



Strengthening integrated approaches to build climate resilience of vulnerable rural communities and agricultural production systems in the central region of Segou in the Republic of Mali.

Part I: Project Information

GEF ID

10823

Project Type

MSP

Type of Trust Fund

LDCF

CBIT/NGI

CBIT No

NGI No

Project Title

Strengthening integrated approaches to build climate resilience of vulnerable rural communities and agricultural production systems in the central region of Segou in the Republic of Mali.

Countries

Mali

Agency(ies)

IFAD

Other Executing Partner(s)

Ministry of Environment, Sanitation and Sustainable Development and the Ministry of Agriculture

Executing Partner Type

Government

GEF Focal Area

Climate Change

Taxonomy

Focal Areas, Climate Change, Climate Change Adaptation, Least Developed Countries, Influencing models, Strengthen institutional capacity and decision-making, Stakeholders, Gender Equality, Gender Mainstreaming, Gender-sensitive indicators, Capacity, Knowledge and Research, Capacity Development

Rio Markers

Climate Change Mitigation

Climate Change Mitigation 0

Climate Change Adaptation

Climate Change Adaptation 2

Duration

48 In Months

Agency Fee(\$)

168,766.00

Submission Date

11/16/2021

A. Indicative Focal/Non-Focal Area Elements

| Programming Directions | Trust Fund | GEF Amount(\$) | Co-Fin Amount(\$) |
|--------------------------------|-------------------|-----------------------|--------------------------|
| CCA-1 | LDCF | 1,776,484.00 | 9,700,000.00 |
| Total Project Cost (\$) | | 1,776,484.00 | 9,700,000.00 |

B. Indicative Project description summary

Project Objective

Reduce the vulnerability of communities in the Central regions of Segou (Mali) to the risks posed by climate change through the adoption of climate smart agro-sylvo-pastoral and fish farming practices

| Project Component | Financing Type | Project Outcomes | Project Outputs | Trust Fund | GEF Amount(\$) | Co-Fin Amount(\$) |
|--------------------------|-----------------------|-------------------------|------------------------|-------------------|-----------------------|--------------------------|
|--------------------------|-----------------------|-------------------------|------------------------|-------------------|-----------------------|--------------------------|

| Project Component | Financing Type | Project Outcomes | Project Outputs | Trust Fund | GEF Amount(\$) | Co-Fin Amount(\$) |
|---|----------------------|--|--|------------|----------------|-------------------|
| Component 1: Institutional capacity building for enhancing resilience to climate change of rural communities | Technical Assistance | <p>Outcome 1</p> <p>The institutional capacity of government bodies (AEDD, ministries of the environment, Ministry of Planning) to integrate and implement climate resilient approaches in the targeted region are strengthened.</p> <p>Indicators and targets:</p> <p>(i) <i>500 people trained in integration of CC resilience in land-use planning (50 % women)</i></p> <p>ii) <i>2 communal plans that mainstreamed CC</i></p> | <p>Output 1.1</p> <p>500 staff from technical institutions are trained on the use of the Institutional Adaptation to Climate Change guide (IACC) (at least 50% women).</p> <p>Output 1.2.</p> <p>2 Communal and land use plans that mainstreamed CC are developed for the target regions.</p> <p>Output 1.3.</p> <p>Climate change is mainstreamed into Local communal Investment Plan to support the implementation of the national climate related agenda (NDC and other convention related commitment)</p> | LDC F | 295,000.00 | 4,000,000.00 |

| Project Component | Financing Type | Project Outcomes | Project Outputs | Trust Fund | GEF Amount(\$) | Co-Fin Amount(\$) |
|---|----------------------|--|---|------------|----------------|-------------------|
| Component 2: Development of integrated approaches to climate change adaptation and community-based natural resource management | Technical Assistance | <p>Outcome 2:</p> <p>Community-based adaptation strategies for alternative livelihoods are designed to strengthen the resilience of women and youth groups and reduce pressure on natural resources in the target regions.</p> <p>Indicators and targets:</p> <p><i>(i) 55,000 ha of land under climate resilience practices</i></p> <p><i>(ii) 50 % increase of farm output value per hectare</i></p> <p><i>(iii) 3000 direct and 21,000 indirect beneficiary households with strengthened livelihood resilience (at least 50% of beneficiaries are women and 30% youth)</i></p> | <p>Output 2.1</p> <p>1000 ha of Climate resilient species, essences and seeds are produced and distributed by 1000 households to support the climate resilience agricultural production systems by sustainably intensifying production</p> <p>Output 2.2</p> <p>Local species with high commercial and medicinal value domesticated on 3000 ha for 3000 direct beneficiaries household and 21,000 indirect beneficiaries using agro-ecological horticultural practices to sustainably increase food security (at least 50% women)</p> <p>Output 2.3</p> <p>Concrete agro-ecological measures to address the effects of drought, desertification and climate change are</p> | LDC F | 600,000.00 | 2,000,000.00 |

| Project Component | Financing Type | Project Outcomes | Project Outputs | Trust Fund | GEF Amount(\$) | Co-Fin Amount(\$) |
|--|----------------------|---|--|------------|----------------|-------------------|
| Component 3: Acquisition of systems, tools and instruments required to develop the resilience of vulnerable communities to climate change | Technical Assistance | <p>Outcome 3:</p> <p>Community-based adaptation activities for groups of women and the youth to increase better access to finance, credit, and capacity in value chain management established and strengthened.</p> <p>Indicators and targets:</p> <p>(i) <i>50% increase in youth and women employment opportunities in climate resilient agriculture</i></p> | <p>Output 3.1</p> <p>Organizational capacities of 2,500 Farmers (at least 50% women and 30% youth) from 50 communities are strengthened to address issues related to climate impacts on value chains development.</p> <p>Output 3.2:</p> <p>Appropriate technical tools and integrated approaches to climate change adaptation are adopted by 2,500 (at least 50% women and 30% youth) beneficiaries in 50 communities.</p> <p>Output 3.3:</p> <p>Capacities of 10 national institutions are strengthened to produce and disseminate real-time climatological, and hydro-meteorological information and services including in accessible language</p> | LDC F | 550,000.00 | 2,000,000.00 |

| Project Component | Financing Type | Project Outcomes | Project Outputs | Trust Fund | GEF Amount(\$) | Co-Fin Amount(\$) |
|---|----------------|--|--|------------|----------------|-------------------|
| Component 4: Knowledge management, monitoring and evaluation, and dissemination of results | Investment | <p>Outcome 4:</p> <p>Best agro-ecological, community-based climate change adaptation and climate risk reduction practices are collected, and disseminated in the region and beyond</p> <p>Indicators and targets:</p> <p>7800 new direct beneficiaries and 21,000 indirect beneficiaries reached (at least 50% women and 30% youth)</p> | <p>Output 4.1:</p> <p>Endogenous and exogenous knowledge on best available technologies and climate resilient practices for production and post-harvest processing are identified and disseminated to at least 3000 direct beneficiaries for adoption (at least 50% women and 30% youth)</p> <p>Output 4.2:</p> <p>The results of the project are captured in an exit strategy for scaling with 3000 direct beneficiaries and 21,000 indirect beneficiaries (at least 50% women and 30% youth)</p> <p>Output 4.3:</p> <p>100 journalist and 200 community leaders, 1500 lead farmers trained on IACC approaches and resilience building and 10 Social and environmental safeguard measures are identified and</p> | LDC F | 210,000.00 | 700,000.00 |

| Project Component | Financing Type | Project Outcomes | Project Outputs | Trust Fund | GEF Amount(\$) | Co-Fin Amount(\$) |
|--------------------------------------|----------------|------------------|----------------------|-----------------------|---------------------|---------------------|
| | | | | Sub Total (\$) | 1,655,000.00 | 8,700,000.00 |
| Project Management Cost (PMC) | | | | | | |
| | LDCF | | 121,484.00 | | 1,000,000.00 | |
| | | | Sub Total(\$) | 121,484.00 | 1,000,000.00 | |
| Total Project Cost(\$) | | | 1,776,484.00 | | 9,700,000.00 | |

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(\$) |
|--------------------------------|---|-----------------------------|-----------------------------|---------------------|
| GEF Agency | International Fund for Agricultural Development (IFAD) MERIT | Grant | Investment mobilized | 3,000,000.00 |
| Beneficiaries | Regions of Segou and Mopti, 10 Circles, including 3 Regions of Mopti | In-kind | Recurrent expenditures | 200,000.00 |
| Private Sector | Piyeli | Grant | Investment mobilized | 500,000.00 |
| Private Sector | Centre National de Promotion du Volontariat (CNPV), Agence Nationale pour l'Emploi (ANPE) | Grant | Investment mobilized | 500,000.00 |
| Donor Agency | Green Climate Fund (GCF) | Grant | Investment mobilized | 1,000,000.00 |
| Donor Agency | Food and Agriculture Organisation (FAO) | Grant | Investment mobilized | 2,500,000.00 |
| Donor Agency | Canadian Government | Grant | Investment mobilized | 1,000,000.00 |
| Donor Agency | Dutch Government | Grant | Investment mobilized | 1,000,000.00 |
| Total Project Cost(\$) | | | | 9,700,000.00 |

Describe how any "Investment Mobilized" was identified

The investment mobilised defined as co-financing (that excludes recurrent expenditures) were identified through consultations with the project's implementation partners is mixed and coming from various sources: a) IFAD co-financing: It will be ensured through the Multi-Energy for Resilience and Integrated Territorial (MERIT) project. Its development objective is the sustainable improvement of access to renewable energy sources and soil productivity. MERIT will promote the resilience of ecosystems toward climate change through the promotion of low emission energy sources. It will benefit over 42,000 households, or about 420,000 indirect beneficiaries in its intervention area, of which 50 per cent women and 30 per cent youth. MERIT has two components, a first one the Promotion of biodigester nexus, and a second one of the Resilience of production systems and integrated terroir management. IFAD investment is

estimated to 30,000,000 USD over 6 years with co-financing from ILO. This project has been approved by the IFAD board in 2020. The total project costs, over a period of 6 years, including provisions for price increases, amount to 29.0 billion CFAF, equivalent to US\$50.8. b) The IFAD Rural Poor Stimulus Facility (RPSF) - COVID 19 is a rapid response stimulus package for the rural poor people provided by IFAD to accelerate their recovery, by leveraging ongoing IFAD-supported projects to which the GEF project is attached. The availability of RPSF funds would also mitigate the significant risks and negative impacts associated with relying on MERIT and INCLUSIF to address immediate COVID-19 needs. The development objective of the project will be focused on maintaining and improving agricultural productive capacity, post-harvest and market access for small-scale producers affected by COVID-19 pandemic crisis. The activities would then be organised around two technical and one organisational components of the RPSF. The initial allocation is US\$ 442,065. c) Co-financing from other development partners: is an additional co-financing attached to the IFAD baseline investment MERIT and this GEF/LDCF grant. It is dedicated to capacity building of beneficiaries on agricultural value chain development and commercialization and provided in form of parallel cofinancing. d) Recurrent expenditures: Contributions from government and beneficiaries in the form of goods or services (in kind) other than money, including but not limited to salaries and wages, office space, and utilities. From the government side, recurrent expenditures are in form of tax exemption equivalent to 2,500,000 USD while from the beneficiaries, these are contributions in labour and or assets. Footnote for the IFAD MERIT Co-financing investment mobilized: Expected support for project implementation

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(\$) |
|--------------------------------|-------------------|----------------|-------------------|-----------------------------|---------------------|-------------------|---------------------|
| IFAD | LDC F | Mali | Climate Change | NA | 1,776,484 | 168,766 | 1,945,250.00 |
| Total GEF Resources(\$) | | | | | 1,776,484.00 | 168,766.00 | 1,945,250.00 |

E. Project Preparation Grant (PPG)

PPG Required **true**

PPG Amount (\$)

50,000

PPG Agency Fee (\$)

4,750

| Agency | Trust Fund | Country | Focal Area | Programming of Funds | Amount(\$) | Fee(\$) | Total(\$) |
|--------------------------------|-------------------|----------------|-------------------|-----------------------------|-------------------|-----------------|------------------|
| IFAD | LDC F | Mali | Climate Change | NA | 50,000 | 4,750 | 54,750.00 |
| Total Project Costs(\$) | | | | | 50,000.00 | 4,750.00 | 54,750.00 |

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). true

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

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). true

This Project has an urban focus. false

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

| | |
|------------------------------|--------|
| Agriculture | 50.00% |
| Natural resources management | 30.00% |
| Climate information Services | 5.00% |
| Costal zone management | 0.00% |
| Water resources Management | 15.00% |
| Disaster risk Management | 0.00% |
| 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 false

Change in mean temperature true

Increased Climatic Variability true

Natural hazards true

Land degradation true

Costal and/or Coral reef degradation false

GroundWater quality/quantity true

Core Indicators - LDCF

| CORE INDICATOR 1 | Total | Male | Female | % for Women |
|--------------------------------------|-------|-------|--------|-------------|
| Total number of direct beneficiaries | 3,000 | 1,500 | 1,500 | 50.00% |

CORE INDICATOR 2

Area of land managed for
climate resilience (ha) 55,000.00

CORE INDICATOR 3

Total no. of policies/plans
that will mainstream 2
climate resilience

CORE INDICATOR 4

| | | Male | Female | % for Women |
|-----------------------------------|-----|-------------|---------------|--------------------|
| Total number of people trained | 800 | 400 | 400 | 50.00% |

