meteorological information and early warnings are available and understood by farmers for climate-resilient decision-making

Access to meteorological and climatic information in real time allows better programming of agricultural activities and enhances agricultural productivity and production. It considerably reduces the risk of loss of agricultural investments due to lack of delay and / or irregular rains. Indeed, important losses are recorded in Tahoua due to the lack of adaptive practices to the changing weather events, that could be partly avoided by the timely availability of weather information. This output therefore plans to strengthen producers' access to suitable agro-meteorological information.

To eliminate information asymmetry, mobile phone services are becoming an important mean for providing farmers' groups with weather forecasts and market data. In each locality, three to five farmers' groups members will be identified by the beneficiary groups to receive timely weather information. They will be provided with mobile phones to disseminate the information received to the rest of the members of the group. Their capacities will be strengthened to ensure the flow of information in both directions. The dissemination of weather information through mobile phones will be reinforced by radio broadcasts in local languages. This activity will be implemented in collaboration with meteorological services, the National Center for Solar Energy (CNES), AGRHYMET and the Development Department. The project will also set up an early warning system to alert community members in case of disasters (floods, severe droughts, locust invasions, etc.), using a computer system,.

Farmers' groups will be trained to: (i) acquire and install a direct-reading rain gauge kit, thermometer, and anemometric recorder in each beneficiary village, (ii) collect local weather information, and process and disseminate it using ICTs in a language understandable to producers, (iii) establish, in each village, a committee composed of at least 5 people (from different groups of producers) to ensure the relay of weather information to the rest of the producers, (iv) develop and validate an implementation plan for the operation of the committees, (v) establish an early warning system through a contract with the institution in charge of agroclimatic information production for treatment and analysis of data collected on site and the creation of SCAP-RU (Community System for Early Warnings and Emergency Response) and OSVs (Vulnerability Monitoring Observatories). Considering the lack of access to climate information and EWS is a key barrier deterring access to finance for beneficiaries, these interventions will also contribute towards de-risking lending to these communities from financial institutions, linking to the activities under Outcome 3.

The equipment introduced will be the property of the communities and the decentralized services of the meteorological department will be responsible for maintaining them. Equipment introduced as part of the project will be small equipment such as rain gauge kits, thermometers and anemometric recorders and are easy to maintain. In past projects, considering the seasonal need for these information, the equipment was cleaned and stored at the end of the farming season and re-introduced at the start of the following season. This ensured the good management of the equipment in the long term.

During the PPG phase, UNDP and the formulation team might also explore opportunities for the involvement of Niger into the Systemic Observations Financing Facility (SOFF) which is still under design. This would engage the Government of Niger to maintain their meteorological equipment in the long term, receiving financial support for this maintenance upon the verification of the effective maintenance (through the effective transmission of climate information to the Global Basic Observation Network (GBON) under WMO).

Component 3: Facilitating the development of the private sector in local communities

Outcome 3.1. Women- and youth-led local Micro and Small Enterprises (MSEs) and entrepreneurs provide adaptive solutions to climate change with local banks and microfinance institutions sustainable facilities

Since the 1980s, several initiatives have been developed by the State and its partners to finance the agroforestry sector through banks, financial institutions and decentralised financial systems (SFDs). However, the financial resources mobilised are not accessible to producers and other value chain stakeholders and often do not meet their investment needs (barrier #3). Also, the access modalities and conditions developed by the projects and programmes are not always harmonised, creating confusion among the beneficiary actors. In order to establish a harmonised and formal framework for financing Food and Nutrition Security and Sustainable Agricultural Development, the State, with the support of Technical and Financial Partners, has set up a secure fund for agricultural investments, which centralizes resources to finance vulnerable farming communities and individual farmers. This is the Food and Nutrition Security Fund (FISAN), which has three facilities: facility 1: support to agricultural financing, facility 2: financing of agricultural structuring investments and facility 3: financing of agricultural advice, research and capacity building.

The FISAN strategy is expected to combine classical financing systems with innovative facilities. The traditional approach refers to mechanisms for mobilising and administering public resources for the rural sector on the one hand, and private sector funding, notably through financial institutions, on the other. The innovative approach will be to set up the Fund through a public-private partnership. This fund is seen as a strategic instrument for sustainable financing of public investments for agricultural growth and food security. It provides banking facilities for private investments including: (i) subsidies to reduce the costs of agricultural inputs and materials so that they are more accessible to producers; (ii) incentive facilities for commercial banks to intervene in the financing of private investments: guarantee funds, calamity funds and interest rate subsidies; and (iii) lines of credit for direct bank financing and refinancing of SFDs. The

FISAN works with banks, SFDs and other institutions in providing guarantees to deliver the activities under its first facility. Among them, the Agricultural Bank of Niger (BAGRI) signed a performance agreement with the FISAN to allocate up to US\$8,000,000 (XAF 5.5 billion) for the agriculture sector in 2022. The bank, established in 2011, in spite of its mandate, has so far not been able to disburse a significant amount of credit to the agriculture sector (only 12,75% was allocated to the agriculture sector) and the rates offered are not affordable to smallholder farmers. The BAGRI is being supported in its engagement by the GCF-IFAD project “*Inclusive Green Financing for Climate Resilient and Low Emission Smallholder Agriculture*” [5], in particular in its aim to “establish a Financing Facility within BAGRI with a line of credit to support concessional loan to (...) women and youth organizations (...)”. The LDCF project will therefore collaborate with the General Direction of the FISAN, the BAGRI and the GCF-IFAD project to bridge the financing gap for farmers groups and other Economic Interest Group (EIG) by accessing credits under the BAGRI at concessional rates.

The PIMELAN also supports the financing of the FISAN to benefit smallholder farmers through MFIs present in Diffa, Tahoua and Tillabéry. The project has set up two facilities that will provide (i) US\$ 6million of grant funding for agri-food funding for most vulnerable farmer groups, women and youth and other SMEs and (ii) US\$22 million of loans for producer groups and SME. As such, the PIMELAN is expected to provide significant opportunities for MSEs and vulnerable groups to access credits through MFIs such as Yarda- Tarka – Maggia, Capital Finance, ACEP or Daouré, operating in the region of Tahoua.

Under this component, the project will also collaborate with other ongoing projects that support the development of the private sector, including the *project to Strengthen the Resilience of Rural Communities to Food and Nutritional Insecurity in Niger*, supported by IFAD.

Through this component, and the establishment of partnerships with the FISAN, the BAGRI, MFIs, IFAD, the World Bank and other stakeholders (including UNCDF, pending further consultations), the project will address the barriers related to the limited access to funding from both public sources and private sources (barriers #1 and #3). Indeed, the project will collaborate with the FISAN, BAGRI and MFIs to support traditional and innovative approaches as defined in the FISAN strategy. The project will support banks and microfinance institutions, beyond the BAGRI, to develop customized financial products targeted towards smallholder farmers engaged in CSA, as well as alternative credit-scoring and collateral mechanisms that can ease lending to this cohort. Other activities that will contribute towards de-risking lending include the integration of individual farming units into community-based MSEs across the CSA and forestry value chains, training on both CSA and financial management, and the dissemination of climate information and EWS. The expected combined impact of these interventions will de-risk and unlock both existing financing available for the agriculture sector through BAGRI and catalyze new agriculture sector funding from other commercial banks.

An Agricultural Loan Facility will also be supported by the recently approved GCF project *Hydro-agricultural development with smart agriculture practices resilient to climate change in Niger* and lessons learned will be regularly shared with the project to adjust the approach and support farmers to access loans under this facility.

The MSEs supported through this component will be involved in the knowledge and lessons learned sharing activities conducted under the component 4. These activities will be based on the knowledge and lessons learned collected from the components 1 and 2. Indeed, supported MSEs will be exclusively involved in CSA and ecosystem restoration for climate change adaptation and will be embedded in the sustainability and upscaling strategy of the components 1 and 2. In particular, MSEs will be incentivized and supported to offer maintenance services for the irrigation and lowland development works introduced under the component 2. In addition, during the PPG stage, opportunities will be sought to develop a business model for the development of MSEs for the provision of climate data, including by engaging with the PS in the targeted areas, who might benefit from improved climate information.

Output 3.1.1. Agricultural groups and community cooperative funds are strengthened to increase their financial sustainability for the adoption of CSA

One of the main challenges facing local communities with regards to adopting climate resilient agriculture practices relates to the lack of adequate funding. Individual farmers are usually subsistence farmers, or receive very low incomes from their agricultural practices and are therefore not able to save enough revenues and time to invest in new practices. However, Niger has strong community groups, including farmer’s groups, which the project can build on to mobilize larger funding. These groups also offer a platform for knowledge and adaptive practices to be disseminated to new members in the long term. This outcome will strengthen these groups through two interventions:

- (i) The reinforcement of farmers’ associations business management capacity: Knowledge of entrepreneurial tools is necessary to trigger the effective functioning of agricultural cooperative societies. The project will provide, in the first 3 years, support for the development of business plans and the linking of farmers groups with their target customers. Working and awareness sessions will be organized with farmers groups, including the development and dissemination of material on business planning and entrepreneurship.

The farmers groups will be supported in the development of business plans adapted to each project site, building on the lessons learned from the component 3 on CSA. In addition, a selection of business plans supporting ecosystem restoration/protection and CSA will receive micro-grants for their implementation and will be technically supported by the project during the project lifetime, including through the sharing of lessons learned from component 1 and 2.

- (ii) The incubation of existing farmers vulnerable groups' to become CSA enterprises: Technical support will be provided to improve the management of community funds and to create an enabling environment for vulnerable agricultural groups to access finance for their members. The long-term objective is to promote the incubation of vulnerable agricultural groups in micro and small businesses for larger access to financial resources adapted to poor and vulnerable populations engaged in CSA. These groups will also benefit from the sharing of lessons learned from the activities conducted under the component 2 as well as the benefit from the reduced exposure to climate impacts from component 1. It is expected that 60% of the total beneficiaries will be women and 50% youth groups.

Output 3.1.2. : In collaboration with the FISAN, the BAGRI and MFIs, MSEs are supported to access loans for climate resilient agriculture financing

Under the FISAN strategy, and in close coordination with key stakeholders involved in supporting access to finance for vulnerable communities (ie. the PIMELAN, the IFAD-GCF project, the BAGRI, UNCDF, the BOAD-GCF project), MSEs will be technically supported for their de-risking to access credits at concessional rates. This output will target exclusively MSEs involved in CSA (including the maintenance of equipment and infrastructures introduced under the component 2), and agricultural value chains using clean energy (including cookstoves), with a strong focus on women and youth. These vulnerable groups will be supported to open a bank account with financial institutions and access credit to finance their CSA activities – including by supporting them to develop bankable proposals and request for credit. MSEs will also be trained in basic business management and accountability principles in order to increase the trust of MFIs. This de-risking will serve MSEs and IEGs to access funding from local MFIs and the BAGRI in the form of an agricultural loan. Close coordination with the PIMELAN, IFAD-GCF and BOAD-GCF projects will be conducted to ensure the access to innovative financing for targeted MSEs and IEGs in Tahoua. The beneficiaries will additionally receive training during the project lifetime as needed – including group trainings or investment-specific advice or guidance, to ensure they remain bankable for MFIs and have a long-term access to credit for their agricultural activities.