Part II. Project Justification

1a. Project Description

1A. PROJECT DESCRIPTION

1a1. Mali's development and Climate Change profiles

Development profile

1. Mali, a vast country of desert and savannah in West Africa, consistently ranks among the world's very least developed countries; with 90 per cent of the population earning less than USD 2[1]¹ a day. Since 2012, the Republic of Mali has been a part of the list of fragile countries that are grappling with high levels of social, economic and even cultural fragility, political and territorial insecurity and vulnerability to climate change[2]². The country faces two major enemies: i) climate change and related challenges and ii) terrorism due to political instability. The harmful effects of climate change and the disturbances related to security, politics and the military combine to worsen food insecurity, famine and poverty, making Mali one of the most fragile nations in Africa south of the Sahara in the 21st century. Since 2012, the north of Mali has been under the threat of its territory being partitioned due to an armed rebellion. Combined, these crises have destroyed the living conditions of populations that were initially sheltered from need, as Mali was once of the few African countries to achieve MDG1 on food security and poverty in 2011. In 2018, however, Mali was classified 182nd out of 189 in the United Nations Human Development Index (HDI)[3]³. In addition, Mali ranked as one of the ten African countries with the highest gender disparities (158th out of 160 countries in 2018) based on a value of 0.676 for the Gender Inequality Index. According to the latest UN reports on the situation in Mali during the COVID-19 pandemic, Mali may not meet the Sustainable Development Goals (SDGs) by 2030, particularly SDGs 1 (?no poverty?), 2 (?zero hunger?) and 13 (?measures relating to the fight against climate change?), as well as SDGs 5 (?gender equality?) and 7 (?clean and affordable energy?).[4]⁴Mali is a landlocked country and home to some 18 million people.
 2. The population is relatively young and 65 percent is under 25 years of age. The annual population growth rate is estimated at 3.6 percent. Poverty in Mali has increased according to the latest QUIBB survey, which shows that 57 percent of the poor lives in rural areas compared to 28.5 percent of the urban population. Mali's economy is dominated by rural family farming. After the military and political crisis that began in 2012, Mali experienced economic recovery with a growth
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rate of 6.8 percent in 2014 and 7.6 percent in 2015. The medium-term outlook remains favourable even if the country is exposed to the volatility of the prices of important export commodities such as gold and cotton. With a rurality rate of nearly 85% and a strong domination of its economy by the agro-pastoral sector, Mali suffers the full brunt of the adverse effects of climate change, which have the effect of repeated droughts, floods, violent winds, and the disruption of the agricultural calendar. Climate change and climate variability risks is spreading from the north and the centre (Sahelian ecosystem) to the south (Sub-Guinean ecosystem) of the country, which is becoming drier. With its relatively low Gross Domestic Product (GDP) per capita (US\$2,200), Mali's economy remains vulnerable to climate-health shocks and political-military insecurity (AfdB, 2018).

3. In Mali, family-based agriculture accounts for 39.4 percent of Mali's GDP (IFAD, 2020). The production of crops represents 60 percent of the sector; livestock 36 percent; and fisheries 6 percent. Crops are grown on 4.8 million hectares of land or 4 percent of the territory. Farms are mostly small (58 percent have less than 5 ha of land) and engage in mixed crop and livestock production. The main crops are millet, sorghum, maize, rice, peanuts and cotton. Most of crops are grown for farmers' own consumption; approximately 20 percent is marketed. Livestock farming is very widespread - 87 percent of farms have at least one animal - and livestock are more important in the north than in the south. There are two main livestock systems: sedentary and transhumant. The largest livestock numbers are found in the regions of Kidal (20.47 Tropical Livestock Units - UBT), Kayes (12.21 UBT), Sikasso (11.25 UBT), Gao (9.74 UBT), and Mopti (7.19 UBT). Farmers and agro-pastoralists constitute the poorest socio-professional category, with a poverty rate of 57 percent (IFAD, 2020). Low productivity, gradual decline in soil fertility, limited use of fertilizers and chemical inputs (fertilizers, pesticides) in the production, crop and post-harvest losses, water availability problems, overexploitation of natural resources, under-developed markets and vulnerability to climate change are some of the main challenges affecting the sector. In Mali, 11 million people (approximately 60 percent of the population) do not have access to electricity, most of which are in rural areas (World Bank, 2018). Lack of access to energy hinders the development of agricultural and food processing value chains and market access. The urbanization rate in the country is 4.8 percent, indicating a significant rural exodus, which is attributed to the lack of work and education opportunities, and access to land. Access to land is more difficult for women. Even if they account for 70 percent of food production in the country^[5], women continue to face major challenges to own land because of inheritance customs. Indeed, according to the traditional system, they cannot own land, but they are often use to cultivate small plots with degraded soil quality leading most of the time to limited productivity. According to EAC-I 2017, in most regions, land managed by women is three times smaller than the average size of farms in these regions. In addition, female heads of household own land that is about twice as small as male heads of household of the same age group : 4.36 ha cultivated by male heads of household under 30 years of age, against 1.45 ha for women of this age group^[6]^[7]. According to estimate, only 20

percent of women engaged in agriculture have access to land[7]⁸, and women represent fewer than 5 percent of all agricultural landholders in the country[8]⁹. Women are also disadvantaged in terms of credit and other financial services. Despite the improvement in the number of women over 15 with a bank or mobile account (6.91% in 2011 to 25.71% in 2017), there is still a gap between men and women of 20 percentage points. In the area of ??agricultural finance, it is important to emphasize that women with access to campaign credits make less than 5%¹⁰[9]¹¹.

4. The COVID-19 crisis started just before the 2020 rainy season and had a negative impact on small producers across the majority of agricultural value chains already impacted by climate change. The COVID-19 pandemic amplified these job losses in both urban and rural areas. Current statistics in Mali show 7,253 cases, including 4,913 recoveries and 278 deaths. COVID-19 and related containment measures are negatively affecting the Malian agricultural sector and food production system with (i) disruptions of input supply chains and the availability of services and marketing channels; (ii) social distancing impacting field work, (iii) border closures impacting opportunities for trade in agricultural products with neighbouring countries and reducing the movement of agricultural labour. However, the pressure on natural resources has contributed to a gradual deterioration of the natural capital, livelihoods, and food security of their populations. The number of food insecure people in Mali was 4.9 million in 2019.

Climate Change vulnerability and impact IN MALI

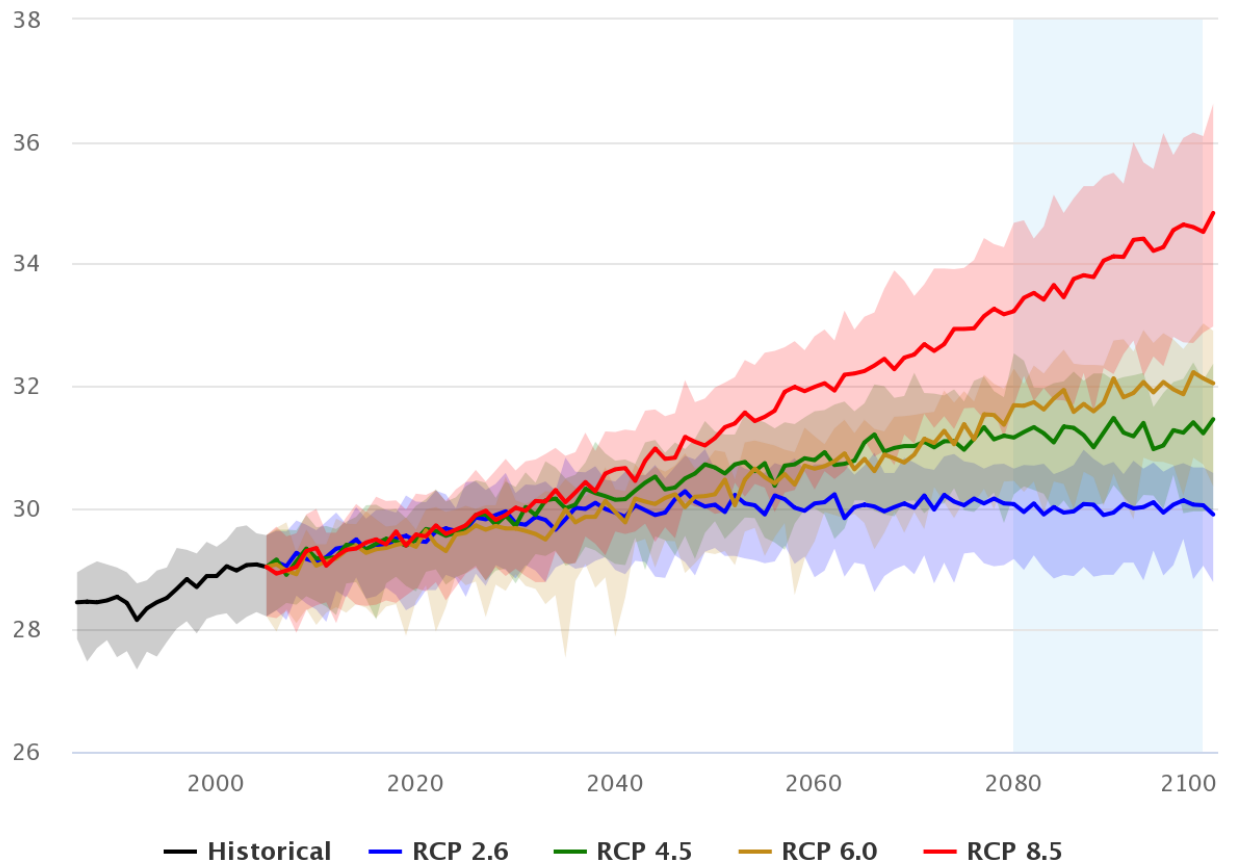
5. Climate change is a major challenge for Mali and is perceived as a multiplier effect of conflict as it affects the natural resources rural communities rely on for their livelihoods. It is already affecting and threatening key sectors in the country: water, agriculture, livestock, fisheries, forests and health. The country is exposed to a number of climate related hazards (droughts, floods, heatwaves, and locust invasion). Between 1980 and 2014 Mali has experienced more than 28 drought and flood events affecting more than 7 million people. This is equivalent to an annual economic impact of approximately US\$140 million. Two thirds of Mali's land area is classified as desert or semi-desert, and the country is one of the most drought-prone in the world. Annual precipitation ranges from over 1000 mm per year in the southern Sudano-Guinean area to less than 200 mm per year in the northern Saharan area. Moreover, cumulative rainfall data analysis for a thirty-year period indicates that the 600 and 900 mm isohyets migrated about 100 to 150 km southward between 1930 and 2010 . There is high inter-annual variability in rainfall, and recurrent dry years have become increasingly frequent since 1968. The main flood-prone areas are located in urban areas and along the Inner Niger Delta (64 000 sq km). More than 1.5 million fishermen, rice farmers and herdsman depend on annual flooding for their livelihoods. Depending on the amount of rainfall, however, flood levels can vary significantly. High floods can result in casualties and extensive damages to physical assets such as roads, housing, crops and livestock, while low floods can cause very low production of rice and fish. The 2013 floods also highlighted the increasing
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vulnerability of Mali's urban areas to floods. In the capital of Bamako, torrential rains and inadequate drainage infrastructure provoked flash floods and resulted in 37 casualties as well as in the displacement of more than 20,000 people. Thus, integrated climate planning is critical for protecting both the lives and livelihoods of the region's inhabitants. Natural disasters (drought, flood and locust infestations), as well as other factors including limited arable land, environmental degradation, and fluctuating commodity prices have led to numerous food security, health and fuels conflicts in Mali.

6. Like the other Sahelian countries, Mali is facing the effects of climate change which materialize in a deterioration of climatic conditions: i) gradual decrease in rainfall (22% decrease in rainfall by 2100), ii) temperature increase (+ 3 ° C by 2100) leading to an increase in potential evapotranspiration; iii) reinforcement of extreme events, droughts and floods. Projections under RCP 2.6; RCP 4.5, RCP 6.0 and RCP8.5, [1], indicated a general trend of temperature increases and with a pessimistic scenario of more than 2°C will cause millet and sorghum yields to decrease 15-25 per cent by 2080, with substantially higher impacts on sorghum yields[2]. The highest increase in daily maximum temperature is expected over southern Mali, where it is projected to reach >5°C above current temperatures in the RCP8.5 scenario by the end of the century[3]. The figure below present the projected mean temperature under 4 scenarios.

Figure 1: Vulnerability Index and sensitivity for Scenario RCP 4.5 and RCP 8.5 Year 2050

Projected Mean-Temperature Mali; (Reference Period: 1986–2005)



Highcharts.com

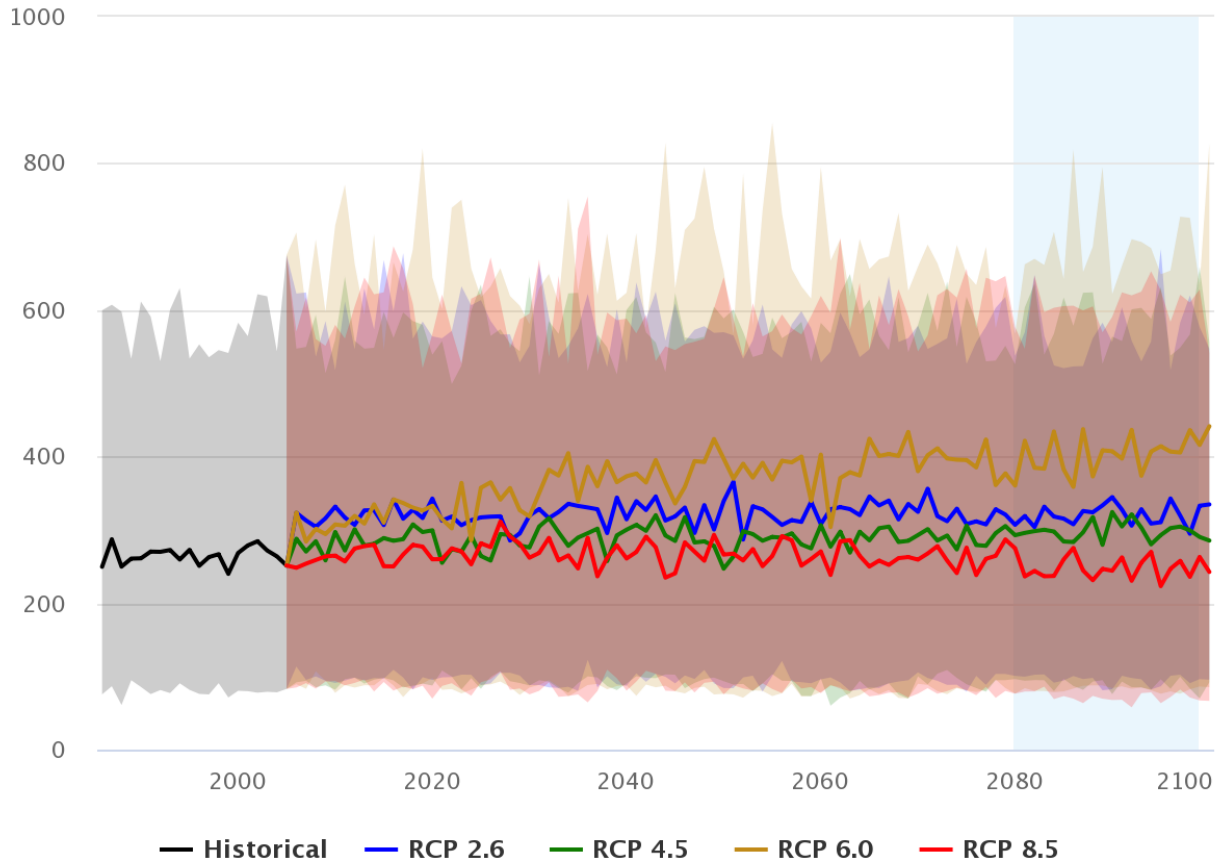
[1] (Meehl et al., 2007; Fontaine et al., 2011; Diallo et al., 2012; Monerie et al., 2012)

[2] Ibid.

[3] Also see ACMAD, 2020.

Under the same projections RCP 2.6; RCP 4.5, RCP 6.0 and RCP8.5[1], it is projected a shift in precipitation patterns with the lengthening of the dry season and more frequent dry spells combined with less frequent and more intense rainfall over shorter wet seasons have affected the balance of the water cycle, resulting in a greater frequency of extreme rainfall events and severe flooding events[2]. Under RCP8.5 projections of extremes related to floods (e.g., r1xday, r95ptot, preptot, etc.) indicate a north-south spatial gradient) with increased heavy precipitation (amount and occurrence) in the south and a decline in the north

Projected Precipitation Mali; (Reference Period: 1986–2005)



Highcharts.com

Source, Climate Projections, World Bank Knowledge portal, 2021

[1] (Meehl et al., 2007; Fontaine et al., 2011; Diallo et al., 2012; Monerie et al., 2012)

[2] Sixth Assessment Report (ipcc.ch)

7. These effects as well as the climatic vulnerability of the communities will have a negative impact on its economic development: i) potential drop in yields between 5% and 17% respectively for maize and wheat; ii) increase in late bush fires representing 63% of burnt areas and impacting the availability of pasture resources; iii) loss of productive capital linked to flooding, currently 12,000 ha flooded and 26,000 head of cattle in 2017. These increasingly unfavourable climatic conditions weaken ecosystems and the development of productive activities by amplifying the phenomena of erosion and desertification, making family farming even more vulnerable. Indeed, the effects of

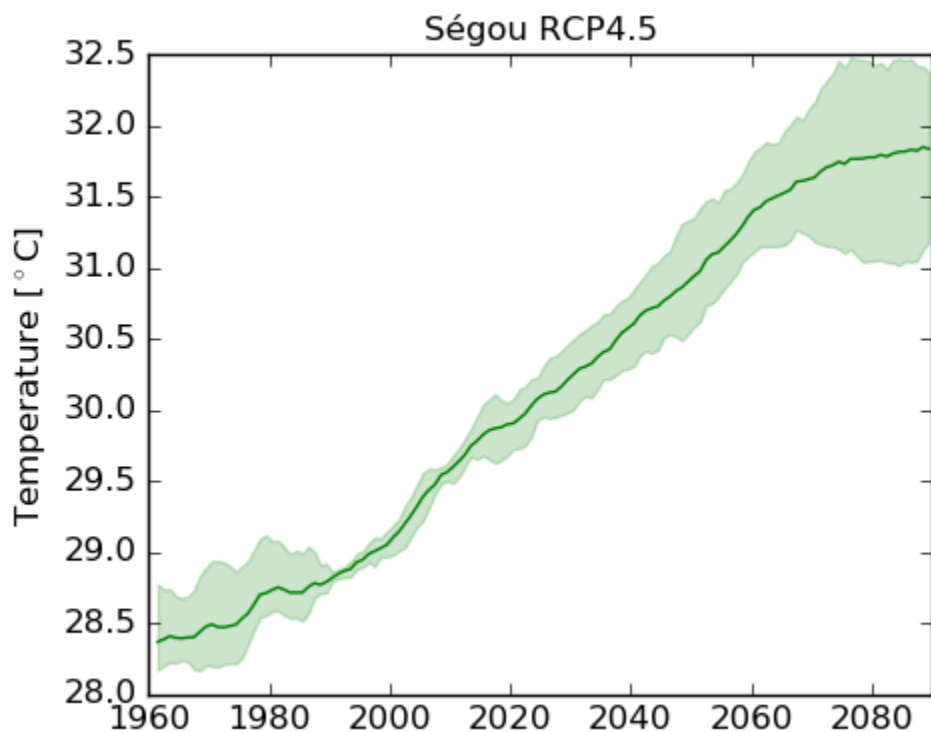
climate change alter the livelihoods of populations in the long term by acting on the productive potential (fertility, soil, water). It has increased the risk of violent conflict in different but related ways. For instance, competition over resources made scarcer by the impacts of climate change can exacerbate existing tension in many areas particularly in the north of the country[10]¹². In Mali Pastoralists and farmers have clashed as traditional herding grounds have been ravaged by droughts and desertification and heat waves made more recently floods. Children are the most impacted and at risk from food shortages as early childhood malnutrition greatly increases the risk of death, and can lead to irreversible mental and physical impairment. According to the last Demographic and Health Survey in Mali, Global Acute Malnutrition among children under 5 was reported at 15%⁷. In March 2014, 3.7 million people were estimated in moderate and severe food insecurity with 1.5 million in immediate need of food assistance.

Projected Climate Change and impacts IN SEGOU

8. The Ségou region, targeted by this project, remains one of the vulnerable regions to climate change in Mali. Ségou Region is divided into 7 cercles encompassing 118 communes and 2,166 villages. The total population is estimated to 2 million people. With a rural population that is largely nomadic semi-sedentary or sedentary, the population consists of many ethnic groups such as the Bambara, Bozo, Soninke, Malinké, and Toucouleur. The main economic activities are agriculture, livestock, pottery, market, fishing and industry.

 9. In this region, climate change has resulted in several changes that have changed the conditions of production: (i) shifts in the climatic calendars (delay in the arrival of the rains in particular) confusing the crop calendar for the farmers; (ii) changes in annual rainfall amounts received with more severe and / or more frequent drought periods; (iii) increased frequency of abnormal events (cyclones, abnormally high temperatures (0.5 ° c temperature increase in this region between 1950 and 2000), (iv) high temporal and spatial variability; (v) increased frequency of drought at the end of the season; etc. All of these phenomena lead to lower yields and impoverishment of populations. Farm capital is affected and all contribute to increasing the vulnerability of the poorest. The impossibility of using traditional risk management mechanisms and the high level of uncertainty undermine the systems and induce short-term strategies that are often damaging to the environment and even to the economic sustainability of the farms. Besides, the unavailability of water in connection with the large evaporation of surface water, as a result of high temperatures / winds, the fall in groundwater levels, and a severe low water level in rivers and streams constitute a hindrance to the development of agriculture especially irrigated farming of counter season to relieve the food shortage and improve the income of the populations in this region. The food-secure population rate is less than 20% in this region of Segou.
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10. The rest of the population, more than 80% of the population, is in a situation of food insecurity, either severe, moderate or weak. This situation, which is already aggravating over the years, will be more precarious in view of projections on climate change that predict an even darker future for Mali's climate. According to the results of various climate models, climate trends in future scenarios imply an upsurge in the impacts of climate change on the main sectors in Mali, including agriculture and livestock. The most likely climate scenario for the 2100 horizon averages an increase of temperatures of 3 °C and a decrease in rainfall of 22% compared to normal over the whole territory. This translates into a displacement of the isohyets towards the South. It should be noted that the increases in temperature will be 0.5 °C; 1 °C; 1.5 °C; and 1.7 °C, in 2020, 2025, 2030, and 2050, respectively. For all the localities of Mali, the most likely climatic scenario foresees a decrease of the rainfall with the loss rates compared to normal from 1% to 5%; from 2% to 6%; from 5% to 8%; from 5% to 10%, respectively in 2020; 2025; 2030 and 2050.
11. The agriculture sector will be more affected by climate disruption. Food insecurity and poverty will increase. Faced with this situation, it is necessary to develop a new paradigm for agricultural production under the conditions of climate change. Thus, the project to strengthen the resilience of Ségou to climate change through the promotion of modern irrigation techniques was retained by the Malian Government. This project seeks to develop a holistic approach in the Ségou region in order to overcome the recurrent problems facing rural poor communities in terms of resilience to climate change and provide sustainable solutions to the fight against food insecurity for beneficiaries.



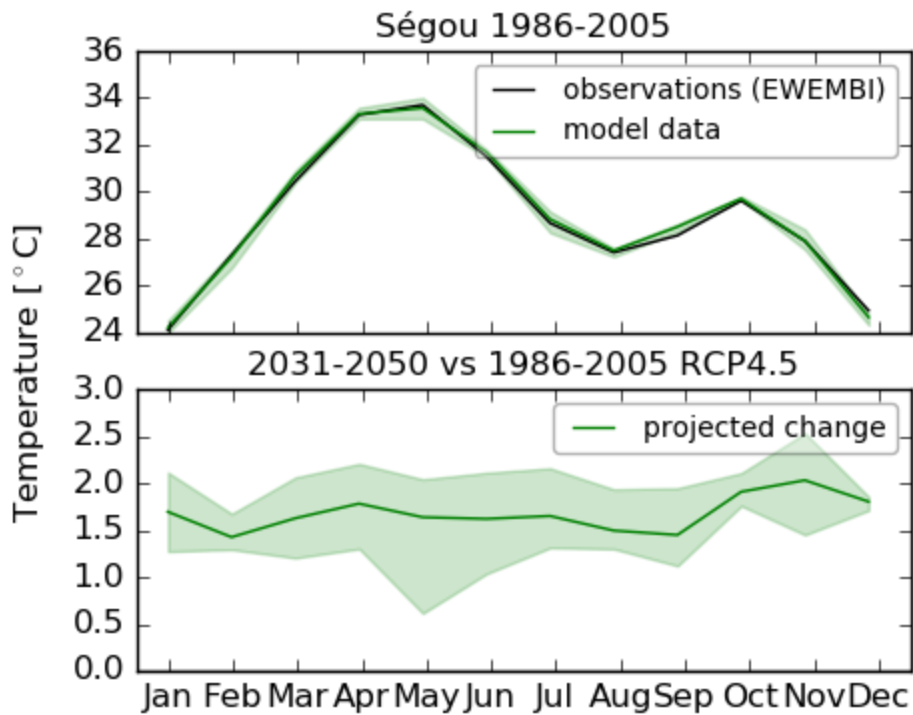


Figure 1: [Regional climate model](#) projections for temperature displayed as 20 year running mean. The line represents the [ensemble mean](#) while the shaded area represents the model spread. The projections are based on the [emission scenario RCP4.5](#).

Top: Annual cycle of temperature for the period 1986-2005. Bottom: Changes in annual cycle projected for 2031-2050 compared to the reference period 1986-2005. [EWEMBI](#) data is shown in black, [regional climate model](#) simulations in green. The green line represents the [ensemble mean](#) while the shaded area represents the model spread. The projections are based on the [emission scenario RCP4.5](#).