The LDCF project will also continuously work with local communities and financing institutions to identify opportunities and access innovative financial mechanisms in the project sites. It is expected that the loans accessed will finance (i) climate-resilient techniques for irrigation, (ii) solar-powered Californian or drip irrigation system for water control, (iii) water and energy management systems and practices, (iv) inputs for CSA (seeds, equipment, etc.), (v) the maintenance of the equipment and infrastructure introduced under the component 2; and (vii) the development of energy-efficient practices to reduce fuelwood consumption and support the activities under component 1 (in particular output 1.1.3).

Discussions are currently ongoing with the FISAN, the PIMELAN, the GCF-IFAD project, the BAGRI, and UNCDF to explore opportunities for partnerships and will be continued during the PPG phase, including with the recently approved BOAD-GCF project. The LDCF project will have a focus on technically de-risking the financing of women and youth for CSA (through trainings and the introduction and adoption of resilient practices), which will create a more conducive environment for the investments provided by other stakeholders, while partners will be involved in financially de-risking beneficiaries through different financing mechanisms such as subsidizing refinancing mechanisms, providing interest rate subsidies or guarantees.

Component 4: Knowledge Management and Lessons Learned

Outcome 4.1: Lessons learned on climate resilient agriculture and land restoration practices inform future projects in-country and elsewhere

Lessons learned from the project will be compiled and shared. This will be relevant for producer groups and farmers. This will be disseminated to municipalities, local agriculture administrations, the Government, civil society, regional institutions and donors working in the sector of climate change adaptation. In particular, innovative CSA and land restoration practices will be assessed and results and lessons learned collected in a format that will help advance the GGWI and other national and regional initiatives as relevant. Indeed, considering its geographical and technical alignment with the GGWI, the project will specifically ensure its results are shared and, in turn, lessons learned from the GGWI in Niger and other countries will be used and built on.

Under this outcome, the project team will also build partnerships with CCA projects, in particular the GCF project, but also projects focusing on governance and security to ensure security risks are integrated into the project adaptive management and mitigation strategy, and a more holistic approach is adopted.

Output 4.1.1. Project results are monitored and evaluated

The project will develop a close and permanent monitoring program of the physical investments made on the sites. The program will include a monitoring of networks, structures and other interventions. This continuous monitoring will be ensured by an M&E specialist, with support from the decentralized services of the Ministry of Agriculture, with support from local focal points if needed. These services will benefit from technical and material capacity building activities to carry out this monitoring program.

In addition, a Project Monitoring and Evaluation System will be designed and implemented in accordance with the requirements of LDCF (GEF) and UNDP to monitor: (i) the rate of execution of project activities, (ii) the evolution of the financial data of the project, (iii) regular and systematic recording and reporting of progress made against the planned project objectives through the establishment of a database, and (iv) evaluation of the impact of project activities on the target group and the environment; (v) gender-disaggregated data collection and reporting system for each project component, (vi) develop participatory tools to measure project performance, (vii) conduct beneficiary surveys to measure the effects/impacts (beginning, mid-term and completion), (viii) recruit a consultant in gender mainstreaming for supporting the executive entity, (ix) conduct an annual analysis/evaluation of the technical, economic and financial performance of the project, (x) Undertake mid-term evaluation, (xi) undertake final evaluation.

During the PPG phase, and assessment on the potential to use digital tools for a more effective and transparent M&E will be conducted.

Output 4.1.2. Lessons learned from the project are compiled, capitalized, and disseminated

The project monitoring and evaluation system will make a significant contribution to the management of technology performance and traceability of operations that have made it possible to achieve results and to make decisions useful for action. In this perspective, the results (outputs, outcomes and impacts) will be capitalized and archived electronically and physically to strengthen the documentation of lessons learned.

To guarantee the project contribution to local and national adaptation to climate change and the GGWI and improve ongoing practices, the different reports and studies supported by the project will be compiled to formulate a complete lessons learned document. This will contain, among others : (i) the efficiency and weakness of technologies and techniques, process, financial management and use at regional, national and local level; (ii) the best adaptation practices recommended for local, national and regional adaptation project ; (iii) the adopted solutions to address the weaknesses identified during the project formulation and implementation. To allow a better assimilation and implementation of the lessons learned by farmers, farmers' groups and cooperatives, the manuals will be translated into graphic images and into the official local language of Niger.

Field missions across different sites of the GGWI (in Niger and abroad) will be organized to specifically participate to the advancement of the GGWI. This knowledge will also be shared during the participation to workshops and other events on the GGWI. In addition, the Project management unit will organise exchanges with beneficiaries to appreciate the lessons learned on a practical level by producers, support exchanges with the technical services involved in the project, this will be done in 2 steps:

Development of technical and manual sheets: This will involve the production and dissemination of documents and documentaries on lessons learned and best practices tested under the project in terms of on actions to strengthen resilience to the adverse effects of climate change, increase productivity and production and mitigation of GHG emissions in the agriculture sector. To this end, the project will develop several technical sheets on the technologies and practices implemented by the project. These sheets will be designed at the end of the third year of the project and disseminated in the fourth year of the project. At least, the project will develop: (i) a fact sheet on the drip irrigation system, (ii) a fact sheet on the Californian system, (iii) a

fact sheet on the system of water pumping with off grid solar energy and the maintenance of solar equipment, (iv) a fact sheet on the sustainable management of hydro-agricultural development soils and the use of agricultural inputs, (v) a fact sheet on the optimal profitability of irrigation project activities with modern techniques, (vi) fact sheets on the degraded land and ecosystems surrounding farming areas restoration with Nature-based Solutions, (vii) fact sheets on efficient cooking stoves.

Knowledge sharing and dissemination of good practices for a climate resilient agricultural sector in Niger: This activity aims to share knowledge and disseminate good practices for a climate resilient agricultural for farmers groups and cooperatives (men, women, youth), local decentralized Authorities, local agriculture and environment offices, Private Banks and Microfinance Institutions executives, Niger's international technical and financial partners ; Great Green Wall initiatives in the State members, Economic Community of West Africa States (ECOWAS) and West African Economic and Monetary Union (WAEMU) Regional and national research centers on Climate smart agriculture, Commissioner to the 3N (les Nigériens Nourissent les Nigériens) Initiative ; Ministries in charge of agriculture, plan, and finance; Directorate in charge of Microfinance Institutions, National Debt, agriculture investment, Rural Engineering ; National Office of Environmental Assessments, Project management Unit and Executing agency...

1.a.4. Alignment with LDCF focal area and/or Impact Program strategies

The project is aligned with the below LDCF focal area.

LDCF Focal area	Project Focal area
Outcome 1.1 Technologies and innovative solutions piloted or deployed to reduce climate-related risks and/or enhance resilience	<p>Outcome 1.1: Degraded land is restored, and desertification is halted to protect agricultural production systems against the adverse impacts of climate change</p> <p>Outcome 2.1 : Climate-smart agriculture techniques are promoted and reduce the vulnerability of smallholder farmers to climate</p>
Outcome 1.2 Innovative financial instruments and investment models enabled or introduced to enhance climate resilience	Outcome 3.1. Women- and youth-led local Micro and Small Enterprises (MSEs) and entrepreneurs provide adaptive solutions to climate change with local banks and microfinance institutions sustainable facilities
Outcome 2.2 Increased ability of country to access climate finance or other relevant, large-scale, programmatic investment	Outcome 3.1. Women- and youth-led local Micro and Small Enterprises (MSEs) and entrepreneurs provide adaptive solutions to climate change with local banks and microfinance institutions sustainable facilities
Outcome 3.1 Climate-resilient planning enabled by stronger climate information decision support services, and other relevant analysis	<p>Outcome 2.1 : Climate-smart agriculture techniques are promoted and reduce the vulnerability of smallholder farmers to climate</p> <p>Outcome 4.1. Lessons learned on climate resilient agriculture and land restoration practices inform future projects in-country and elsewhere</p>
Outcome 3.2 Institutional and human capacities strengthened to identify and implement adaptation measures	<p>Outcome 1.1: Degraded land is restored, and desertification is halted to protect agricultural production systems against the adverse impacts of climate change</p> <p>Outcome 2.1 : Climate-smart agriculture techniques are promoted and reduce the vulnerability of smallholder farmers to climate</p> <p>Outcome 3.1. Women- and youth-led local Micro and Small Enterprises (MSEs) and entrepreneurs provide adaptive</p> <p>Outcome 4.1. Lessons learned on climate resilient agriculture and land restoration practices inform future projects in-country and elsewhere</p>

1.a.5. Incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and co-financing

By being integrated into the priorities of the GGWI, in particular in its objective to increase food security through an ecosystem management approach, the project will have a strong incremental cost reasoning in Tahoua, but also at the national and regional level. The project is strongly aligned with the priorities of the GGWI to be a flagship programme to combat land degradation, desertification, drought, climate change, biodiversity loss, poverty and food insecurity. The project is also aligned with the national strategies in terms of agriculture and climate (I3N, NAPA, NDC) and will help build a strong knowledge base on CSA and restoration for adaptive benefits to the agriculture sector.

The project will coordinate with the Integrated Livestock and Agriculture Modernization Project (Projet Intégré de Modernisation de l'Élevage et de l'Agriculture au Niger projet régional (PIMELAN), financed by the World Bank in Niger including Tahoua region. This project aims to : (i) improve the quality of agricultural support services and agricultural policies, increasing the productivity of agriculture for crop production and sedentary livestock systems, including aquaculture and fisheries, and to improve food security, by strengthening agricultural support services and policies (Component 1 and 2), (ii) increase investments in agricultural production, processing, and market access, creating synergy with other World Bank and IFC projects, focusing on agri-food value chains in areas offering the best economic opportunities at the national and international levels, focusing on women and youth, mainstreaming climate adaptation investment and mitigation options set out (Component 2 and 3). It is expected that this project will provide US\$15,000,000 of co-financing.

Under component 1, the project will adopt an ecosystem approach to risk reduction for producers. The project intends to build on past projects, traditional practices and regional best practices (including from the GGWI). While most of the relevant projects under implementation or completed are outside of the targeted areas, the project will assess and apply the lessons learned from a number of projects. This includes the AfDB project in Bouza Bouza, which implements ecosystem restoration work for CCA in the Niger Basin to benefit producers and improve food security. The GEF-funded project in the Niger Basin (GEF ID 5535) will also provide important lessons learned from the ecosystem approach to Integrated Water Resource Management in the 11 countries of the Basin. During the PPG phase, the UNDP team supporting the Energy Offer for the Sahel will be consulted to identify opportunities to expand the adoption of clean energy practices supported under the LDCF project. Lessons learned with ongoing projects will also be collected and collaboration with relevant projects will enable the adjustment of the project based on best practices. This will include the *project to Strengthen the Resilience of Rural Communities to Food and Nutritional Insecurity in Niger* and the *Regional Project to support Pastoralism in the Sahel*.