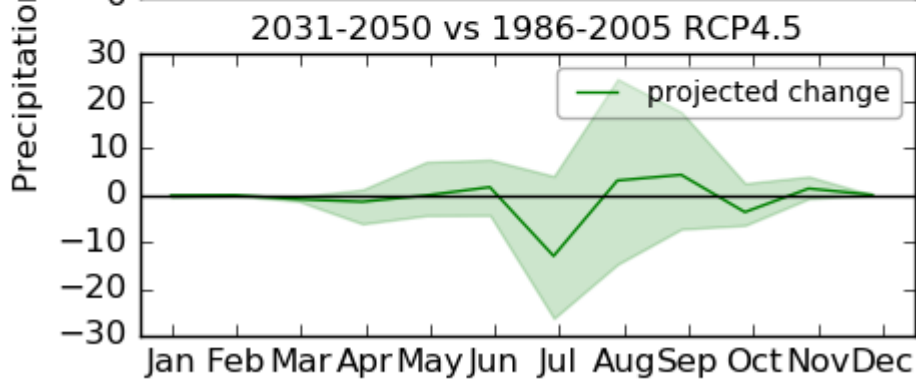
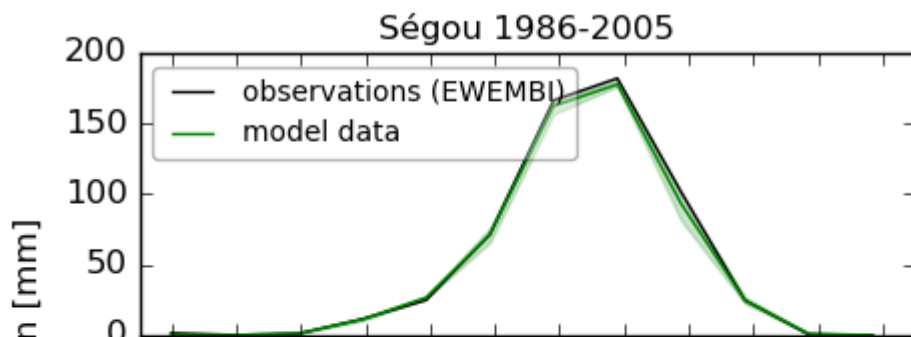
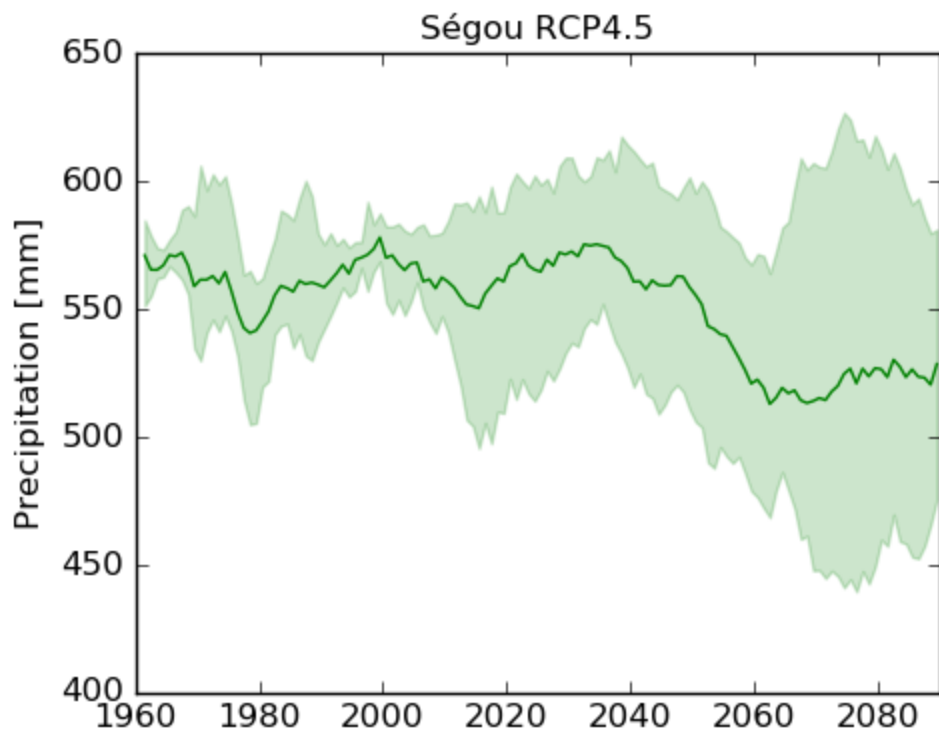


Figure 2: [Regional climate model](#) projections for precipitation displayed as 20 year running mean. The line represents the [ensemble mean](#) while the shaded area represents the model spread. The projections are based on the [emission scenario RCP4.5](#).

Top: Annual cycle of precipitation for the period 1986-2005. Bottom: Changes in annual cycle projected for 2031-2050 compared to the reference period 1986-2005. [EWEMBI](#) data is shown in black, [regional climate model](#) simulations in green. The green line represents the [ensemble mean](#) while the shaded area represents the model spread. The projections are based on the [emission scenario RCP4.5](#).

12. In Segou, increasing temperatures will cause greater evapotranspiration, which will lead to drier soil conditions in many areas and coupled with an increase in demand means water availability is likely to decrease regardless of whether there is an increase or decrease in precipitation. The decrease in water availability may make conflict between agriculturalists and pastoralists more likely. Strengthening the synergies between agricultural and pastoral practices, for example through the traditional practice of allowing grazing for fodder on cultivated land, will help to avoid conflict[11]¹³.
13. Climate change is also expected to increase variability and the incidence of extreme weather events, such as droughts, floods and intense rainfall events, and without improved planning and management, the incidence of disasters can be expected to increase. This may increase the frequency of floods in the country, which would destroy crops and property, increase erosion of already fragile soils, and require dams to cope with greater flows of water. Health is likely to be affected by increased maximum temperatures, an increase in diarrheal disease if floods become more frequent and possibly longer-term conditions related to mal-nutrition depending on the effect that climate change has on food security

Vulnerabilities and Exposure to Climate Change: Key Impacts to lives and livelihoods

14. Mali is highly dependent on the primary sector, which employs 83% of the population, and comprises 50% of the GDP, and as such is particularly vulnerable to the impacts of climate change. Without adaptation measures there are likely to be adverse effects on agriculture associated with these changes in climate, although the extent of the effects varies greatly depending on different projections for precipitation. The costs of climate change have not been calculated for Mali, and it would be difficult to do so given the uncertainties in climate projections. The Stern Review, however, indicates that for developing countries the costs could be in excess of 10% of GDP with a warming of 5-6°C. It is also difficult to estimate the effects of climate change on the informal economy, which plays an important role in the livelihoods of many Malians, and there is a lack of information on the impacts on urban areas. What is clear, however, is that already vulnerable, poor rural groups will be particularly affected by the impacts of climate change and that climate change will need to be integrated in development planning in Mali if the ambitious
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growth plans set out by the government are to be met, in particular as the majority of this growth is based on natural resource exploitation[12]¹⁴.

Climate Change impacts on Livestock

15. Livestock, an indicator of wealth and food security in many households, is likely to suffer heat stress and reduced production from rising temperatures (Climate Risk Profile Mali, 2018). Desertification and drought, along with expansion of armed groups in the north, have altered pastoralists' range and pasture access, contributing to increased herder-farmer conflict. Higher temperatures and lower rainfall may lead to decreased vegetation, affecting grazing potential and fodder production. Climate change will also impact the range and incidence of pests and diseases afflicting livestock. A hotter, wetter climate may expand the range of Rift Valley fever in some areas (with particularly adverse effects on sheep) and increase transmission risk for African swine fever. A hotter and drier climate, however, may lead to increased poultry losses as a result of more frequent outbreaks of Newcastle disease and increased risk of avian flu, as well as higher exposure to anthrax as reduced water availability drives larger numbers of livestock to graze in dry flood zones or contaminated watering ponds (Climate Risk Profile Mali, 2018).

Climate Change impacts on AGRICULTURE

16. Agriculture, which is mainly rainfed, is impacted by climate change. Despite the potential for irrigated land, estimated to be around 2.2 million hectares, roughly 400,000 hectares (18 percent in this overall potential) has been developed for irrigation[13]¹⁵. Projections on precipitations described above have impacts on water availability for agriculture, and crops productivity is likely to change based on drought exposure. Under RCP 6.0, the likely range of drought exposure of the national crop land area per year widens from 0.2-4.5 % in 2000 to 0.03-15.0 % in 2080. The very likely range widens from 0.1-13.6 % in 2000 to 0.02-29.4 % in 2080, meaning that some models project up to a threefold increase in drought exposure over this time period, while others project no change[14]¹⁶. With regards to yields, projections show negative trends for maize, millet, sorghum, and groundnuts. Under RCP 6.0, yields are projected to decline by 13 % for maize, 12 % for millet and sorghum, and 7 % for groundnuts by 2080 compared to the year 2000; and under RCP 2.6, yields are projected to decline by 8 % for maize, 8 % for millet and sorghum, and 14 % for groundnuts. Yields of cowpeas are projected to decrease under RCP2.6 and remain unchanged under RCP6.0; while for rice yields projections under RCP 6.0 show an increase of 29% by 2080 compared to the year 2000.

Climate Change impacts on Natural capital

17. Climate change may lead to a range of potential ecological implications, such as increases in dry season river flows and flooding that facilitate expansion of invasive species, or beneficial expansion of the floodplain fish nurseries (Climate Risk Profile Mali, 2018). Climate changes and population growth affecting the spatiotemporal inundation patterns of the IND in turn have an impact on food production and food security. For economically important inland fish species like characin and perch, rising temperatures alter water quality and dissolved oxygen content in lakes, harming fish reproduction, survivability, and virility. Rainfall variability and drought can lower
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water levels of tributaries and prevent seasonal fish migrations to rich flood plains for feeding and breeding. Beyond potential impacts to the IND, higher temperatures and lower rainfall may lead to decreased density of tree and shrub species. This vegetation is not only important for soil and water conservation, but also a significant source of construction material and fuelwood. This impact is further exacerbated by the southward shift of vegetation zones (Climate Risk Profile Mali, 2018).

Climate change impacts on water

18. Climate impacts on water resources are varied. Prolonged droughts and lack of rainfall have imposed limitations on water availability to communities throughout Mali. Estimates from a case study by N'Djim and Doumbia predict a 52 percent decline in per capita freshwater supplies by 2020 primarily due to projected decreases in precipitation and future population growth. Even as overall rainfall decreases, climate variability and the likelihood of extreme events are anticipated to increase with climate change. This may result in greater frequency and intensity of heavy rainfall events and storms such as those seen in the country in the 1960s, 1990s, and 2000s, which caused floods, contaminated surface and groundwater, and caused siltation of surface water sources. In areas like the Niger River flood plain, heavy rainfall events during the rainy season can lead to overflows of the Niger River and intense flooding, causing a loss of lives and livestock, destruction of settlements and infrastructure, and land degradation. Non-climate stressors such as pollution, inadequate management of irrigation systems, sedimentation, and siltation also threaten water resources in Mali. (USAID, 2012). In line with precipitation projections, water availability is projected to decline by 20 % in the south-west of Mali by 2080 under both RCPs (2.6 and 6.0), while in the northern half of the country, water availability is projected to increase by 15 % under RCP2.6[15]¹⁷.

Climate change impacts on health

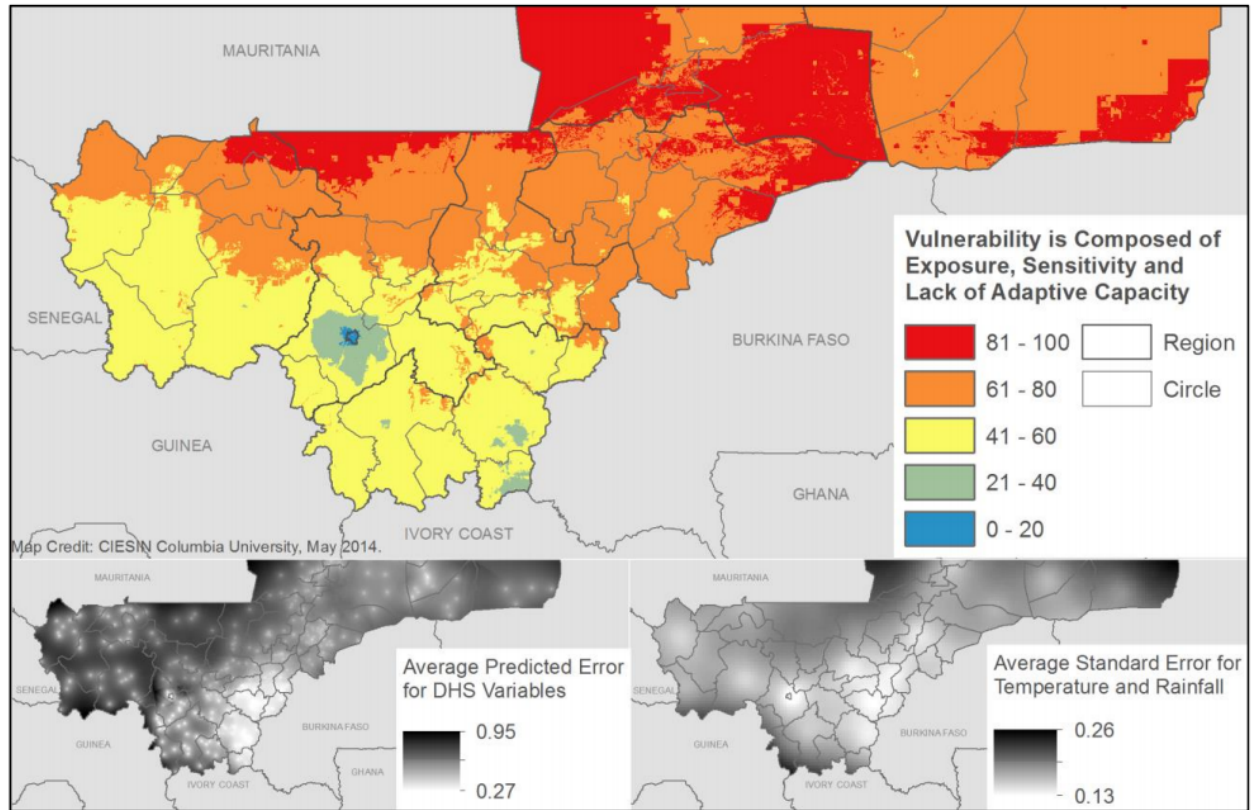
19. Rising temperatures and more frequent heat waves also increase exposure to heat stress, which can have both direct impacts on human health (e.g., heat rash, heat stroke) and indirect impacts (e.g., heightened food insecurity and malnutrition resulting from crop failure and decreased livestock productivity) (Climate Risk Profile Mali, 2018). Mali has high rates of diarrheal disease because only 25 percent of the population uses improved sanitation facilities and only 77 percent uses piped water or other improved drinking water sources. Although the incidence of diarrheal disease declined 32 percent from 2005 to 2016, higher temperatures and increased flood risk may increase transmission of pathogens. Southern Mali lies in the "meningitis belt," characterized by seasonal epidemics during the dry season. Although the exact linkages to climate have not been isolated, risk factors include dust and low humidity—both of which may increase in a drier, hotter climate. Twenty-five percent of Malian families are considered moderately to severely food insecure, and one in three children under the age of five is affected by stunting. Malnutrition also increases susceptibility to other diseases. Decreased agricultural production as a result of climate stressors may lead to increased household food insecurity (Climate Risk Profile Mali, 2018).

Vulnerability ranking and Mapping

20. Generally, vulnerability proceeds in a south-north gradient, with lowest vulnerability in the extreme south and around Bamako, and gradually increasing vulnerability northward with the exception of some areas of moderately low vulnerability in the Niger Delta and along the Niger River. In this map, we have also included inset maps (Figure 8, bottom) that provide information
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on uncertainty levels in the DHS and climate data that provided the basis for seven out of 18 indicators. Results are more robust in areas that are white or lightly shaded in both inset maps; conversely, users should be more cautious about results in areas that are dark in both maps. Note that these maps reflect spatial gaps in measurement rather than measurement error per se (e.g., problems of survey design or instrumentation). (USAID, 2014a).

Figure 2: Climate vulnerability index for Mali



1a2. The main barriers and threats to be addressed by the project

21. In Mali, smallholder farmers are confronted with climatic but also non-climatic stressors (e.g. socio-political and economic factors). Climate change is likely to exacerbate some of these structural causes of conflicts, in particular: and non-climatic stressors (demographic pressure through internal displacements, inadequate governance and landscape management plans shifting transhumance routes to reach more abundant resources for the cattle; degradation and scarcity of natural resources) which vary and interact across three spatial scales (household, community and district levels) to influence rural livelihood vulnerability of smallholder farming households IPCC[16]¹⁸ 2014; Nyantakyi-Frimpong and Bezner-Kerr 2015[17]¹⁹; Quinn et al. 2011).

22. Non-climatic stressors such as land use change, wildfire, unsustainable agriculture, migration, political instability, population growth, over fertilization, and lack of education exacerbate the vulnerability of farming householders. These stressors can operate either independently or in association with one another (IPCC, 2007). These stressors can degrade ecosystems (water, land and forest), which smallholder farmers depend on their current and future livelihoods, and thus reduce their adaptive capacity. In addition, at household and community levels, these stressors include a lack of money, limited access to market, poor infrastructure, high cost of farm inputs, and lack of storage of facilities. Lack of money is attributed to lack of employment and off-farm livelihood opportunities and reflects the low profitability of farming, which is partially due to limited access to markets (Antwi-Agyei et al. 2013, 2014[18]²⁰; Dasgupta and Baschieri 2010). Efforts to build climate change resilience at the local level in the Sahel must give attention to the nexus of both climatic and non-climatic stressors.
23. Government of Mali recognizes that strengthening the country's economic growth and addressing poverty reduction in a meaningful manner will require addressing climate and disaster risk. The Strategic Framework for Growth and sustainable development (2019-2023), adopted by the Council of Ministers of Mali is the reference document for the formulation and implementation of economic and social policies. The framework specifically identifies flood and drought hazards and the resulting food insecurity as significant barriers to addressing climate change. The national policy on environmental protection, the national Plan for Meteorological 2018-2027, The Agricultural Development Policy, National Plan to combat the desertification, The country is committed to the Paris Climate Deal and the SDGs. Mali has signed various international conventions and mechanisms relevant to climate change adaptation as well as land degradation and biodiversity, and has produced a number of national strategic plans and reports. , National Policy on Climate Change. These include ? the United Nations Framework Convention on Climate Change (UNFCCC) National Determined Contribution, Biodiversity convention, National Policy on Climate Change (source NPCC). Despite the political crisis over the last past years, the country has demonstrated strong commitment to advance its Climate Change Adaptation (CCA) agenda. The scope and ambition of this agenda are challenged by a number of persistent barriers.
24. **Barrier 1: Weak institutional capacities to strengthen integrated climate resilience approach in agro forestry production systems.** There is limited institutional capacity in the government and local communities to implement integrated approaches and climate-resilient agriculture. The government ministries tasked with agriculture and forestry have limited technical and institutional capacity to implement climate-resilient agriculture in an integrated manner. The country faces also limited coordination between the forest, environment and agriculture ministries in terms of policy and implementation. At the local level, small-scale farmers are not receiving the necessary support and training from extension services to implement climate resilient agriculture. One of main reasons for this lack of support and training is the priority given to export crops such as cotton by the government, at the expense of staple crops. Forest management is also hampered by a lack of capacity. There is lack of technical and human capacity to develop forest and agricultural management plans, local development plans that ensure effective community involvement and consider climate change.
25. **Barrier 2: Weak organizational capacities of farmers, local, national governments, and access to financing to foster integrated climate resilience into planning and production.** Local
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communities have insufficient skills and organizational capacity to anticipate, address and deal with climate impacts. Additionally, there is limited ability of local and national governments / met agency to issue critical warnings, and guide farmers on the best adaptation/mitigation measures. Weak organizational capacities prevent rural communities to have better access to financing, markets and climate information. At the local level, small-scale farmers are not receiving the necessary support and training from extension services to implement climate resilient agriculture. One of main reasons for this lack of support and training is the priority given to export crops such as cotton by the government, at the expense of staple crop.

26. **Barrier 3: Limited knowledge of the practice of climate dependent or rain-fed agriculture.** Limited knowledge of climate change impacts on smallholder agroforestry value chains and landscapes and effective adaptation practices and technologies, especially central part of the country where irregular increase of rainfall results in floods from the high discharge levels of the Niger River. There is also lack of capacity and understanding of Change in land management practices, agro forestry techniques, and irrigation techniques, which reduces GHG emissions and mitigates the impacts of climate change by making staple crop fields more resilient. When knowledge is available, it is not collected and disseminated effectively. In particular, there is no platform where information about climate change impacts in Segou and best adaptation practices are stored and shared with policy- and decision-makers.
27. **Barrier 4: Limited investments in community agro forestry and livestock management and climate-resilient agriculture.** Mali is among the poorest countries in the world and poverty is particularly prevalent in the country's rural areas. Consequently, neither the government nor local government communities have the means to invest in agroforestry climate resilience agriculture and forest landscapes. This lack of investment results in local communities being unaware of the considerable environmental and socioeconomic benefits that can be generated from agroforestry and climate resilience. Underfunding of the agricultural, livestock and forestry sectors also means that communities are not receiving the necessary support and training from extension services to implement climate resilient agriculture and to adopt an Ecosystem based Adaptation (EbA) approach in their management of adjacent forests. The lack of investment often results in unsustainable practices such as overexploitation of the natural resources.
28. Throughout the Ségou region, the concerns that the project will tackle revolve around the total degradation of plant cover. This degradation is due to not only climate change, but also human action. The population is encroaching on the forests, destroying their biodiversity through unsustainable use of natural resources. This has led to high levels of degradation and loss of biodiversity, which further contributes to climate vulnerability. It also contributes to the scarcity of water resources, which makes it difficult for families to engage in horticultural production. Other problems smallholder farmers face include the lack of land for farming near communities, the difficulties of access to and land plots for women, loss of pastureland and watering holes for transhumant breeders. The silting up of water bodies make it difficult to develop fishing activities. To this, one must add the threat of terrorism, which exposes already vulnerable communities to food insecurity and violence.
29. Deforestation is uncontrolled due to poverty and the absence of integrated sustainable management systems for community forests. People engage in excessive logging to earn income. The project will seek to end the overexploitation of forest resources for income by promoting sustainable management techniques and income generating alternatives such as agroforestry systems, which incorporate sustainable cattle, sheep, poultry and fish farming methods around villages. The domestication of species of very high commercial and medicinal value. In addition, it will promote non-timber forest

products to empower women economically. Agro-forestry activities such as afforestation and reforestation will be part of these activities. More in-depth socioeconomic and cultural surveys to map land use and to clearly define and understand the position of women and vulnerable groups and their access to land resources will be carried out in the PPG phase. The project will help build a strong and bankable sub projects and initiatives under component 3 and 4 and demonstrate the profitability of the sector to financiers and businesses alike, encouraging other actors to participate in these markets later in time. These initiatives will be financed by the various projects identified and supported by IFAD such INCLUSIF and the concessional and green lines available at the Agricultural Banks of Mali and other Microfinance Institutions to improve access to investments . In addition, IFAD also is developing a GCF regional Funding proposal called Inclusive Green Financing Initiative (IGREENFIN): Greening Agricultural Banks & the Financial Sector to Foster Climate Resilient, Low Emission Smallholder Agriculture in the Green Great Wall (GGW) countries - Phase I. Mali and Segou are covered and the objective is support the greening of financial institutions (the agricultural bank of Mali; and microfinance institutions) through climate line of credit for adaptation and mitigation which targets farmers in all regions including SEGOU. The program also support the design of green lending products to build the resilience of value chains and farmers to climate change. The program is under final review and to be approved at the next GCF board of February 2022. With this facility being set up and ongoing investment provided by INCLUSIF project , the barrier related Limited investments in community agro forestry and livestock management and climate-resilient agriculture will be addressed and GEF resource use to adress the other barriers to avoid duplication. Synergies will be built at the PPG level.

1a3. The baseline scenario and any associated baseline projects

30. **Baseline scenario related to governance and climate change.** At the national level, policies and strategies in place generally create favourable conditions for rural development and sustainable landscape management. Key policies include: The Strategic Framework for Growth and sustainable development (2019-2023), the national policy on environmental protection, the national Strategy for Meteorological Development 2018-2027, the Agricultural Development Policy, National Plan to combat desertification, National Policy on Climate Change, the United Nations Framework Convention on Climate Change (UNFCCC) National Determined Contribution, Biodiversity convention, and National Policy on Climate Change.
31. **Baseline situation in the SEGOU targeted region.** Nowadays, disease outbreaks, such as the COVID-19 pandemic crisis not only pose threats to the population's health, but also cause major disruptions in entire agro forestry value chains, making rural communities more at risk. Climate change predictions indicate that disease outbreaks are likely to become more common in years to come. Hence, the need for improved integrated approaches and planning at local level that include climate change hazards and disasters.
32. In Segou, There is an increasing number of climate-related hazards and disasters, especially droughts, intense rains and floods and heatwaves with very limited resilience and adaptive capacities. According to the ND-GAIN vulnerability index, Mali's Adaptive Capacity Scoring is 0,731 and Vulnerability Ranking Scoring 0,609, and it is one of the world's least resilient countries.

33. Furthermore, Segou experiences high demographic growth, which implies significant increases in demand for food, as well as fragile socioeconomic conditions. The increasing impact of climate-related multi-hazards (dry spells or drought, disease, locusts and other pests, floods, heatwaves, etc.) are affecting a larger range of sectors, as their impacts on agriculture spread into the broader economy. This affects not only livelihoods and food security, but also energy production, and water resources. The region's total population increased from 3,038,000 in 2017 to 3,125,000 in 2018 and to 3,214,440 in 2019 ?a growth rate of 2.8 percent annually, slightly below the national rate (3 percent). This population is vulnerable to other hazards and socio-political changes. The lack of reliable data, knowledge and capacity in Segou region on climate change is a major barrier to integrated approach on climate resilience. There are large gaps in the technical capacity and infrastructure for collecting, processing and disseminating data on climate hazards and climate change, and its impact on agricultural, livestock, and forestry sectors.
34. The capacity of smallholder farmers in Segou to adapt to climate change and variability is extremely low. Rural communities in the region engage in unsustainable practices that are not only highly vulnerable to climate change and variability, but also contribute to it. Current coping strategies and agricultural practices (rain-fed agriculture, deforestation, overgrazing of livestock, logging and hunting) in the context of climatic stress are clearly inadequate and exacerbate food insecurity, malnutrition and conflicts over resources.
35. For this project, the LDC fund is providing a \$4 million grant. In Mali, the TFPs intend to work both on the issue of development of resilience and adaptation to fight CC. It also intends to develop resilience of vulnerable communities, mobilization of financial and natural resources, and multi-stakeholder integrated approaches to fight against climate change, through the management of community common resources for poverty alleviation and food security through incentives on climate smart agriculture.
36. **Associated baseline projects.** The World Bank, the AfDB, FAO, OMM, and other technical and financial partners in Mali have conducted and are continuing to conduct various studies and projects or programmes in the central regions of S?gou. That is extended at the national level (including climate risks, capacity building, development of hydro-meteorological services, and the development of certain ecological-based adaptation activities). Some initiatives on IGAs or value and market access are initiatives that the project will be scaling up. The preparation of the PIF has already enabled us to initiate a first synergy work with technical and financial partners. This work will be strengthened during the PPG to ensure the commitment of other donors such as UNDP and FAO. The following baseline projects will provide co-financing for the proposed project and thus the proposed GEF LDCE investment. World Bank, UNDP, AFD, the EU and the Governments of Canada and Japan, among others are contributing. All these projects represent ?the baseline project investments? totalling USD 26 million, as summarized in [Table 1](#):