Under component 2, the project will offer a more direct contribution to the agriculture sector by supporting CSA, in particular irrigation practices. Due to the high reliance of the economy and the livelihoods on agriculture, Niger has been and is implementing multiple projects supporting the agriculture sector. This project will build on the lessons learned and challenges from these projects, in particular to ensure the sustainability and scaling-up of these practices. Indeed, many project results were observed to end at the close of the project while this project plans to set up systems to ensure its continuity. This component seeks to propose an effective mix of traditional practices and adaptive, more resource-efficient and more sustainable farming practices, following the CSA approach. In particular, the project will build on the lessons learned on the introduction of irrigation techniques in remote and vulnerable communities, as supported in the *Hydro-agricultural development with smart agriculture practices resilient to climate change in Niger* (AHA-AIC), supported by the BOAD, the World Bank programme in the Sahel "*Regional Support Programme to the initiative on irrigation in Sahel*", or the KfW *programme for small-scale irrigation and food security*". Component 2 will also build in the results of the LDCF-funded Project "Planning and Financing Adaptation in Niger (PFAN)" (GEF ID 8020) which supports the access to water for communities and supports the formulation of a sectoral National Adaptation Plan on water. Past LDCF projects such as "Scaling up Community-based Adaptation in Niger (CBA)" (GEF ID 4701) also offer important lessons learned in terms of water management for agriculture in the context of climate change. Finally, the "Project to Strengthen Agriculture's Resilience to Climate Change Through Modern Irrigation Techniques" (PRRA-CC) funded by the Adaptation Fund and the West African Development Bank (BOAD), which aims at supporting the adoption of irrigation by farmers for more climate change adaptation, will provide important lessons learned for the adoption of sustainable irrigation practices in the context of climate change.

Under component 3, the project will build on the FISAN strategy and existing platforms to increase access to financing for MSEs and IEGs and thereby the sustainability of the interventions. UNDP, through its network of experts and partners (including the GEF), has compiled a large range of experiences in supporting communities access to finance and develop their businesses. The CNEDD, UNDP Niger Country Office and the UNDP NCE team in Addis will support the project management unit in connecting with relevant partners in Niger and globally to exchange on lessons learned. This includes for instance the Project "Promoting innovative finance and community based adaptation in communes surrounding community natural reserves" in Senegal (GEF ID 5867), or UNDP's Insurance Risk Finance Facility which aims to strengthen the protection of vulnerable communities from socio-economic, climate and health-related disasters, by significantly increasing the role of insurance and risk-financing in development. During the PPG phase, consultations will also be continued with the FISAN, the PIMELAN, the GCF-IFAD project team, the BAGRI, and UNCDF to identify opportunities for collaboration on their active involvement in developing the private sector, and discussions will be initiated with the recently approved BOAD-GCF project. In particular, the PIMELAN and the GCF-IFAD project *Inclusive Green Financing for Climate Resilient and Low Emission Smallholder Agriculture* will provide significant opportunities for partnership and the availability of credit at an affordable rate in the long-term through its support to the BAGRI.

Finally, the project will closely coordinate with the GCF-funded project "Hydro-agricultural development with smart agriculture practices resilient to climate change in Niger" to ensure coordination in the support to the Agricultural Loan Facility. Potential co-financing will be sought during PPG phase, once the project management unit is in place.

Other GCF-funded projects will be relevant to the project, including the closing project supporting the formulation of the National Adaptation Plan (NAPs), co-implemented with the LDCF project (GEF ID 8020) that supports the formulation of a sectoral water NAP. In particular, the LDCF-CSA project will help advance the adaptation of two of the priority sectors defined in the NAP – agriculture sector and forestry sector. The NAP document should be available during the PPG phase and will be used to guide the identification of project activities.

UNDP and the Government will also provide co-financing for the functioning of the project, in particular project management costs, such as salaries of the project team, rent for the project offices, vehicles for movements in Tahoua and to Niamey as needed. The expected co-financing is US\$500,000 in grand co-financing from UNDP and an estimated US\$300,000 in-kind from the government.

Annex D provides a list of projects under implementation in Tahoua as well as GEF-funded projects in Niger. This list will be developed and detailed during the PPG phase to identify more opportunities for partnerships and coordination.

1.a.6. Global adaptation benefits

In the project area, most of the population is rural and largely depends on rain-fed agriculture in a context of climate change. Droughts and floods are recurrent. These phenomena are increasing in frequency and intensity and are experienced at least two years out of three, causing food insecurity and economic shocks with an accentuation of poverty and food insecurity.

The proposed project is expected to increase resilience and reduce the vulnerability of 7,000 farming households (around 49,000 direct beneficiaries) through the ecosystem restoration, CSA practices and private sector support, and indirectly benefit 200,000 people through improved water quality and quantity accessed from ecosystem restoration and the enabling environment for private sector development supported by the project. It is expected that at least 60% of these beneficiaries will be women, with a prioritization on youth and vulnerable people. A gender analysis and action plan will be developed during the PPG stage to ensure the project positively benefit gender equality, takes into account the root causes of gender inequality and doesn't reproduce inequalities. Considering the reliance of communities in Tahoua on agriculture for their livelihood and subsistence, the project will significantly reduce the risks from climate change on food security.

The project, by adopting an ecosystem approach, through Nature-based Solutions, and supporting surrounding key ecosystems (watersheds, forests, savannahs), will have long term adaptation benefits for the population surrounding these ecosystems. Through the component 1, farming livelihoods will be protected from droughts and floods, as well as properties and other resources. By supporting the understanding of local communities on the importance to maintain these ecosystems, the project is expected to have positive impacts beyond the project area and incentivize its replication.

The CSA practices introduced will also provide direct adaptive benefits, by reducing the pressure on inputs through a better management of resources. In particular, water resources and their access are expected to be significantly impacted by the impacts of climate change. Introducing practices such as efficient irrigation systems will reduce the reliance on increasingly irregular rainfalls.

Finally, the development of the private sector and value chains will increase the resilience of local communities by diversifying the sources of livelihoods and thereby the vulnerability to climate shocks. The access to financing for CSA practices will also provide a sustainable opportunity for the continuation and upscaling of these practices.

These results are directly aligned with the objective of the LDCF to strengthen resilience and reduce vulnerability to the adverse impacts of climate change in developing countries, and support their efforts to enhance adaptive capacity, as well as its three programming directions.

1.a.7. Innovation, sustainability and potential for scaling up

Innovation

The innovative approach of the project translates in the adoption of a comprehensive approach in all the areas of intervention. The project formulation recognizes the strength and challenges of past interventions and aims at building on this knowledge. More specifically, the project will associate usually disassociated practices and interventions:

- An ecosystem approach and NbS to support the adaptation to climate change of local farmers. The project will adopt a broader ecosystem approach, taking into account surrounding areas and their ecosystem services, in particular in terms of adaptation. These interventions will be conducted with local farmers to get their understanding and buy-in, and demonstrate the impacts of such NbS for agriculture.
- Traditional practices and new/innovative techniques. During the PPG phase, an analysis of traditional practices will be conducted to identify which practices in Tahoua, Niger or in the region offer the strongest adaptive benefits for the targeted areas. In addition, the project will introduce modern practices, in particular for irrigation (california irrigation, drip irrigation, etc.) that will be complementary to the traditional practices. As opposed to some NbS, which will require multiple years to yield their full potential, these practices will benefit farmers during the project duration and offer adaptive solutions during the droughts and floods that might be experienced in the coming years.
- Relying on existing structures and connecting with finance institutions. In Niger, communes have developed effective community or farmer groups that come together to share knowledge, information (including on climate) and sometimes to act as a financing mechanism for investments that individual farmers are not able to afford. The project will build on these structures and make them more attractive to finance institutions to further increase the access to finance for scaling-up after the project ends.

- Learning from very localized knowledge and lessons learned at the regional level. A strong knowledge management strategy will be developed and lessons learned will be shared and collected through the development of partnerships with local and regional initiatives. In particular, the field activities conducted at the local level will be used to strengthen the GGWI in Niger and throughout the different countries, and experiences will also be collected and applied from other countries.

The innovation also relies in the development of the private sector and the access to inclusive micro-finance for smallholder farmers. The trainings provided and the improved access to inclusive micro-financing opportunities offered through the project are expected to trigger the identification of innovative businesses, beyond the current reliance on subsistence farming and the sale of excess production for livelihoods. Smallholder farmers, with a focus on women and youth, will be empowered to propose, design and start new business ideas that offer adaptive benefits, building on the existing opportunities in the project area. The development of new CSA businesses and other businesses such as the production of clean-energy cookstoves will have significant adaptive and mitigative benefits in the long-term by reducing the reliance on climate-sensitive agricultural practices, consequently reducing the pressure on natural resources in case of climate shock.

Sustainability

The sustainability of the project will be ensured through the strong engagement of local communities in the decision-making and the implementation. Sensitization, awareness raising and trainings will be conducted with the support of local authorities and decentralized agents. The restoration works conducted under the component 1 will use the local workforce and will also benefit from awareness raising on the benefits of these restoration works. Ecosystem restoration works will also, by nature, ensure the sustainability of the adaptive benefits of the project and the need to preserve the ecosystems in the long term. While NbS tend to need more time than grey infrastructures to yield positive adaptive impacts, their benefits increase over time and often don't require any maintenance, only their protection by state services. These restoration practices will reduce the risk of climate change on beneficiaries, who will be able to carry out CSA practices introduced under component 2 in the long-term.

Under the component 2, resilient livelihoods will be supported to prevent any further encroachment on surrounding ecosystems as maladaptive practice,. The reliable access to water and the adoption of other climate-smart agriculture practices will reduce the risk of falling into food insecurity and, in doing so, reduce the resort to putting pressure on forest and other natural resources for subsistence.

The sustainability will also rely on the improved access to loans, supported under the component 3. By accessing finance for CSA practices, local communities will be able to finance the maintenance of their irrigation equipment, access inputs at the start of a new farming season or develop new activities in the agricultural value-chain. In addition, MSEs supported through the component 3 will be incentivized to offer maintenance services for the equipment introduced under the component 2, as well as to provide services and inputs to continue the practices and technologies introduced under components 1 and 2.

Scaling-up

The scaling-up strategy is closely linked to the sustainability strategy presented above. The restoration of ecosystem by communities and their sensitization and awareness raising will provide incentives and the adequate enabling environment to expand the restoration. The awareness raising will be essential to manage expectations with regards to the starting period for restored ecosystems to yields significant adaptive benefits, and help establish the link between restoration works and reduced impacts of floods and droughts.

The scaling-up will also be ensured by the improved access to financing for beneficiaries to expand their activities and access equipment and inputs to transform their products and/or get involved along the value chain. The support to the private sector is also expected to increase opportunities for youth to get involved in new livelihoods that will improve the living conditions in the targeted communities.

Finally, the linking with the GGWI will enable the sharing of lessons learned and knowledge to other countries and regions of the GGW. Good practices will be compiled and shared with the agencies involved at the regional level on the GGW to advance the objective of the initiative.