[Table 1](#): Associated baseline projects investments

| Program title (short) | Baseline Programs (title, topic) | Relevance to Project's Components | End of Project | Baseline Amounts considered |
|-----------------------|---|--|----------------|-----------------------------|
| MERIT | The Multi-energy for Resilience and Integrated Territorial Management project contributes to the improvement of food and nutritional security, poverty reduction and resilience, including climate resilience of the rural poor in southern Mali. | Promotion of biodigesters; strengthening the institutional framework for the promotion of renewable energies; building the resilience of production systems and integrated land management | 2024 | 29 billion FCFA |
| FIER | Training and integration of youth | Sustainable paid employment of rural youth; agricultural sectors; economic activities | 2023 | 28.1 billion FCFA |

| | | | | |
|------------------|--|---|------|-----------------|
| INCLUSIF | Aims to improve the financial inclusion of populations, organizations and rural Malian businesses (in particular women?) excluded from the traditional financial system in order to improve their resilience to climatic, social and economic shocks. The project will reach 400,000 direct beneficiaries (of which 50% are women) and 360 professional agricultural organizations through savings, credit, micro insurance and income-generating activities and rural microenterprises. | Scaling up rural microfinance programme (RMP) and PACEPE. | 2024 | 58 billion FCFA |
| BIRD and IDA GCF | Hydromet Program for Africa | Building Climate Resilience in Sub-Saharan Africa | 2024 | 22.7 million |

| | | | | |
|---|---|---|------------------------------------|--------------------|
| <p>PIF/GEF/UNDP Climate security and sustainable management of natural resources in the central regions of Mali</p> | <p>Ensure long-term sustainability of vulnerable productive landscapes in Mali's central region of Mopti, through nature-based solutions that reverse land degradation, strengthen communities' climate resilience and promote conflict resolution.</p> | <p>Strengthen the resilience of degraded production landscapes vulnerable to climate impacts through rehabilitation efforts; support family farms, youth and women in the adoption of resilient and sustainable livelihoods.</p> | <p>2026</p> | <p>6.092.694</p> |
| <p>Gourma elephant project, Mopti</p> | <p>#9661 UNDP: Community-based natural resource management that resolves conflict, improves livelihoods and restores ecosystems throughout the elephant range (Timbuktu, Mopti)</p> | <p>Strengthening of the legislative framework and national capacity to fight against wildlife crime; protecting Gourma elephants from poaching and secure seasonal migration routes and key habitats; community management of natural resources (CMNR) in the elephant habitat of Gourma; knowledge management, monitoring, and evaluation and mainstreaming of gender issues</p> | <p>2019/2025 GEF/UNDP</p> | <p>4.1 million</p> |

| | | | | |
|--------------------------|--|--|------------------|---|
| <p>GE DEFOR III/PCVA</p> | <p>Contribute to the strengthening of governance, the transfer of skills in the management of forest resources and the increase in the incomes of disadvantaged rural populations (men and women), mainly through the promotion of the cashew nut sector, valuation of non-timber forest products, implementation of climate change adaptation measures, land tenure security and reinforcement. Implemented through 5 major components and 3 crosscutting issues, which are: gender and HIV/AIDS, climate change and land tenure security. The programme operates in 69 communes of circles belonging to 5 regions: Kayes, Koulikoro, Sikasso, S?gou and Mopti.</p> | <p>Strengthening governance and transfer of skills and resources for the management of forest resources; food security, promotion of the cashew sector adaptation and resilience; improvement of the populations' incomes;; capacity-building for rural development agents</p> | <p>2018/2023</p> | <p>Co-financing of approximately 23,965,342 USD, of which 21,440,000 USD (approximately 89%) from Sweden and 2,525,342 USD (or 11%) from Malian counterpart capacity.</p> |
|--------------------------|--|--|------------------|---|

| | | | | |
|--------|--|---|------|------------|
| PREEFN | Economic and Environmental Rehabilitation Project of the Niger River S?gou region, WB | Strengthening the strategic management and monitoring of Niger River resources; improving the navigability of the Niger River; improving the socioeconomic viability of activities on the Niger River; improving living conditions and ecosystems in the Inner Niger Delta. | 2024 | 17 billion |
|--------|--|---|------|------------|

| | | | | |
|-----------|--|---|------|-----------------|
| IGREENFIN | <p>Inclusive Green Financing Initiative (IGREENFIN): Greening Agricultural Banks & the Financial Sector to Foster Climate Resilient, Low Emission Smallholder Agriculture in the Green Great Wall (GGW) countries - Phase I.</p> | <p>The main objective of IGREENFIN is to build and scale up the resilience and adaptive capacity of farmers? organizations (FOs), cooperatives and micro, small and medium-sized enterprises (MSMEs) in Niger by removing key barriers to farmers? access financial and non-financial services that support the adoption of best climate change adaptation and mitigation practices and solutions</p> | 2028 | 228 million USD |
|-----------|--|---|------|-----------------|

| | | | | |
|---|--|---|-------------|---------------------------|
| <p>Integrated Climate Risk Management Sahel</p> | <p>The Africa Integrated Climate Risk Management Programme: Building the resilience of smallholder farmers to climate change impacts in 7 Sahelian Countries of the Great Green Wall (GGW)</p> | <p>This programme aims to complement ongoing or future IFAD and AfDB interventions in the region, especially the new IFAD regional G5+1 Sahel programme on resilience building. IFAD and its partners, AfDB and WFP, have a long experience in building climate resilience in smallholder agriculture in the region. The programme's main overall objective is to increase resilience and enhance the livelihoods and food and water security of smallholder farmers and rural communities through integrated climate risk management of natural resources (water, soil, ecosystems) in seven countries of the Green Great Wall (GGW)</p> | <p>2028</p> | <p>143,327million USD</p> |
|---|--|---|-------------|---------------------------|

| | |
|--|---|
| | TOTAL (of which approx. US\$9 million is expected to contribute to co-financing) |
|--|---|

1a.4. The proposed alternative scenario with a brief description of expected outcomes and components of the project

37. The problem that the proposed project seeks to address is the increasing climate vulnerability of communities that depend on agro-sylvo-pastoral production systems in Segou for their livelihoods. The project targets different interventions in the central region, such as watershed areas, agro-ecological zones, and dam areas or water basins. The activities will focus on agriculture, horticulture, fishing, and pastoral production. A situation map, is provided. The objective of the proposed project is to reduce the vulnerability of communities in central Mali to the risks posed by climate change through the adoption of climate smart agro-sylvo-pastoral and fish farming practices in Segou.

38. Climate changes pose a significant risk to agro-sylvo-pastoral and fish farming production and livelihoods, potentially causing reduction in productivity, food production systems and therefore significantly influencing climate migration patterns and fuelling tensions and conflicts. The project intends to address the underlying constraints that further exacerbate the projected climate change impacts and that represent major barriers to adaptation and resilience in the agro-sylvo-pastoral production systems. This project will address anticipated potential future climate scenarios by adopting an integrated climate management approach. The interventions will also indirectly address non-climatic stressors as outlined in the barrier analysis.

39. The integrated project approach considers the complexity of interactions between humans and ecosystems within agro-sylvo-pastoral systems, in which: i) ecosystems need to be sustainably managed so that they can provide ecosystem services supporting resilient rural livelihoods; ii) different uses of limited resources (land, water, forest resources etc.) often compete, and the modalities of this competition are evolving; and iii) both the human and the ecosystem components are directly and indirectly impacted by the effects of climate change. The worst-case scenario in selected target areas is one where rural livelihoods are disrupted not only by climate change, but also by increasing anthropic pressure from: i) internal migrations to flee insecurity; and ii) adaptation strategies from other populations, e.g. transhumant pastoralists seeking more favourable condition for their cattle. In this worst-case scenario, the degradation of natural resources is compounded by direct and indirect climate impacts, leading to more frequent conflicts over the use of these resources and ultimately to the weakening of social cohesion and spread of insecurity. The project theory of change is presented in the Annexes. The project will target the same IFAD target groups, particularly youth and women, and a gender action plan will be developed at PPG stage as well as baseline targets.

40. To address the impact of COVID on ongoing and future IFAD investment, The IFAD Rural Poor Stimulus Facility (RPSF) proposal will therefore be part of a stimulus package for the rural poor people to accelerate their recovery, by leveraging the ongoing IFAD-supported MERIT and INCLUSIF projects in the targeted areas. The availability of RPSF funds also mitigate the significant risks and

negative impacts associated to COVID-19 needs. This will allow the limited GEF resources to be used on the proposed objective.

41. The project objective will be achieved through four mutually reinforced components:

? **Component 1:** Institutional capacity building for enhancing resilience to climate change of rural communities

? **Component 2:** Development of integrated approaches to climate change adaptation and community-based natural resource management.

? **Component 3:** Acquisition of systems, tools and instruments required to develop the resilience of vulnerable communities to climate change.

? **Component 4:** Knowledge management, monitoring and evaluation, and dissemination of results.

42. These four components are presented below by outcomes and outputs.

43. **Component 1:** Institutional capacity building for enhancing resilience to climate change of rural communities. The *expected outcome 1* is the strengthening of institutional capacity of government bodies (AEDD, ministries of the environment, Ministry of Planning) to integrate and implement climate resilient approaches in the targeted region. This component will work to strengthen and build the capacity of key technical institutions and communes to better plan and mainstream climate change projections into planning and build their resilience. This will be done through the following outputs: (i) 500 staff from technical institutions are trained on the use of the IACC guide, with at least 50% women (*output 1.1*); (ii) 2 Communal and land use plans that mainstreamed CC are developed for the target region (*output 1.2*) and (iii) Climate change is mainstreamed into local communal Investment Plan to support the implementation of national climate related agenda -NDC and other convention related commitment (*output 1.3*). The key outputs are:

Output 1.1: 500 staff from technical institutions are trained on the use of the IACC guide (at least 50% women).

? **Output 1.2:** 2 Communal and land use plans that mainstreamed CC are developed for the target region.

? **Output 1.3** Climate change is mainstreamed into local communal Investment Plan to support the implementation of the national climate related agenda (NDC) and other convention related commitments)

44. **Component 2:** Development of integrated approaches to climate change adaptation and community-based natural resource management. The *expected outcome 2* is community-based adaptation strategies for alternative livelihoods designed to strengthen climate resilience of women and youth groups and reduce pressure on natural resources in the target regions. This component will

support the development of integrated approaches in agroforestry and natural resources management taking into account threats posed by droughts and variability. The Farmers Field Schools (FFS) will be used to transfer these approaches to local communities and promote the adoption and implementation of adaptation practices and technologies to address droughts, desertification and climate change, increase smallholder farmers' knowledge and capacity to foster the resilience through sustainable land and agroforestry practices. This component will improve agricultural/horticulture production value chains and ensure local socio-economic benefits that will guarantee economic resilience for all stakeholders, particularly in the context of COVID-19, and building back better. Within the FFS, a special focus will be given to women in order to ensure their effective participation. A study will be conducted to analyse what constrained women's participation to FFS, in Mali in general, but more specifically in the project area, and how their needs and priorities could be taken into account through these FFS. Furthermore, it will support the provision of adapted and improved seeds among producers to promote the growing of climate resilient native (local) species (*output 2.1*), set up seed banks and production laboratories for domestic plants adapted to changing climatic conditions, production and process shea butter and other local species with high commercial and medicinal value (HCMV) (*output 2.2*), and promote the adoption of sustainable, biodiversity-friendly agroforestry activities to improve farmers' productivity and their capacity to sustainably manage their land (*output 2.3*). These activities will complement and build on the ongoing activities of the FIER and INCLUSIF projects. The project will use the FFS already set up and under establishment by IFAD projects to maximize the efficient use of resources. The outputs of component 2 are summarized below:

? Output 2.1: 1000 ha of Climate resilient species, essences and seeds are produced and distributed by 1000 households to support the climate resilience agricultural production systems by sustainably intensifying production;

? Output 2.2: Local species with high commercial and medicinal value domesticated on 3,000 ha by 3,000 direct beneficiaries household using FFS and 21,000 indirect beneficiaries using agro-ecological horticultural practices to sustainably increase food security (at least 50% women);

? Output 2.3: Concrete agro-ecological measures to address the effects of drought, desertification and climate change are promoted on 2,500 ha with 1,000 farmers through FFS to support the climate resilience agro-ecological production systems by sustainably intensifying production. (Disaggregated by Gender, with 50% women).

45. **Component 3:** Acquisition of systems, tools and instruments required to develop the resilience of vulnerable communities to climate change. The *expected outcome 3* is community-based adaptation activities for groups of women and the youth to increase better access to finance, credit, and capacity in value chain management established and strengthened. This component will support the organizational capacity of farmers to develop and manage surface water retention basins, runoff catchment systems (BCER), animal drinking areas and canalization (*output 3.1*) support integrated market gardening areas to increase the income of vulnerable women and youth and improve households nutritional status; operationalize best climate practices for agro-sylvo-pastoral systems and fish farms, including afforestation, reforestation, agroforestry, conservation and restoration of degraded areas (*output 3.2*) and facilitate a better access to climate information generated by national institutions for decision making and selection of the right adaptation measures to climate change (*Output 3.3*). The outputs of component 3 are summarized below:

? Output 3.1: organizational capacities of 2,500 Farmers (at least 50% women) from 50 communities are strengthened to address issues related to climate impacts on value chains development;

? Output 3.2: Appropriate technical tools and integrated approaches to Climate change adaptation are adopted by 2,500 beneficiaries (at least 50% women) in 50 communities;

? Output 3.3: Capacities of 10 national institutions are strengthened to produce and disseminate real-time climatological, and hydro-meteorological information and services including in accessible language.

46. **Component 4:** Knowledge management, monitoring and evaluation, and dissemination of results. The *expected outcome* is that best agro-ecological, community-based climate change adaptation and climate risk reduction practices are collected, and disseminated in in the region and beyond. This fourth component will support collecting and developing trainings guide, audio-visual materials (brochures and videos) for consultations and community awareness activities for community members, especially women and youth, schools and television (**Output 4.1**), Policy dialogue and consultations throughout the project lifecycle to prepare a communication and an exit strategy (**Output 4.2**), and provide trainings to the main 100 journalist and 200 community leaders trained on IACC approaches and Social and environmental safeguard measures to better manage climate risk in the Segou region (**Output 4.3**). The main outputs of this component are as follow:

? Output 4.1: Endogenous and exogenous knowledge on best available technologies and climate resilient practices for production and post-harvest processing are identified and disseminated to at least 3,000 direct beneficiaries (at least 50% women) for adoption;

? Output 4.2: The results of the project are captured in an exit strategy for scaling with 3,000 direct beneficiaries and 21,000 indirect beneficiaries;

? Output 4.3: 100 journalist and 200 community leaders trained, 1500 lead farmers on IACC approaches and resilience building and 10 Social and environmental safeguard measures are identified and managed.