[1] Niger's NDC Chapter 5.7 Accent on Climate-Smart Agriculture. September, 26th, 2015

[2] Niger- Community Action Project for Climate Resilience Project on <http://documents.worldbank.org/curated/en/125631468291377061/Niger-Community-Action-Project-for-Climate-Resilience-Project>

[3] [ELD_niger_report.pdf](#) (eld-initiative.org)

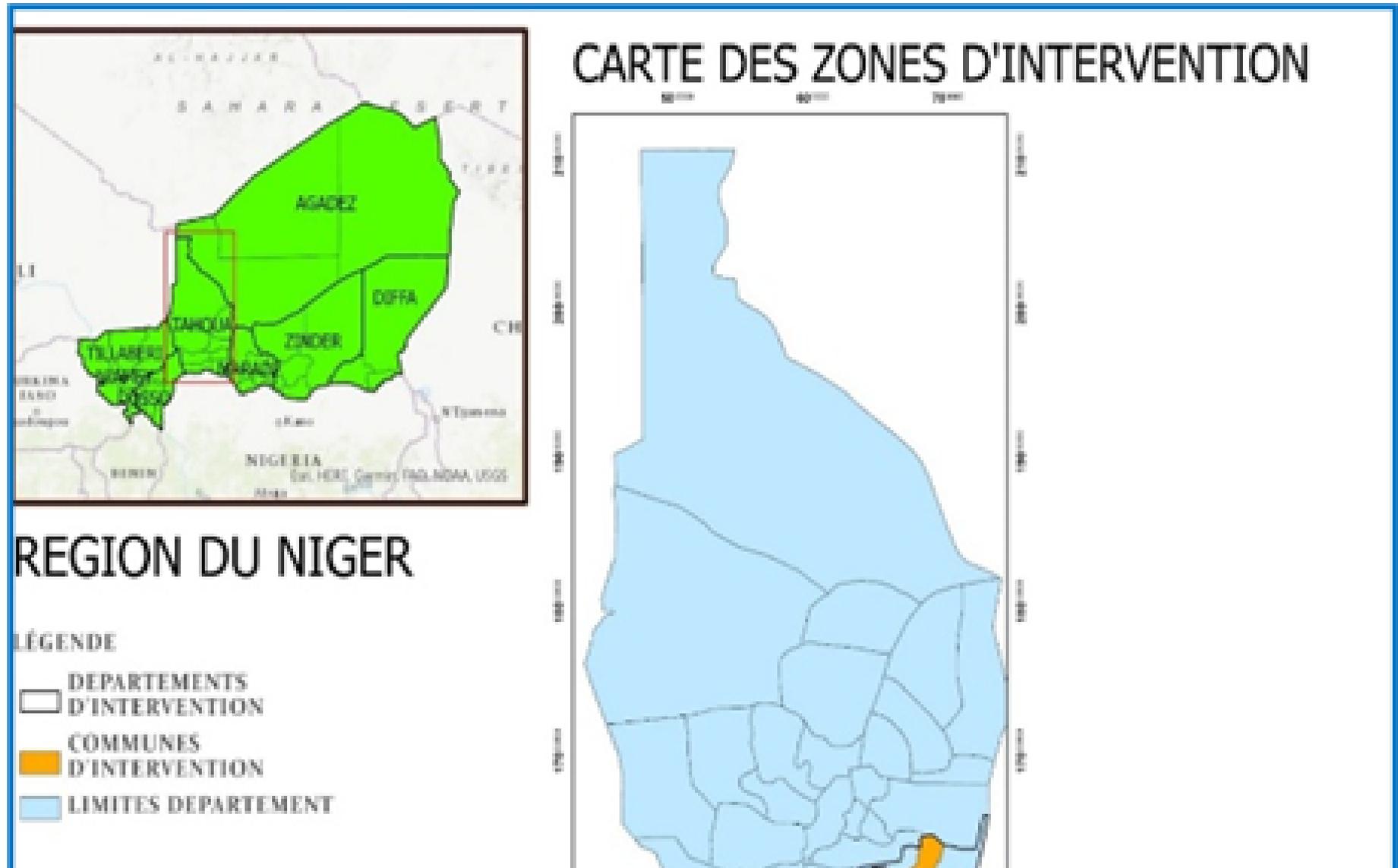
[4] Sustainable Development Goal (SDG) 6 Level of water stress freshwater withdrawals as a proportion of available freshwater resources. Target 6.4 By 2030, substantially increase water use efficiency in all sectors and ensure sustainable withdrawal and supply of freshwater to address water scarcity and significantly reduce the number of people suffering from lack of water. Indicator 6.4.2 - Level of water stress: freshwater withdrawal as a proportion of available freshwater resources.

[5] For more details, please refer to the project strategy <https://www.greenclimate.fund/sites/default/files/document/funding-sap012-ifad-niger.pdf> , p22

1b. Project Map and Coordinates

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

- The project area is located in the region of Tahoua in the Republic of Niger West Africa (see the map below). The intervention sites will be selected during the PPG phase. Tahoua region in Niger covers an area of 113,317 km². It is bounded to the north by the region of Agadez, to the northwest by the Republic of Mali, to the west by the regions of Tillaberi and Dosso, to the east by the region of Maradi, and to the south by the Federal Republic of Nigeria. It is located at 14°53'19" North and 5°16'09" East. The sites will be selected based on the selection criteria defined in the Annex E.



Source : IGNN
Auteur: MG. Chamssoudina

SCR : WGS 84

190

Kilometers



Figure : Project intervention Zone in Tahoua Region (Please see selection criteria in annex E uploaded to RoadMap section of the GEF Portal)

2. Stakeholders

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

Indigenous Peoples and Local Communities Yes

Civil Society Organizations Yes

Private Sector Entities Yes

If none of the above, please explain why:

In addition, provide indicative information on how stakeholders, including civil society and indigenous peoples, will be engaged in the project preparation, and their respective roles and means of engagement

During the PIF formulation, public consultations were held and several stakeholders were consulted at the local, regional, national and, international levels. These consultations resulted in a report on public consultations, summarizing the situation at the local and national levels, including past interventions, and the needs in terms of adaptation to climate change. These consultations were held based on the first project draft and were the opportunity to discuss the relevance of the proposed project.

More specifically, the partners involved were:

- (i) At the local level: agricultural groups and cooperatives, women and youth, as potential beneficiaries of this project,
- (ii) At the regional level: public services in charge of agriculture, irrigation, management of pests and pesticides, environment, forests, municipalities,
- (iii) At the governmental level: the ministries in charge of planning, of agriculture, environmental management and land-use development, agroclimatic and meteorological information, customs and tax services,
- (iv) At the national level: the United Nations Development Program (UNDP), UN Capital Development Fund (UNCDF).

During the PPG stage, series of consultations will be undertaken with stakeholders. Interviews will be conducted, following Free Prior and Informed Consent (FPIC) with stakeholders in each targeted municipality. Investigations will be carried out with key stakeholders in the agriculture sector, including farmers, SMEs, associations, and informal sector groups, international partners in order to collect information on the opportunities and constraints faced in terms of adaptation to climate change, and take them into account in the preparation of the full project document. NGOs in the project area will also be closely involved in the project preparation, in particular to benefit from their role on the ground in raising awareness. The project will mobilize several actors from public and private sectors through knowledge sharing platform.

The different ministries and directorates (including the CNEDD) will be partners in the project formulation and will support the access to information and potential stakeholders. Regional agencies such as Aghrymet, the Niger Basin Authority and the Panafrican Agency of the GGW will also be engaged to understand the context at the regional level.

The PPG formulation team will also engage with partners involved in past and ongoing relevant projects to identify lessons learned to be integrated in the project design. This will include the partners from the project listed in Annex D.

Table 2: List of potential stakeholders and their possible contributions and roles in the proposed project.

Stakeholder type	Stakeholder list	Possible contributions and roles in the project
Government ministries	Ministry of Environment and the Fight against Desertification, the Ministry of Agriculture and the Ministry of Community Development, Ministry of Livestock, Ministry of Hydraulics	They will be involved various aspects of the project technically supporting the communities in the implementation of adaptation activities. They also benefit from capacity building in this project. The Agency of the Great Green Wall, under the Ministry of Environment and the Fight against Desertification will

		Will be closely engaged in the implementation of the project activities to disseminate lessons learned and benefit from partnerships and collaboration with other initiatives.
National organizations	SE/CNEDD, High commission to the initiative « I3N », National Meteorological Direction	They will be involved various aspects of the project technically supporting the communities in the implementation of adaptation activities. They also benefit from capacity building in this project.
Regional and local administrations	Local authorities in Tahoua (Governorate, Regional Council), mayors from the identified communities, Regional Directions (Agriculture, Environment, Community Development, Hydraulics, Sanitation, Meteorology), Regional chamber of Agriculture	Municipalities' staff, local authorities (e.g. village leaders) & community organisation (including women & young groups, farmers & pastoralist associations, etc.) will be project target groups contributing to the identification of key project activities, institutional arrangements, and stakeholders' involvement.
Community-level stakeholders	Farmers, herders, farmers groups	They will be the direct beneficiaries and the project will strengthen their capacity and support to reduce their vulnerability to CC. In addition, they will be involved in the management of field activities
NGOs/CSOs	CARE International, LWR, Plan Niger, Karkara, AREN, AGIR	Part of stakeholder consultation, provides opportunities for lesson learned from ongoing projects and linkages to NbS mainstreaming opportunities
Research institutions	Aghrymet, National Agronomic Research Institute in Niger (INRAN), Tahoua University	Involved in the identification and dissemination of climate-resilient agricultural practices, and recipients of training. Support the development of the climate information systems that contribute to research development and assistance to target communities on understanding climate impacts and adopting climate resilient activities.
Private sector	FISAN, BAGRI, MFIs (ie. Yarda- Tarka – Maggia ; Capital Finance ; ACEP ; Daouré) in Tahoua, MSEs	The BAGRI and MFIs active in Tahoua will be engaged in the provision of micro-loans at concessional rates to benefit the supported MSEs, with a focus on women and youth. Partnerships will be sought with the PIMELAN and the GCF-IFAD project to ensure the supported MSEs and IEGs are able to access credit through the FISAN. MSEs will be supported to be de-risked (through trainings and access to resilient agricultural practices) to access financing from BAGRI and MFIs.

		<p>Organize and support groups for income Generating Activities.</p> <p>Contracting for the provision of micro finance for communities and producers</p>
International organizations	UNDP, EU, WB, UNCDF, Panafrican Agency of the GGW, IFAD, GIZ, other agencies involved in the GGWI at the regional level,	<p>Engaged in consultations and opportunities to build capacity on CSA, NbS and private sector development in ongoing projects explored.</p> <p>Options for partnerships and collaboration with the Panafrican Agency of the GGW, IFAD and international organizations involved in the advancement of the GGW will be explored during the PPG phase. In particular, the Panafrican Agency of the GGW will be a central partner for the knowledge generation and dissemination of the lessons learned and experiences from other initiatives. The Panafrican Agency of the GGW will also be key to connect the project with other relevant initiatives/agencies supporting the GGWI. These stakeholders (in Niger and in other countries of the GGW) will be engaged under the component 4 and exchange visits might be organized as relevant (to be defined during PPG phase and continuously explored during the project implementation).</p>

3. Gender Equality and Women's Empowerment

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

The gender element will be central in the project considering the limited access of women and youth to land for agriculture production. During the PPG phase, youth and women groups and associations will be consulted in order to gather their opinions and take into account their concerns in the preparation of the full-size project, following FPIC. During the implementation, programmes to strengthen capacities and mechanisms to support farmers groups will particularly target youth and women. In particular, women and youth will participate to "cash for work" activities under the component 1, which are mainly conducted by women and youth in Niger (an estimated 60 to 80% depending on the regions).

Under component 2, the agricultural activities performed by women will be targeted by the introduction of CSA practices (e.g. mixed vegetable gardens, diversified farming methods etc). The CSA measures will be specifically supported to improve practices and technologies and increase their profitability and dissemination. The gender assessment to be conducted during the PPG phase will review more thoroughly the income generating activities conducted by women in the target areas and propose adaptive interventions aligned with the results in the Gender Action Plan (GAP). The Gender Assessment and GAP will also be mindful of the other responsibilities of women, in particular their role in the household, to ensure they are not adversely impacted by the project interventions.

They will also be exclusively targeted for financing activities under the component 3. Housewives will also be important targets for communication and information efforts, to improve climate resilient agriculture practices. They will also be involved in revenue generating activities, which would improve their living conditions and their financial autonomy.

At PPG stage, the gender assessment and action plan will be formulated. The action plan will define clear actions tofor the project to : (i) strengthen the capacities of vulnerable groups including women in terms of gender mainstreaming in the project, as well as the technical and organizational capacities of vulnerable actors, with at least 60% of women, (ii) help women and men have equal access to decision-making bodies, and equal access to agricultural and climate-resilient technologies, (iii) ensure gender equity in the development of stakeholders' financial capacities for the promotion of climate-resilient agricultural practices, (iv) train the beneficiaries of the project on the maintenance of the equipment put in place, (v) set up a functional relevant and gender sensitive monitoring and evaluation system for the achievement of indicators and disaggregated data according to the gender of the project, and capitalize and disseminate good and best gender experiences and practices of the project.

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

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

improving women's participation and decision-making; and/or Yes

generating socio-economic benefits or services for women. Yes

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

Yes

4. Private sector engagement

Will there be private sector engagement in the project?

Yes

Please briefly explain the rationale behind your answer.

Niger is the world poorest country, and one of the countries facing most recurrent food insecurity. Climate change and food insecurity in Niger are wide-ranging and most of the public funding from the Government is far from being sufficient. Private sector engagement and financing will be key to fill the funding gap for resilient agriculture and food security.

Under component 3, the project will support the access to loans under the FISAN, through the BAGRI and MFIs to create an enabling environment and promote private sector financing for climate resilient agriculture through concessional loans. In coordination with the PIMELAN and the GCF-IFAD project, the LDCF project will support MSEs and IEGs to access concessional loans from the BAGRI and MFIs to benefit smallholder farmers. The implementation of this mechanism will provide access to affordable and long-term loans to agriculture groups and cooperatives, reduce the current high interest rates on agricultural credit and enable the development of a replicable model of climate resilient agriculture financing, innovative irrigation techniques and fields protection against flood. The de-risking of smallholder farmers through capacity building and access to climate-resilient agricultural practices, and the engagement with the FISAN and its partners, will also offer opportunities for the engagement of a broader range of MFIs and other institutions in the long-term.

This technical support for MSEs to access finance will help develop the private sector in the project areas. Businesses will be developed and strengthened to access funding and to develop sustainable and viable value chains.

During the PPG phase, the team will also seek partnerships with private enterprises present in the project area and identify areas of cooperation. This might for instance include getting involved in the value-chain of agricultural products to access a broader market.

5. Risks to Achieving Project Objectives

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

Description	Probability	Impact	Mitigation Measure
Acts of vandalism and theft of solar panels, electric pumps, etc.	Medium	Medium	<p>An agreement will be signed with the groups to ensure continuous monitoring of the installed equipment. The solar panels, the electric pumps, the Californian will have to bear the mark " Owned by Niger/ONAHA" with an identification number. If possible, the supplier must integrate into the equipment, particularly the solar panels and electric pumps, a geo-referenced warning system connected to the cooperatives' mobile phones.</p> <p>Stolen equipment can thus be found thanks to the installation of a system of connected objects that can be tracked using the GPS tracker. This technology has proven itself in the monitoring of large construction sites in the construction sector.</p> <p>It should be noted that thieves are commonly armed groups / bandits, and the stolen equipment can go to their illegal activities (in particular solar panels).</p>
Lack of support from local administrative authorities	Low	Substantial	Obtain the firm support of local administrative authorities by involving them from the project design phase through meetings and public consultation workshops in each selected region, department, and commune
Lack of support from local communities, reluctant to adopt practices	Low	Substantial	Foster communities' buy-in through inclusive consultations, adapted measures and targeted actions towards all communities through a Social Inclusion Plan
Low participation of women and youth	Medium	Substantial	The project encourages strong involvement of women through sensitization and capacity building. Furthermore, the project will ensure that the sites are not subject to any problem regarding land tenure for women.
Deteriorating security conditions in the Project area.	Medium	Substantial	<p>All sites to be selected for the project will be secured sites in the administrative department concerned. Niger will propose an action plan for the safety of the intervention sites that will be taken into account during planning, construction, operation and evaluation.</p> <p>Cooperate with regional and communal security services and set up an alert system in case of terrorist attack. Implement a participatory approach involving producers. Give priority to local methods of conflict management based on best practices.</p>
Poor quality of solar energy equipment and/or unsuitable for use	Medium	High	Drilling equipped with solar pumps' Contract awardees must be required to provide sufficient Bank guarantee to ensure

efficient water pumping			able the project to ensure that: (i) the solar energy equipments and pumps are excellent quality one in the biophysical context of the Niger; (ii) the required quantity of water on each parcel are reached and supplies water regularly throughout the year.
Risk of misuse and poor maintenance of equipment	Low	High	Train artisans at the national and local level for the installation and repair of equipment
Fear of innovation manifested by farmers' groups and cooperatives' reluctance to apply knowledge and practices on climate change adaptation	Low	Substantial	Organize ongoing awareness sessions on the merits of climate change adaptation measures. Organize visits to successful achievements in other regions
Insufficient mastery of the technologies promoted by the project with consequences on the yields and production	Low	Medium	Plan training and advisory support for the beneficiaries to enable them to assimilate as soon as possible the operation of the project equipment by the beneficiaries
The techniques promoted by the project remain confined to the first beneficiary regions	Low	Medium	Disseminate lessons learned and focus on replication and scaling up through incentive private financial mechanism
COVID-19, or other health-related emergency/pandemics, adversely impact the project implementation	Medium	Medium	The project team will be based in Tahoua to reduce the impacts linked with travel restrictions and most of the works will be conducted by local workforce. In case a pandemic impacts Tahoua and the remote targeted areas, protective equipment will be distributed.
Fiduciary risks: funds are not used for the intended purposes; do not achieve value for money; and/or are not properly accounted for. This can be due to a variety of factors, including lack of capacity, competency or knowledge; bureaucratic inefficiency; and/or active corruption.	Low	High	A proper fiduciary risk assessment and appropriate governance arrangements will be developed by the PPG team during the project preparation phase. The mitigation plan will inform the project capacity building and its implementation during the project implementation will be supported by on-going performance monitoring.
Climate risks : there is a risk of losses and damages of assets and production as a result of extreme climate events in the region (drought). This may affect the economic return of CSA invest	Medium	Medium	Component 2 and 3 will carefully select the techniques, including water storage techniques. Early trigger mechanisms should be planned for the PMU to react adequately and anticipate financial consequences for beneficiaries.

ments and in turn reduce the capacity of borrowers to pay off their debt, discourage them for future CSA investments, jeopardize the development of climate finance and reduce the climate change adaptation capacity of the communities			
--	--	--	--

6. Coordination

Outline the institutional structure of the project including monitoring and evaluation coordination at the project level. Describe possible coordination with other relevant GEF-financed projects and other initiatives.

The executing partner is the Executive Secretary of the National Council on Environment and Sustainable Development (SE/CNEDD). As relevant, Responsible Parties will be identified for the implementation of specific activities, based on their expertise and presence in Tahoua - including the Ministry of Agriculture and livestock, the Ministry of Environment through their respective decentralized agencies. The day-to-day management of the project will be ensured by a Project Management Unit which will report to the SE/CNEDD. The team will be based in Tahoua considering the distance from Niamey (600 km, about 10 hours of driving), making it challenging to provide the adequate monitoring of project interventions from the capital city. This will also make it possible for the PMU to engage on a daily basis with the partners and stakeholders present in Tahoua and build stronger collaboration. Regular travels to Niamey will be organized to report to UNDP about the progress and to engage with the stakeholders based in Niamey. The list of project staff under the PMU will be defined at PPG stage but it is expected that the team will be comprised of a project coordinator, an M&E specialist, a communication specialist, a CSA specialist, an NbS specialist and a finance and admin specialist.

A Steering Committee for the Project will be created by decree of the Prime Minister office. The Steering Committee will be responsible for the strategic direction, monitoring, and supervision of the implementation of the project. It will approve AWPBs, review the risks and the challenges of the project and propose and approve mitigation measures. It will meet twice a year, and more in exceptional cases.

UNDP, as the GEF Agency, will be responsible for the oversight of the project and the Resident Representative will actively participate in the steering committee for the project. UNDP has been the GEF agency for multiple projects including the PFAN and the CBA.

In the context of the implementation of the project and in accordance with national legislations, the environmental assessment office of Niger (BNEE) will be responsible for the monitoring of environmental and social issues and will therefore be involved in the selection of project's sites to define the environment and social impacts and risks.

More details on the institutional arrangements will be defined at PPG stage.

Monitoring and evaluation: The project monitoring and evaluation framework will be built around the result framework as a tool of management, planning and assistance to decision-making for all partners involved in the implementation of the project. Several guides and tools will be used to measure the performance of the project. Firstly, investigations on effects/impact during the incentive period, the mid-term review, the project completion and the analysis of annual technical, economic and financial performance will measure the project impact. A computerized database will be developed for each site of intervention. These data will be centralized by the project management Unit for analysis on the level of performance of the project. Quantitative targets will be set up at the start of the project during the review of the logical framework, with stakeholders taking into account the intervention sites. A mid-term review and final evaluation will be conducted to assess changes in the reference situation and issue recommendations to the different stakeholders. The monitoring and evaluation framework should support decision-making for the adoption of actions or activities that can improve future initiatives. Monitoring and evaluation tools will be developed based on existing mechanisms and ongoing projects at operational level (survey record, further investigation on the effect/impact evaluation, monitoring activities, thematic studies, nominative targeting mechanism, dashboards, etc.).

The GEF-financed projects that are relevant to this project are presented in the section 1.a.5. The list of GEF projects intervening in Niger are also listed in Annex D and will be reviewed during the PPG phase to ensure all the relevant coordination is conducted.

7. Consistency with National Priorities

Is the Project consistent with the National Strategies and plans or reports and assessments under relevant conventions?

Yes

If yes, which ones and how: NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc

To strengthen people's resilience to climate change, Niger has developed policies, strategies, plans and programs such as: (i) the Sustainable Development Strategy and Inclusive Growth Vision 2035; (ii) the 3N Initiative for Food and Nutrition Security and Sustainable Agricultural Development; (iii) the Small Irrigation Strategy in Niger; (iv) the National Climate Change Adaptation Plan; (v) the National Environmental Protection Policy and (vi) the Nationally Determined Contribution.

The project is consistent with Niger's National Determined Contribution (NDC), particularly on promoting climate-smart agriculture (CSA) while strengthening development at the grassroots level. It meets CSA's objective by building resilience of the agriculture sector while reducing GHG emissions, improving agricultural productivity and incomes.

The National Strategy and Plan for Adaptation to Climate Change in the Agricultural Sector 2020-2035^[1], in its point 1.7. entitled "A Strategy Based on Climate-Smart Agriculture" states that Niger has based its agriculture interventions on the concepts of climate-smart agriculture, an approach to development aimed at identifying the measures needed to foster development sustainable agricultural production systems that jointly ensure : (i) food security, by sustainably increasing production, stabilizing supply and increasing the incomes, (ii) adaptation to climate variability and change (including extreme climate events), and (iii) where appropriate the mitigation of greenhouse gas emissions produced by agriculture (including crops, livestock and fisheries) where possible, by storing carbon in trees, fields and the floors.

The NAPA's development objective is to help mitigate the adverse effects of climate change on the most vulnerable populations, with a view to sustainable development and poverty alleviation in Niger. This project will reinforce the positive impacts of the priority activities in the NAPA for the adaptation of the agriculture and water sectors (diversification and intensification of irrigated crops; mobilization of surface water and groundwater exploitation; promotion of income-generating activities...).