1a.5. Alignment with GEF focal area and/or Impact Program strategies

47. The proposed project focused on the integrated approach which considers the complexity of interactions between humans and ecosystems within agro-sylvo-pastoral systems to tackle climate change and improved agricultural practices and strengthen the resilience of value chains. The project is fully aligned with the LDCF programming strategy as summarized in the Table 2 below:

Table 2: project alignment with LDCF programming strategy

| LDCF objectives | LDCF outputs | Proposed project contributing to LDCF outputs |
|---|---|--|
| 1: Reduce vulnerability and increase resilience through innovation and technology transfer for climate change | 1.1.2: Livelihoods and sources of income of vulnerable populations diversified and strengthened | Output 2.1: 1000 ha of Climate resilient species, essences and seeds are produced |

adaptation

1.1.4: Vulnerable ecosystems and natural resource assets strengthened in response to climate change impacts 2.1, 2.2 and 2.3 1.2.2: Investment models developed and tested

and distributed by 1000 households to support the climate resilience agricultural production systems by sustainably intensifying production

Output 2.2: Local species with high commercial and medicinal value domesticated on 3,000 ha by 3,000 direct beneficiaries household using FFS and 21,000 indirect beneficiaries using agro-ecological horticultural practices to sustainably increase food security (at least 50% women),

Output 2.3: Concrete agro-ecological measures to address the effects of drought, desertification and climate change are promoted on 2,500 ha with 1000 farmers through FFS to support the climate resilience agro-ecological production systems by sustainably intensifying production. (Disaggregated by Gender, with 50% women)

Output 3.1: Organizational capacities of 2,500 Farmers (at least 50% women) from 50 communities are strengthened to address issues related to climate impacts on value chains development.

Output 3.2: Appropriate technical tools and integrated approaches to Climate change adaptation are

| | | |
|---|--|---|
| <p>2: Mainstream climate change adaptation and resilience for systemic impact</p> | <p>2.1.1: Development/sector policies and plans integrate adaptation consideration</p> | <p>Output 1.1: 500 staff from technical institutions are trained on the use of the IACC guide (at least 50% women).</p> <p>Output 1.2: 2 Communal and land use plans that mainstreamed CC are developed for the target region.</p> <p>Output 1.3 Climate change is mainstreamed into local communal Investment Plan to support the implementation of national climate related agenda (NDC and other convention related commitment)</p> |
| | <p>2.2.2: Adaptation and resilience relevant financing coordinated for synergistic programming including with the private sector</p> | <p>Output 1.3 Climate change is mainstreamed into local communal Investment Plan to support the implementation of national climate related agenda (NDC and other convention related commitment)</p> |

| | | |
|---|--|---|
| <p>3: Foster enabling conditions for effective and integrated climate change adaptation</p> | <p>3.1.1: Systems and frameworks established for the continuous monitoring, reporting and review of adaptation</p> | <p>Output 3.1: organizational capacities of 2,500 Farmers (at least 50% women) from 50 communities are strengthened to address issues related to climate impacts on value chains development.</p> <p>Output 3.2: Appropriate technical tools and integrated approaches to Climate change adaptation are adopted by 2,500 beneficiaries (at least 50% women) in 50 communities.</p> <p>Output 3.3: Capacities of 10 national institutions are strengthened to produce and disseminate real-time climatological, and hydro-meteorological information and services including in accessible language.</p> |
|---|--|---|

3.2.1 Capacities strengthened to identify, implement and/or monitor adaptation measures

Output 3.1:
organizational capacities of 2,500 Farmers (at least 50% women) from 50 communities are strengthened to address issues related to climate impacts on value chains development.

Output 3.2:
Appropriate technical tools and integrated approaches to Climate change adaptation are adopted by 2,500 beneficiaries (at least 50% women) in 50 communities.

Output 3.3:
Capacities of 10 national institutions are strengthened to produce and disseminate real-time climatological, and hydro-meteorological information and services including in accessible language

| | | |
|--|---|---|
| | <p>3.2.2: Increased awareness of climate change impacts, vulnerability and adaptation</p> | <p>Output 4.1: Endogenous and exogenous knowledge on best available technologies and climate resilient practices production and post-harvest are identified and disseminated to at least 3,000 direct beneficiaries for adoption (at least 50% women)</p> <p>Output 4.2: The results of the project are captured in an exit strategy for scaling with 3,000 direct beneficiaries and 21,000 indirect beneficiaries</p> <p>Output 4.3: 100 journalist and 200 community leaders, 1500 lead farmers trained on IACC approaches, resilience building and 10 Social and environmental safeguard measures are identified and managed.</p> |
|--|---|---|

1a. 6. Incremental/additional cost reasoning and expected contributions from the baseline GEF

LDCF, and co-financing;

48. The barriers identified in the analysis of the current operational and business model, particularly conventional agricultural practices, highlight that there is a need for improved capacities and resources in the context of climate change and COVID-19 in one of the poorest region of Central Mali (Segou). Climate Change will accentuate the overexploitation of resources and continue the negative impact on the natural capital which most of the population depends on. Degraded lands are threatened by ongoing

conventional agricultural processes and lack of adaptation practices. Weak governance and planning will precipitate the significant reduction of agrarian systems productivity and ecosystem services and resilience through ecosystem destruction in these areas. This project builds on all past baseline projects and complements ongoing initiatives in Mali listed as co-financing and no duplication is foreseen. This project intends to fill the gap assessed from all associated baseline projects both in terms of activities but also target areas and sub sectors particularly in this selected region of Segou.

49. In the alternative scenario made possible by GEF-7 LDCF funding, systemic and institutional barriers to the integration of climate change resilience into local planning processes, budgeting and agricultural practices will be addressed through improved governance and management frameworks for integrating climate change concerns into local planning and programming. The institutional capacities of local government structures directly involved in mainstreaming climate change into agriculture, and livestock will be strengthened and increased awareness of the importance of climate resilience. All of the gains that LDCF funding will produce will reinforce the overall resilience building benefits. During the PPG phase, the project's contribution to expected global climate benefits (low emission and climate resilient agriculture) will be further reflected through impact indicators and targets in the project results framework.

50. Apart from GEF funding, Mali is under a political transition and has limited sources of funding to support its climate agenda in the agricultural sector. The government budget is in deficit particularly in the COVID -19 context and therefore does not allow covering the costs related to integrated approaches to climate resilience at local level in the agricultural and environment sectors. The financing capacity of the domestic private sector is still too weak. These funds will be catalytic to the financial sector and other sources of funding, including the limited national budget allocations and investments to local governments, to sustain regular public and private expenditure on climate change and agricultural development after the project completion.

1a.7. Adaptation benefits (LDCF)

51. The baseline analysis of this project highlighted that agriculture is the backbone of the livelihood in Segou and main source of income for the poorest smallholder farmers. The fragile ecosystems are strongly threatened by human action but also the impact of climate change which force many young people to migrate and fuels instability. The project will support 500 farmers on climate resilient activities and integration in land use planning; 55,000 ha of land under climate resilience practices; 50 % increase of farm output value per hectare; 3,000 direct and 21,000 indirect beneficiary households with strengthened livelihood resilience (at least 50% of beneficiaries are women and 30% youth), 50% increase in youth and women employment opportunities in climate resilient agriculture; 250 new direct beneficiaries and 2,500 indirect beneficiaries reached (at least 50% women and 30% youth).

52. The LDCF funding will help to build the climate resilience of rural communities and their fragile ecosystems while maintaining their productivity through introduction of best adaptation practices. This project intends to harness the value of a large number of endemic species, including shea, and other local species with high commercial and medicinal value (HCMV). Through the FFS, the best climate practices for agro-sylvo-pastoral systems and fish farms, including afforestation, reforestation,

agroforestry, conservation and restoration of degraded areas will be introduced. Through the anti-erosion practices that the project will implement, land and biodiversity degradation in soils and at the ecosystem level will be reduced. The activities of crop diversification, water control, the sustainable use of non-wood forest products will reverse the trend towards reforestation driven by the search for income and fuelwood. Other activities such as the reduction of forest edge loss and harmful practices, the use of agroforestry trees that provide habitat for key species, the reduction of charcoal use, and safeguarding important endemic species will contribute to global environmental benefits. Component 1 activities will improve the governance responses to climate change and integration of climate resilience into local plans and investments frameworks. These gains in terms of forest cover, sustainable land management, protection of globally important species and ecosystems contribute to maintaining the state of the environment, to mitigate climate change through carbon sequestration, and to the increase in yields by the increase in soil productivity.

Innovation, Sustainability and scaling up

53. The project will innovate through agro-ecological techniques and climate resilient and low emission sustainable agricultural and value chain intensification technologies tackling land degradation and leaving larger area for biodiversity conservation or under sustainable use of management. Additionally, the project will support the local government to better include climate change into the planning process and local investment, while building the capacity of all actors and local authorities on integrated climate risk management. The project will also improve the FFS concept and business model by including climate finance as a topic. Agro-ecological approaches to be disseminated will include both innovative and traditional practices, such as: i) the use of climate-resilient crop varieties; ii) reduced tillage; iii) alternatives to chemical fertilisers (use of compost) and pesticides (biological control, intercropping); iv) fascines; v) zai; vi) the use of leguminous plants; and vii) crop rotation. In addition, a number of innovative SLM tools developed by the FAO will be presented in detail in the PPG and used throughout the project.

54. The project's sustainability depends on its ability to set up long-lasting mechanisms to better empower key stakeholders. The project will build on the achievements of the current FIER and INCLUSIF projects and on those of ASAP/PAPAM and PGDTE/PAPAM for the Mopti region. Furthermore, consultations will be conducted at all stages of project implementation to seek the point of view of project beneficiaries. This will create spaces for dialogue between stakeholders on the project activities, while also ensuring ownership and sustainability. Proven studies and on field experiences will be submitted to the National Assembly's Rural Development and Environment Committee to contribute to the elaboration and drafting of new policies.

55. The scaling up of best climate-smart, agroforestry and pastoral practices will be developed in the project's target areas. Community management and conservation techniques for natural resources (water, forests and land) will be favoured. Village communities or individuals using agro-ecological techniques to promote re-greening and regeneration of wood-related productive capital will plant degraded areas unsuitable for agriculture. These activities will be organized for groups of agricultural producers, market gardeners, breeders and fisher folk in the various target areas, with a special focus on the communities that are most vulnerable to the effects of climate change. Practical tools and instruments to ensure the integration of adaptation and/or mitigation measures in target communities will accompany all these approaches. These include solar lamps and streetlights, solar pumps, ecological or improved stoves in areas with a high rate of deforestation for fast growing trees for fuel

wood park creation, bio-digesters for gas production for cooking and for organic composting sites to produce organic manure for horticultural zones near villages? water basins.

[1] World Bank
 [2] Second National Communication
 [3] UNDP, Humnn development Report, 2018
 [4] UN report,
 [5] <https://www.reuters.com/article/mali-women-landrights-idUSL5N1FF5CW>

[6] R?publique du Mali. 2019. Agriculture et sources de revenu au Mali : Etat des lieux ? partir des donn?es de l?EAC-I 2017. Minist?re de l?Agriculture, Minist?re de l?Elevage et de la P?che, Minist?re de la Population et de l?Am?nagement du Territoire. Septembre 2019.

[7] <https://www.land-links.org/country-profile/mali/#1528747371583-6a831940-5063>

[8] FAO. 2011. The state of food and agriculture. Women in Agriculture. Closing the gender gap for development.