The National Environmental Protection Policy aims to ensure a healthy environment and sustainable development by taking the environmental dimension into account in any decision that affects the design, planning and implementation of policies, plans, programmes and development activities through the accountability and commitment of all stakeholders. It intends to: (i) actively contribute to the efforts undertaken at the sub-regional, regional, and international levels in the protection, restoration, and management of the environment; (ii) ensure food security and the supply of products in quantity and quality; and (iii) promote job creation. The present project, through the promotion of techniques for soil conservation and improvement, agroforestry, protection of restored areas, by favoring integrated approaches, is expected to have strong environmental benefits.

This project, will also promote climate-resilient technologies, contribute to the implementation of the Sustainable Development and Inclusive Growth Strategy (SDDCI) Vision 2035 axis "Energizing and Modernizing the Rural World" which aimed at sustainably increasing agricultural production and productivity to strengthen agricultural Rural households' resilience to climate change.

This project is in line with the Initiative for Food and Nutrition Security and Sustainable Agricultural Development "Nigeriens feed Nigeriens" (I3N) adopted by the government in May 2012, which built on the achievements of the Rural Development Strategy (SDR) while implementing the Detailed Development Plan for Agriculture in Africa (PDDAA), the common Agricultural Policy of the ECOWAS (ECOWAP) and the WAEMU Agricultural Policy (PAU). It stipulates that appropriate solutions must be found to reduce the growing need to adapt to climate change, the frequency of cereal and forage deficits, improve the nutritional quality of meals for households and especially children, and ensure a regular supply of and ensure their accessibility to all social categories in the country in a context of increasing population pressure, and the increase in livestock with the reduction of equity and regional integration.

[1] La Stratégie et Plan National d'Adaptation face aux Changements Climatiques dans le secteur Agricole (SPN2A) 2020-2035 du 10 avril 2020.

8. Knowledge Management

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

Knowledge management will be undertaken under Component 4: Knowledge Management and Lessons Learned of the project, together with the monitoring and evaluations effort. A Knowledge Management strategy will be developed and will focus on collecting project level data, results, and lessons, and collating them in accessible and open databases. Open data will be a key feature so that project results will be available to policy officials, and development partners and civil society who will also be able to add to the knowledge base. Knowledge will be brought to all stakeholders through the production and dissemination of information via fact sheets, notes for policy makers, press releases, scientific publications, database on practices and awareness raising tools (documentaries, guided tours of development stakeholders, etc.). A sites dedicated to the project will be launched and will provide a platform for exchanging information and knowledge in adaptation sector in relation of previous adaptation project . All experiments will be capitalized and documented for future replication, fact sheets on the status of the climate smart agriculture and notes to the policy will be published and will be made available to all practitioners and other stakeholders in the agriculture sector. Project may further contribute to feed in from other project relevant information on the climate resilient agriculture. Complementary activities such as: (i) annual workshops bringing together community, departmental, regional and national stakeholders, private sector, associations, NGOs, etc. to discuss opportunities and constraints, share experiences and promote learning, incorporation of reports into the database of municipalities and statistics directorates; (ii) the dissemination of information on lessons learned and experiences shared through programs on public and private media (local, and national televisions and radio stations).

9. Environmental and Social Safeguard (ESS) Risks

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

Overall Project/Program Risk Classification*

PIF	CEO Endorsement/Approval	MTR	TE
High or Substantial			

Measures to address identified risks and impacts

Provide preliminary information on the types and levels of risk classifications/ratings of any identified environmental and social risks and potential impacts associated with the project (considering the GEF ESS Minimum Standards) and describe measures to address these risks during the project design.

<p>QUESTION 2: What are the Potential Social and Environmental Risks?</p> <p><i>Note: Complete SESP Attachment 1 before responding to Question 2.</i></p>	<p>QUESTION 3: What is the level of significance of the potential social and environmental risks?</p> <p><i>Note: Respond to Questions 4 and 5 below before proceeding to Question 5</i></p>	<p>QUESTION 6: Describe the assessment and management measures for each risk rated Moderate, Substantial or High</p>
--	---	---

<p><i>Risk Description</i> (broken down by event, cause, impact)</p>	<p><i>Impact and Likelihood (1-5)</i></p>	<p><i>Significance</i> (Low, Moderate Substantial, High)</p>	<p><i>Comments (optional)</i></p>	<p><i>Description of assessment and management measures for risks rated as Moderate, Substantial or High</i></p>
<p>Risk 1</p> <p>The restoration of degraded lands could be done by seizing the land of some communities and could lead to adverse impact on the existing social tensions in the area – but not present in the selected localities - between land users, including Internally Displaced Persons. It is to be noted that all land users but IDPs are Indigenous Peoples. These tensions could also increase violent altercations which have arisen over the last years, and it may affect the repartition of benefits among beneficiaries, to the detriment of women and indigenous peoples.</p> <p><i>Human Rights</i> P1, P3, P4, P5, P6</p> <p><i>Accountability</i></p>	<p>I = 3 L = 4</p>	<p>Substantial</p>	<p>Output 1.1.1 will require selecting lands to be restored. The choice of these lands could be made at the detriment of some communities if not all communities can participate to the process. This restoration could benefit a small portion of the local communities. Conflicts may arise if the process is not fair to all and confiscates some lands.</p> <p>It is to be noted that all communities in Niger are indigenous peoples. At the national level, estimates by the US government for 2006 suggest a population made up of a majority of Hausa (53.1 per cent), followed by Zarma (Djerma/Songhai) (21.2 per cent), Tuareg (11 per cent), Fulani/Peulh (6.5 per cent), Kanuri (5.9 per cent), Gurma (0.8 per cent), Arab (0.4 per cent) and Toubou (0.4 per cent). The project area is mainly populated by Peulhs (cattle herders), Touaregs (camel and goat herders), Toubou, Hausa and Songhai (settled agriculturalists).</p>	<ul style="list-style-type: none"> - The public consultation mission took place from March 11 to 23, 2022 at the national and regional levels. At the national level, it took place from March 11 to 16, 2022 with sector ministries and national and international organizations (see list of national structures in Annex 1) to gather information and data for the development of the project. At the regional level, the mission took place from March 17 to 23, 2022 in the city of Tahoua (regional capital) and the departments of Tahoua, Bouza, Madaoua and Birnin Konni with administrative authorities, technical services and producers' groups - Surveys must be conducted to identify land rights and land uses in the region - A consensus should be reached through a participatory process to identify the land plots to be restored - The ESMF (PPG) will detail all safeguard procedures - Per the ESMF, the ESIA (inception) and any subsequent site-specific assessments will detail and assess all relevant safeguard risks - Per the ESMF, the ESMP (inception) and any site-specific management plans will detail all management measures. The ESMP should be designed, validated, disclosed and consulted before any activities included within the scope of the ESIA/ESMP are initiated. - The <u>Stakeholder Engagement Plan</u> (PPG) should address this issue - Specific activities targeting women, and in particular widows and unmarried women, should be integrated in the ProDoc

<p><i>P13</i></p> <p><i>Displacement and Resettlement</i></p> <p>5.2, 5.4</p> <p><i>Indigenous peoples</i></p> <p>6.1, 6.2, 6.3, 6.5, 6.7, 6.9</p>			<p>The area selected, while being close to areas of conflict, is an area where communities coexist in peace. The security situation and inter-ethnic conflict is rather active in the north of the Tahoua region.</p>	<ul style="list-style-type: none"> - The <u>GAAP</u> (PPG) will address the issue of benefit-sharing between and among men and women - A <u>grievance redress mechanism</u> (PPG – ESMF) should be designed and implemented - <u>FPIC</u> (PPG and inception) protocol is to be part of an Indigenous Peoples Framework/Plan, which should rather be called a <u>Social Inclusion Framework/Plan</u> (PPG/inception), in that case, as all communities are indigenous - Consultations during PPG and after should be held in local languages (i.e. tamasheq) in order for all communities to be able to fully understand and participate - The project itself, by fostering local economic development, can be developed as a factor of peace in the area
<p>Risk 2</p> <p>Better land management and implementation of climate smart agriculture could lead to an increase in prices for agricultural lands, in an area where communities depend on these lands for their livelihoods</p> <p><i>Human Rights</i></p> <p><i>P1, P3, P4, P5, P6</i></p>	<p>I = 2 L = 3</p>	<p>Moderate</p>	<p>Land development, restoration of degraded lands, implementation of climate-smart agricultural projects, will all add value to the land. The costs to access lands could increase as an unintended consequence. Over the past years, lease/loan systems have become more common due to the rural exodus of land-owners towards cities.</p>	<ul style="list-style-type: none"> - Local agreements should be based on full and effective consultations according to the SEP and social inclusion plan (or IPP) - A <u>livelihood management framework/plan(s)</u> (PPG and inception), should be developed
<p>Risk 3</p> <p>The project may exacerbate existing discriminations against women and youth, as well as among women and youth, as they do not participate effectively in decision-making arena at the local level, leading to maladapted diffusion of climate resilient farming practices</p>	<p>I = 4 L = 3</p>	<p>Substantial</p>	<p>Women and youth participate little in governance meetings concerning decision making at the local level. While women are hard hit by the loss of land, limited access to water and subsequent food insecurity, the strict social rules that discourage women from participating</p>	<ul style="list-style-type: none"> - The GAAP, SEP, ESMF and subsequent assessments/management plans will address this issue - The GAAP should be closely linked to the social and environmental safeguards for the project, including the Social Inclusion Framework/Plan(s) - The project should integrate sensitization activities to gender issues and offer specific activities for women's and young community members' livelihoods - A Gender specialist should be hired within the PPG

<p>tion or climate resilient farming techniques (2.1.1) and support to agricultural groups and cooperatives' community funds (3.1.1).</p> <p><i>Gender Equality and Women's Empowerment</i></p> <p><i>P8, P9, P10, P11, P12,</i></p> <p><i>Sustainability and Resilience</i></p> <p><i>P13, P14, P15</i></p>			<p>g in village governance constitute important obstacles. They could be excluded from the support planned for agricultural cooperative. Conflict dynamics among communities could also lead to the exclusion of certain women from the support provided to women's groups.</p>	<p>A gender specialist should be hired within the PIF team</p> <ul style="list-style-type: none"> - The following streams of support have been suggested through the initial consultations, and integrated in outcome 3 : (1) the creation of a training center for young people who have dropped out of school in the field of agriculture; (2) the need for certification and labeling of products resulting from the processing of women producers; (3) The need for certification and labeling of the products produced by women; the support to the women processors in packaging of processed products to compete with other products
<p>Risk 4</p> <p>The duty bearers of this project have low capacities to implement the proje</p>	<p>I = 3</p> <p>L = 3</p>	<p>Moderate</p>	<p>The project is to be implemented by Secretariat Exécutif du Conseil National de l'Environnement pour un Développement Durable (SE/CNEDD), under the Ministry of Environment. Output 1.1 requires capacity-development of Local authorities, decentralized state agents and local committees. The promotion of climate resilient techniques (outcome 2.1) also requires important coordination skills which will require capacity-building. This translates into a risk of the project suffering from poor coordination of on-ground activities which could result in delays and inefficiencies in time-bound interventions, delays in procurement and supply of materials to project sites and beneficiaries. It could also result in poor monitoring and reporting of both financial and physical interventions.</p>	<ul style="list-style-type: none"> - In order to reinforce the capacities of the duty-bearers to conduct the project effectively and meet their obligations, all outcomes include targeted capacity-building. These activities will be completed by specific capacity-building activities on Safeguards Management, Gender equity, Stakeholder Engagement, as planned respectively in the ESMF, the GAAP and the SEP. - Discussions with national and local authorities at the PIF stage revealed that the project idea fits perfectly with national policies and strategies and regional planning in terms of both improving food and nutrition security and adaptation/mitigation to the adverse effects of climate change - The project will also require the design and implementation of a Grievance Redress Mechanism so that complaints are adequately channeled and processed. PPG stage will assess capacities for GRM implementation as part of the process to develop the ESMF, ensuring necessary capacity building measures are in place.

<p>ct, to engage with all members of the communities in depth, and to facilitate and monitor a grievance redress mechanism (GRM)</p> <p><i>Human Rights</i></p> <p>P2</p>			<p>The GRM may suffer from the weakness of the justice system which has meant that many citizens have lost confidence in it. In this context, inadequate mobilization and information sharing may arise, and lead to low participation, particularly among women and more vulnerable groups. The low mobilization capacities of local authorities could in turn lead to low adoption of proposed techniques.</p> <p>There is also risk that potential grievances coming from marginalized communities and/or subsets of communities, including women, might not be fairly received and responded to. That could lead to adverse impacts not being adequately managed within the projects, as communities would not access an appropriate GRM easily.</p>	
	<p>I = 3</p> <p>L = 3</p>	<p>Moderate</p>	<p>Outcome 1 includes activities of reforestation, afforestation and agroforestry.</p> <p>There is a risk that this is implemented mainly through creation of woodlots and energy plantations with fast growing fuel and timber species, and through plantin</p>	<ul style="list-style-type: none"> - Partnerships with research centers should be envisioned - The risk will be assessed further as part of ESIA and <u>Biodiversity Action Plan (inception)</u> will be needed as part of the ESMP, per requirements outlined in ESMF - Assisted Natural Regeneration (ANR) practices will be emphasized - Project activities should complement afforestation

<p>Risk 5</p> <p>Nature-based solutions (Outcome 1.1) may lead to negative environmental effects such as the introduction of alien invasive species, a modification of existing ecosystems, the establishment of a monoculture that lacks biodiversity and true ecosystem function</p> <p><i>Biodiversity Conservation and Sustainable Natural Resource Management</i></p> <p>1.1, 1.3, 1.6, 1.8</p>			<p>g along and on structures for soil and water conservation and harvesting for strength and protection.</p> <p>The temptation to use fast growing, low maintenance exotic species, along with suitable native species could arise to provide fodder, fuel and timber as an adaptation measure. These species could however prove to be invasive. Moreover, invasive species could also come through inadvertent transfer on contaminated equipment or use of contaminated plant material or seeds. Output 3.1.2 mentions that loan facility mechanisms could be used to buy seeds, which may lead to the introduction of genetically modified organisms, with the risk of introducing invasive species.</p>	<p>measures with measures to diversity sources of food, fodder, forage, fuel and timber through planting appropriate species of trees and shrubs.</p>
<p>Risk 6</p> <p>In the long term, the project may generate benefits that would lead to further socio-economic development locally, which would in turn generate a risk</p>	<p>I = 3 P = 3</p>	<p>Moderate</p>	<p>Overall in the Tahoua region, the trend of increasing numbers of people in displacement due to attacks and continued armed groups in intimidation has increased the number of internally displaced persons from 23,000 at the end of 2019 to over 55,000 in January 2021. The project area is already considered a safer place, and hosts numerous internally displaced persons, all using the lands.</p>	<ul style="list-style-type: none"> - The SEP should analyze the situation of IDPs in the project area and seek how best to engage with them - In order to avoid and manage conflicts, the Stakeholder Engagement Plan (SEP) should be designed and made available in English (and potentially other languages such as tamasheq) to all stakeholders before the activities start. It will specify the need for a full disclosure of information and provide for meaningful participation of stakeholders during the planning and implementation of site-specific activities including as part of site-specific Environmental and Social screenings and assessments. - A project-level Grievance Redress Mechanism will

<p>of more incoming of IDPs and demographic pressure in this area, as well as potential conflicts with inhabitants over land use</p> <p><i>Biodiversity Conservation and Sustainable Natural Resource Management</i></p> <p>1.1, 1.3, 1.6, 1.8</p> <p><i>Human Rights</i></p> <p>P9, P10, P11, P12, P13, P14, P15</p>			<p>The project could appeal more IDPs to establish themselves in the area, resulting in more pressure on lands and potentially in conflicts with the inhabitants.</p>	<p>promote awareness of the grievance mechanism which provides a means for redress of aggrieved individuals or groups.</p> <ul style="list-style-type: none"> - A <u>conflict analysis</u> (inception) will be conducted together with the ESIA in order to detect (1) potential existing tensions and (2) existing conflict resolution mechanisms, with a particular emphasis on the livelihoods of Indigenous Peoples and Internally Displaced Peoples. - The Livelihood Action Framework/Plan (PPG/inception) will be conducted on a participatory basis, through the representative management structures set up by the project to manage interventions, both in farm lands and in pasture lands. All communities livelihoods, including nomadic pastoralists and IDPs, will be represented. - The project will set up representative management structures to manage interventions, both in farm lands and in pasture lands.
<p>Risk 7</p> <p>The project is likely to generate an increase of GHG emissions at the local level due to the expected increased agricultural production, on the short-term and especially on the long-term</p> <p><i>Climate Change and Disaster Risks</i></p> <p>2.4</p>	<p>I = 2</p> <p>L = 2</p>	<p>Low</p>	<p>The project aims at increasing local food production through CSA. It will increase investments in agricultural production, processing, and market access, which all can generate more GHG emissions, in particular methane (through livestock agriculture). However, the small scale of this production makes it possible to limit the climatic risks and to improve food security without creating GHG emissions risks.</p> <p>Development pressure on the long term may generate deforestation, but it is to be noted that the project plans reforestation activities from the start.</p>	

<p>Risk 8</p> <p>Climate change, which manifests mainly through more droughts and floods has generated major shifts in the seasonal calendar, increased heat waves, perturbations in agricultural practices, and has affected storage capacities – this can increase conflicts and social tensions, and lead to the loss of benefits among farmers’ organizations.</p> <p><i>Climate Change and Disaster Risks</i> 2.1, 2.2</p>	<p>I = 4 L = 3</p>	<p>Substantial</p>	<p>The project is designed with resilience in mind for activities sensitive to climate change. It integrates projections on increased heat waves, droughts, changes in the seasonal and agricultural calendar. However, changes could happen more rapidly than anticipated and/or unplanned climate hazard could threaten the projects’ outcomes.</p>	<ul style="list-style-type: none"> · The project aims to provide adequate support to the agriculture sector in order to better adapt it to climate change and modified agricultural conditions. · Capacity enhancement of State entities and natural resources users will be supported and monitored to ensure that communities’ livelihoods are better adapted to climate change. · Alternative livelihood activities are designed to be climate-smart; promotion of innovating agro-pastoral techniques is emphasized. · Drought management systems will be part of the outcome 2.1.3 and 2.1.2 · Trainings to farmer organizations will take into account the whole chain of production in order to ensure that a better adaptation of cultures corresponds to appropriate storage facilities (2.1.1 ; 3.1.1) · The Project plans to update and complete the database for a better intervention · Interventions and localization should be specified · Feasibility studies for any infrastructure (water management) will include climate risks and projections · Climate change risks will be addressed in ESMF and ESIA/ESMP)
<p>Risk 9</p> <p>The project activities could lead to work-related accidents involving local workers during the construction or rehabilitation (including of dikes and man grove rice bunds); the potential malfu</p>	<p>I = 3 P= 2</p>		<p>The project will support small-scale infrastructure and construction development (water pumping and irrigation systems) that will require the use of local workforce. Accidents may arise on the construction sites.</p> <p>Vehicles and machines used for transporting people a</p>	<ul style="list-style-type: none"> - The project will require compliance with the Code of Conduct and safety standards by Project companies and personnel - These risks will be further assessed through the ESIA and specific measures will be specified in the ESMP(s) and the <u>Health&Security Plan(s)</u>. - An Emergency Fund may be considered to deal with possible situations of this kind - A technical study will be held (inception) to clarify the sustainability use of underground water in the pr

<p>nctioning of the structures could also affect the safety of local communities (output 2.1.1)</p> <p><i>Community Health, Safety and Security</i> 3.1, 3.3</p> <p><i>Labour and Working Conditions</i> 7.1, 7.6</p>			<p>nd construction materials can also cause traffic accidents.</p> <p>Stakeholders have highlighted during the initial consultation that the weak capacity to manage infrastructures will indeed be a challenge. Infrastructures will be under the control of the local authorities and their financing will be ensured according to the mechanisms provided for (ANFICT/FISAN) by the 3N Initiative.</p>	<p>object zone. This study along with ESIA/ESMP will also ensure FPIC from beneficiaries and surrounding communities who might be impacted by the pumps and the selection of sites for irrigation.</p> <ul style="list-style-type: none"> - Groundwater extraction will happen in deep aquifer water resources, which should be easily recharged considering the low level of consumption of villages - Co-funding should be clarified and activities under co-funding should be screened. Responsibilities will be defined as per UNDP SES policy alignment.
<p>Risk 10</p> <p>The activities related to water-pumping could inadvertently lead to an unsustainable use of groundwater, and to potential issues in water availability for some communities, if only some community members appropriate the system and privatize access to water</p> <p><i>Community Health, Safety and Security</i> 3.6</p> <p><i>Biodiversity Conservation and Sustainable Natural Resource Management</i> 1.1, 1.11</p> <p><i>Human Rights</i> P5, P6, P7</p>	<p>I= 5 P=3</p>	<p>Substantial</p>	<p>Output 2.1.1 plans for water-pumping and water extraction in order to build irrigation systems and build resilience through the droughts.</p> <p>This could however, if the location and if their use are not well established and accepted, generate tensions over a vital resource for the communities</p>	<ul style="list-style-type: none"> - A technical study will be held at the PPG stage to clarify the sustainability use of underground water in the project zone. This study along with ESIA/ESMP will also ensure FPIC from beneficiaries and surrounding communities who might be impacted by the pumps and the selection of sites for irrigation. - The ESMF (PPG) and <u>ESIA/ESMP</u> (inception) and any subsequent assessments/management plans identified in ESMF will also ensure that risks linked to water-pumping are accounted for and managed adequately

<p>Risk 11</p> <p>The project may act as a disease vector : small scale water storage may have potential to provide breeding areas for mosquitos which represent a nuisance and increase the prevalence of Malaria or other significant mosquito borne diseases, while travels of staff and consultants into the area may increase the risk of COVID-19 spread.</p> <p><i>Community Health, Safety and Security</i></p> <p>3,1, 3.4</p>	<p>I = 3</p> <p>L = 3</p>	<p>Moderate</p>	<p>The creation of water works supported by the project to adapt agricultural practices to increased droughts in the two areas may be sources of proliferation of vectors of waterborne diseases (cholera, bilharzia, guinea worms, malaria, etc.) which can harm beneficiaries.</p> <p>The lack of medical facilities and the dilapidated condition of existing facilities, the lack of training for medical personnel, the low number of medical personnel per capita and the excessive burden health-care expenditure represents for low-income households, all lead to believe that an increase in water-borne diseases would lead to a considerable health and sanitation issue at the local level.</p> <p>The PMU staff, as well as national and possibly international consultants, are expected to travel to the area regularly for support and monitoring. Given the current global COVID-19 pandemic and the low level of medical facilities and healthcare in the region, they could facilitate the spread of COVID-19 into the area, with considerable consequences.</p>	<ul style="list-style-type: none"> · Because this risk can't be avoided, mitigation measures have been implemented to tackle the adverse effects. The following measures will be taken before the start of operation of the developed site: (a) extension of insecticide-impregnated mosquito nets to limit the spread of malaria in the area; (b) improvement of the health coverage of the area and the encouragement of the future operators of the site to carry out regular medical check-ups; (c) Raising awareness and educating the population on hygiene measures. They will be integrated within the Health and Safety Plan(s). · These measures will favor the prevention of risks and impacts and taken into consideration the differentiated exposure to and higher sensitivity of marginalized groups. · The Health and Safety Plan(s) will cover COVID-19 prevention measures.
	<p>I = 4</p> <p>L = 2</p>	<p>Moderate</p>	<p>The CSA support (component 2) and the support to s</p>	<ul style="list-style-type: none"> · The CSA approach is meant to ensure the sustainability of this system and is closely linked to the local c

Risk 12

Even though the project aims at making agricultural practices more sustainable by improving their adaptation to climate change and by promoting Climate-Smart Agriculture technologies, the exploitation of new crops and the increased agricultural production triggered by the project could cause serious damage to the natural habitats, including in the small classified forests, such as the Korafane forest near Bouza, and potential cultural heritage sites present in the area. This risk covers accidental release of products or waste from agricultural production units, uncontrolled use of herbicides and chemical fertilizers which can contaminate soils and surface water if used without proper protocols, as well as the any release of waste or use of chemicals from the SMEs to be supported by the project. Rehabilitation of pasture corridors could also cause harm to biodiverse ecosystems by triggering more erosion and landslides.

Biodiversity Conservation and Sustainable Natural Resource Management

small entrepreneurs (component 3) which will both be supported by the project may generate waste and encourage the use of chemicals if clear assessments, criteria and measures are not put in place. Agricultural and non-agricultural waste, use of pesticides and fertilizers, introduction of new species/seeds should be appropriately managed in order to make sure that they do not generate any soil or water stream pollution, ultimately harming the region's fragile ecosystem.

contracts and/or the formulation of local development plans to ensure landscape management and to take into account broader environmental and social constraints.

- Stakeholder consultations will be key to determine local techniques and practices and informed by local planning and landscape management approaches. This is meant to ensure sustainable use of resources and avoid adverse impacts on ecosystems and people's livelihoods.
- The SESP conducted during PPG should assess the presence and location of cultural heritage sites
- A Biodiversity Action Plan (inception) will be designed as part of the ESMP
- The project will work to strengthen institutional capacities to ensure effective and efficient management of agriculture in regard to climate change, including the mitigation of potential adverse impacts to habitats.
- The project will collaborate with Research centres in order to investigate sustainable practices such as direct seeding, agroforestry, improved techniques, and others so that they can be promoted and implemented on project demonstration sites. Support to research will enable the project duty bearers to better understand potential solutions, and to promote them (ex: use of direct seeding)
- Currently, the availability of pesticides and fertilizers in the area is low. However, to prevent any increase with the expected higher yields and production, a Pest Management Plan as part of the ESMP will be developed. The project will comply with the national legislation on the use of pesticides and ensure that appropriate straightforward management measures are incorporated in the capacity-building activities and implemented in the project activities on the ground.
- Environmental, Social and Technical Assessments, including a cost-benefit analysis of adaptation options, will be undertaken for the targeted sites will detail viable options. They will identify socially acceptable and environmentally suitable locations and alternative livelihoods activities to be supported by the project. For

<p>1.1, 1.4, 1.8, 1.10, 1.11,</p> <p><i>Pollution Prevention and Resource Efficiency</i></p> <p>8.1, 8.2, 8.5, 8.6</p> <p><i>Cultural heritage</i></p> <p>4.1</p>				<p>veinmoods activities to be supported by the project. Environmental assessment of those alternatives will be included in these assessment, included appropriate measures of avoidance and if not possible of mitigation, such as an apparatus for waste water purification for aquaculture activities.</p> <ul style="list-style-type: none"> · UNDP ensures that Projects avoid the release of pollutants, and when avoidance is not feasible, minimize and/or control the intensity and mass flow of their release. This applies to the release of pollutants to air, water, and land due to routine, non-routine, and accidental circumstances. UNDP Projects ensure that pollution prevention and control technologies and practices are applied during the Project life cycle, utilizing performance levels and measures specified in national law or in good international good practice, whichever is more stringent. If less stringent measures (as compared to good international practice) are appropriate, the Project will fully justify the chosen alternative through the assessment process, demonstrating that the alternative is consistent with these requirements. The technologies and practices applied will be tailored to the hazards and risks associated with the nature of the Project.
<p>Risk 13</p> <p>The project could adversely impact traditional indigenous knowledge by (1) sharing it in a way that is not culturally appropriate ; (2) triggering its loss through the introduction of climate smart agriculture technologies and new practices</p> <p><i>Cultural Heritage</i></p> <p>4.3, 4.1</p> <p><i>Indigenous peoples</i></p> <p>6.1, 6.2, 6.3, 6.5, 6.7, 6.9</p>	<p>I = 3</p> <p>L = 3</p>	<p>Moderate</p>	<p>Climate smart practices, more resilient crops and other forms of knowledge will be introduced by the project. This may lead, in the mid-term, to a progressive abandonment of traditional forms of agriculture and hence to a loss of traditional knowledge among the younger generations, which constitutes a traditional heritage.</p>	<ul style="list-style-type: none"> · Where possible, agricultural knowledge will be studied and preserved through the partnership with local research centres. · The Social Inclusion Plan will plan adequate measures to (1) avoid the loss of indigenous agricultural knowledge: (2) define culturally appropriate ways of sharing indigenous knowledge. · FPIC will be applied where necessary.

<p>Risk 14</p> <p>Most of the agricultural sector in the project area is informal and fails to comply with national and international labor standards. Hence there is a risk of violation of workers' rights within the cooperatives supported by the project, linked in particular to forced labor and child labor.</p> <p><i>Labour and working conditions</i></p> <p>7.1, 7.3, 7.4, 7.5, 7.6</p>	<p>I = 3 L = 4</p>	<p>Substantial</p>	<p>The agricultural sector is associated with several human rights issues.</p> <p>Despite being banned in 2003, descent-based slavery is still prevalent in Niger, with some estimates suggesting tens of thousands of people are still living as slaves in the country. In particular, slavery continues to be practiced in Tuareg communities, among whom a caste-like hierarchy persists, as well as among Maure and Peulh. The majority are born into slavery and while identifying as Tuareg, many are descended from African communities enslaved by Tuareg raiders generations before. Without rights or recognition, their situation is characterized by abuse, exploitation and sexual assault. For young girls, in particular, the practice of wahaya – the sale of a slave as a ‘fifth wife’ – persists and is predominantly carried out among Tuaregs, with many sold to wealthy Hausa families.</p>	<ul style="list-style-type: none"> · Inspections of all activities should be carried out by the Ministry of the Agriculture and local authorities. In order to ensure the protection of children and all workers against trafficking, forced labour and other worst forms of labour in agriculture, it is expected to step up inspections of those activities. · The project will work closely with few farmers organizations within this project, and responsible parties will ensure that these organizations comply with all national and international labour standards. Training to farmers organizations which will receive small grants (Output 3.1.1) on adapted practices will recall these standards and monitoring of working conditions will be diligently followed. · This risk will be further addressed in design stage assessments, consultations and ESMF as well as subsequent ESIA/ESMP, which will include labour management procedures.
<p>QUESTION 4: What is the overall project risk categorization?</p>				
<p><i>Low Risk</i> <input type="checkbox"/></p>				
<p><i>Moderate Risk</i> <input type="checkbox"/></p>				

	<p>Substantial Risk <input checked="" type="checkbox"/></p>	<p>X</p>	<p>The PPG team should include an SES Expert</p> <p>A GAAP, SEP, SESP and ESMF will be developed during PPG. The ESMF will clarify safeguards requirements and capacities for implementation.</p>
	<p>High Risk <input type="checkbox"/></p>	<p></p>	
<p>QUESTION 5: Based on the identified risks and risk categorization, what requirements of the SES are triggered? (check all that apply)</p>			
<p>Question only required for Moderate, Substantial and High Risk projects</p>			
<p><i>Is assessment required? (check if "yes")</i></p>	<p>X</p>		<p><i>Status? (completed, planned)</i></p>
<p><i>if yes, indicate overall type and status</i></p>		<p>X Targeted assessment(s)</p>	<p>Gender analysis planned (PPG)</p>
		<p>X ESIA (Environmental and Social Impact Assessment)</p>	<p>Planned (inception, per ESMF)</p>
		<p><input type="checkbox"/> SESA (Strategic Environmental and Social Assessment)</p>	
<p><i>Are management plans required? (check if "yes")</i></p>	<p>X</p>		
<p><i>If yes, indicate overall type</i></p>		<p>X Targeted management plans (e.g. Gender Action Plan, Emergency Response Plan, Waste Management Plan, others)</p>	<p>Gender Action Plan planned in PPG</p> <p>Management plans required during inception/ implementation clarified in ESMF</p>
		<p>X ESMP (Environmental and Social Management Plan which may include range of targeted plans)</p>	<p>Planned in inception/ implementation (per ESMF)</p>

		X	ESMF (Environmental and Social Management Framework)	Planned (PPG)
<i>Based on identified risks, which Principles/Project-level Standards triggered?</i>			Comments (not required)	
<i>Overarching Principle: Leave No One Behind</i>				
<i>Human Rights</i>		X		
<i>Gender Equality and Women's Empowerment</i>		X		
<i>Accountability</i>		X		
<i>1. Biodiversity Conservation and Sustainable Natural Resource Management</i>		X		
<i>2. Climate Change and Disaster Risks</i>		X		
<i>3. Community Health, Safety and Security</i>		X		
<i>4. Cultural Heritage</i>		X		
<i>5. Displacement and Resettlement</i>		X		
<i>6. Indigenous Peoples</i>		X		
<i>7. Labour and Working Conditions</i>		X		
<i>8. Pollution Prevention and Resource Efficiency</i>		X		

Supporting Documents

Upload available ESS supporting documents.

Title

Submitted

PreSESP Niger 6696 220407 V2 cleared

Part III: Approval/Endorsement By GEF Operational Focal Point(S) And GEF Agency(ies)

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

Name	Position	Ministry	Date
Mr. Yakoubou Mahaman Sani	GEF Operational Focal Point	Ministry of Planning - General Direction for Development Programming	4/6/2022

ANNEX A: Project Map and Geographic Coordinates

Please provide geo-referenced information and map where the project intervention takes place

The project area is located in the region of Tahoua in the Republic of Niger West Africa (see the map below). The intervention sites will be selected during the PPG phase. Tahoua region in Niger covers an area of 113,317 km². It is bounded to the north by the region of Agadez, to the northwest by the Republic of Mali, to the west by the regions of Tillaberi and Dosso, to the east by the region of Maradi, and to the south by the Federal Republic of Nigeria. It is located at 14°53'19" North and 5°16'09" East. The sites will be selected based on the selection criteria defined in the Annex E.