[9] FAO et Commission de la CEDEAO. 2018. Profil National Genre des Secteurs de l?Agriculture et du Developpement Rural ? Mali. Serie des Evaluations Genre des Pays, Bamako

[10] PNCC and SNC
 [11] weADAPT, 2016

[12] weADAPT, 2016

[13] <https://www.land-links.org/country-profile/mali/#land>

[14] https://www.pik-potsdam.de/en/institute/departments/climate-resilience/projects/project-pages/agrica/climate-risk-profile_mali_en

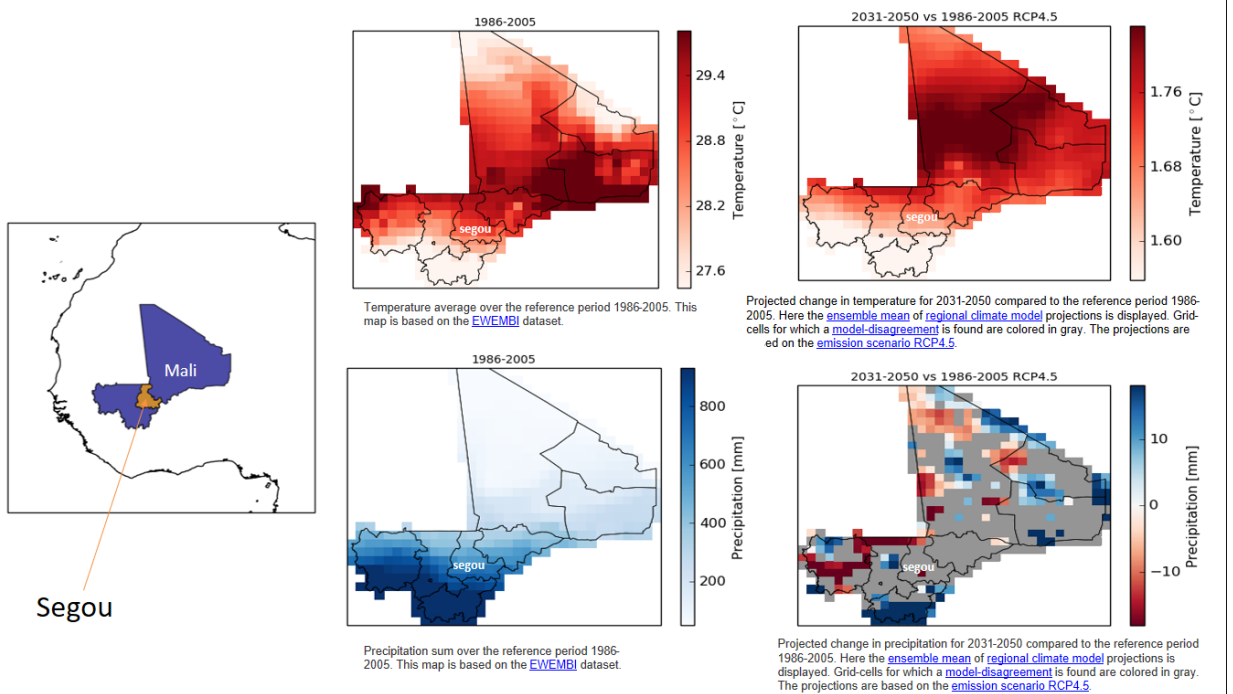
[15] https://www.pik-potsdam.de/en/institute/departments/climate-resilience/projects/project-pages/agrica/climate-risk-profile_mali_en

1b. Project Map and Coordinates

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

| Site | geonames.org ID | Brief description |
|-------|----------------------|--|
| SEGOU | 13?25?36?N/6?15?34?W | Circles of S?gou, Niono, Bla, San, Macina, Baroueli and Tominian |

| | | |
|--|--|----------|
| | | 40 sites |
|--|--|----------|



- Source: Climate Analytics, 2021

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

Consultations were organized at country level in Banjul, bilateral meetings and focus on the field

The Table 3 summarizes the list of stakeholders met.

Table 3: List of Stakeholders met during the design

| NOM ET PRENOMS | STRUCTURES | ADRESSES | |
|------------------------|--|--|----------------------------------|
| Amidou GOITA | Point Focal National du FEM | amidougaita@gmail.com | 66 88 36 48 71 76 85 31 |
| Oumar TAMBOURA | Chef Cluster Environnement PNUD | oumar.tamboura@undp.org | 76318080 |
| Kaba DIALLO | PFN-LCD-UNCDD, AEDD | teli1072@yahoo.fr | 77859725 63424145 |
| Boureima CAMARA | DG AEDD- Agence pour l'Environnement et le Développement Durable | bouricamara@gmail.com | 66 80 57 56 76 04 68 41 |
| Pr Fadiala DEMBELE | IPR/ISFRA Katibougou | faddembele@yahoo.fr | 76152369 |
| Ousmane SAMASSEKOU | DREF- Direction Régionale des Eaux et Forêts- de Mopti | ousamassekou@yahoo.fr | 76010848 |
| Amadou NIARE | DRPSIAP- Direction Régionale de la Planification, de la Statistique, de l'Informatique, et de l'Aménagement du Territoire et de la Population - de Mopti | peleniare@yahoo.fr | 73451213 |
| Asaph Kourouba DEMBELE | chef de projet AOPP, Ségou | asaph_dembele@yahoo.fr | 76146372 |
| Aly BOCOUM | GRN/changements climatiques,NEF | abocoum@neareast.org | 76320673 |
| Kapoury SANOGO | PhDClimate change and Biodiversity | kapoury2012@gmail.com | 91261799 |
| Dr Lanceny DIALLO | Agro Économiste, Chercheur, Segou | dsfmali07pointafric@gmail.com | 71876419 |
| Aissata Diodo DIA | BIT Bureau International du Travail | dia-diodo@ilo.org | 76028544 |
| Hasane KAYA | SNV Organisation Néerlandaise de Développement | helkayah@yahoo.fr | 79046907 |
| Siaka COULIBALY | ONG AMEDD- Association Malienne d'Eveil au Développement Durable | siiakacoul64@yahoo.fr | 76055917 |
| Hamadoun TAMBOURA | SWISS CONTACT | tamb125@yahoo.fr | 79113228 |
| Makono COULIBALY | Projet FIER | makono27@gmail.com | 66 76 27 23 70 77 50 21 |
| Manda SISSOKO | FIDA- Fonds International pour le Développement Agricole | m.sissoko@ifad.org | |

| | | | |
|---------------------------------|--|--|----------------------------------|
| Lamine DIASSANA | Coordinateur National Projet FIER | diassanal75@gmail.com | 76 22 24 81 60 38 95 47 |
| Kadia BABY | Projet FIER | kadiababy@yahoo.fr | 20240804 |
| Dr. Suwadu SAKHO- JIMBIRA | FIDA- Fonds International pour le D?veloppement Agricole | suwadu.jimbira@ifad.org | |
| Amath PATHE SENE | FIDA- Fonds International pour le D?veloppement Agricole | amath.sene@ifad.org | |
| Amadou BAH | Projet FIER | ahmadou.bah@gmail.com | 79075708 63366221 |
| Harouna KONE | Planificateur, EX DG INSTAT- Institut National de la Statistique | harounkone@yahoo.fr | 76013846 |
| Allaye BOCOUM | Gestionnaire de projet | allayeabary@gmail.com | 76123619 |
| Ibrahim KONE | Sociologue | wedcom.mali@gmail.com | 78183013 |
| Karamoko SOGORE | CACGODU | karamokosogore40@gmail.com | 90148356 66974382 |
| Miriam TANGARA | AEDD | mariamtangara@yahoo.fr | 76732412 |
| Ousmane KOUMA | Ktechnology | ousmane-kouma@yahoo.fr | 79415364 |
| Bintou Foun? SISSOKO | Groupement Kankele | | 71 15 85 22 |
| Djeneba Djir? | Groupement Benkadi 2 | | 79 63 25 62 |
| Sitan Togola | Groupement Dj?kafo | | 71 18 43 50 |
| Goundo Traor? | Groupement Ni?ta | | 70 82 63 22 |
| | | | |

Table 4: Potential Project stakeholders identified during the PIF design and to be involved in the PPG

| Stakeholders Agencies | Roles in the Role in Project |
|---|---|
| Government | |
| Ministry of Foreign Affairs | Signature of cooperation agreements and conventions |
| Cabinet of the Ministry of the Environment, Sanitation and Sustainable Development (MEADD) | Will be responsible for the supervision and implementation of the project and ensure coordination across ministries and sectoral agencies. Will chair the meetings of the national Project Steering Committee. The COVID-19 pandemic is to be integrated into the ministry's future programmes or response plan. |
| Ministries of Agriculture, Decentralization, Civil Protection, Fisheries, Animal Production and Industries, Women, Children and Families, Reconciliation and Youth | Will assume the function of ensuring coherence of sectoral policies within the project and perform national joint supervision duties once every quarter. |
| Environment and Sustainable Development Agency (ESDA or AEDD for its acronym in French) | As the National Project Director, it will take the lead in the development and implementation of the project at the project sites, as well as the monitoring and evaluation of all activities in accordance with PRODOC. The assessment of its institutional, technical, and managerial capacities confirms that it has the ability to coordinate such a large and diverse project. With regard to the analysis and the strategic position, ESDA benefits from a strong anchoring for the implementation of this project because it constitutes the real niche of this project in terms of steering, monitoring, and evaluating. The involvement of the ESDA GEF Focal Point in this phase of the project sufficiently demonstrates its engagement with and commitment to the project. As the National Project Director, it will take the lead in the development and implementation of the project at the project sites, as well as the monitoring and evaluation of all activities in accordance with PRODOC. The assessment of its institutional, technical and managerial capacities confirms that it has the ability to coordinate such a large and diverse project. |
| National Directorate of Water and Forests (NDWF) | Will assume the development and monitoring of sectoral dimensions within its remit, which includes the implementation of forest and wildlife policy. |
| National Directorates for Animal Production and Industries, Fisheries, Civil Protection, and Social Cohesion and the General Directorate of Territorial Communities | Responsible for monitoring the application and integration of sectoral policies related to the axes of the project; integrates the dimensions of climate security, SLM and conflicts in the PDESCs of the selected communities, circles and communes. |

| | |
|--|---|
| GEF Operational Focal Point | Coordination and implementation of GEF projects in Mali; a key participant in the formulation, approval and monitoring of project implementation; member of the technical committee and the national project steering committee. Acts as an interface between the state, GEF, UNDP and IFAD |
| Planning and Statistics Unit of the Rural Development Sector (CPS/SDR) | Holds primary responsibility for the planning, use and management of natural resources; performs strategic policy analysis and coordinates the identification and formulation of sector projects and programmes; responsible for capacity-building and coordination of producer training. |
| Focal point for combating desertification, UNCCD | Contribute to the development and implementation of the project, as well as the monitoring of the implementation of land degradation management and NDT standards. |
| Focal point on climate change | Contribute to information and advocacy campaigns on key project issues and CDN. |
| CREDD and ODD focal point | Implementation of SDG data and related indicators and reporting mechanisms. |
| Mali Meteorology | Provide hydrometeorological data and forecasts and monitoring of the early warning system (EWS). |
| Biodiversity Focal Point | Implementation and monitoring of agreements and mechanism of activities implementation by AESS and the MEADD |
| CPS/SEUDDE MEADD Cell Director | Will be responsible for monitoring and evaluating the project; provide advice on the collection and application of knowledge and lessons learned; set up a database for the implementation of the project. |
| FEM micro-programme focal point | Provide micro-funding to NGO partners working on environmental and climate conservation (for example, projects implemented by PJUD). FEM is accredited with the Adaptation Fund and the GCF and will facilitate the application of SLM and SFM mechanisms at project sites. |
| National Geographic Institute (NGI) | Map project sites, soils and vegetation; will be responsible for the implementation of the Geographic Information System for Monitoring Agro-ecological Impacts software; responsible for training ministry officials in the collection, processing and analysis of data. |
| APCAM DLCA | Provide technical advice for the adoption of SLM measures by agricultural producers and the monitoring of inputs provided by CSOs; supervision and structuring of CBOs |
| National Directorate of Civil Protection | Monitoring of climate risk prevention and mitigation measures. |
| National Directorate for the Consolidation of Peace | Monitoring of climate-related conflict prevention and peacebuilding measures and the adoption of mitigation measures. |

| | |
|--|--|
| National Directorate of Regional Planning (NDRP) | Provide guidance on the implementation of capacity-building and training for beneficiary communities and technical services for mainstreaming climate security, SLM and conflict resolution into community policies, programmes and PDESCs. |
| Decentralized organizations at the local level | |
| ADR, Regional and District Councils and municipalities of project intervention circles | Responsible for local planning and the integration of project dimensions into development programmes. |
| Traditional associations for the management of transhumance areas and the environment selected communities; associations and groups of women and traditional leaders | Contribute to building producers and natural resource users' capacities to use conflict management tools, from convention to NRM. Collect royalties on animals that graze in the drinking areas. The project will strengthen their management capacity and the funds will be reallocated to the regeneration of S?gou HVHC species and other species favoured by animals. |
| Technical services of agriculture, livestock, water and forests, and fisheries of the selected circles | Will be involved in capacity-building for producers; monitoring; popularization and dissemination of good practices on climate security, SLM and peace; capacity building of professional actors and conflict management committees; monitoring of the implementation of SLM, CES and NRM measures in their localities. |
| Prefects of the target sites | Associated with the choice of intervention communities and will play a key role in conflict resolution and local development programmes at local levels; will oversee the results of the project in their respective areas through CLOCSAD and CCOCSAD meetings. |
| Regional and local associations and network of GDTE providers | |
| Fisherfolk cooperatives Market gardeners cooperatives Dairy cooperatives Agricultural cooperatives Cattle sector | Provide the interface between producers and actors involved in processing and marketing local products during the different stages of the project; structuring of cooperative members in local committee; dissemination and promotion of good SLM, peace building and climate security practices. |
| Free radios of target areas | Disseminate key messages on climate security, SLM and conflict in local languages; launch radio campaigns; organize debates on the key issues in national languages; establish partnerships with media organizations and local radios for project-related media campaigns and advertising of events and protocols on collaboration. These bodies will spearhead of the project's communication strategy. |
| Agricultural advisory centres and network of service providers operating in the area | Provide quality local services to producers in the target municipalities and during training for producers; development of promising sectors. |

| | |
|---|---|
| <p>Coordination of young people and women</p> <p>Displaced person's associations</p> <p>Indigenous population</p> | <p>Due to their mobilization capacity, involvement and support in projects and their knowledge of nature, women's associations and organizations shall participate in the promotion of good practices, especially in relation to climate mitigation and adaptation. They should be one of the main agents of development for this project. Lessons learned in relation to women's involvement in the promotion of good practices will be documented and made available by the PAPAM project, the results of which will be noted</p> <p>Unite groups of women, young people and displaced persons in microfinance institutions and strengthen the capacity of these umbrella organizations to submit business plans and obtain the necessary funding. With the return of displaced people, land management will be difficult, especially in relation to peaceful coexistence in conflict spaces.</p> |
| <p>Universities and research institutes</p> | |
| <p>University of Bamako</p> <p>Regional Centre for Agronomic Research of Mopti (RCAR) Cinzana</p> | <p>Analysis of the situation, search for innovative solutions, and measures to restore the land to water and forest; monitoring of SLM, GDF indicators and standards; research on improved and adapted seeds.</p> |
| <p>Institute of Rural Economy (IRE) of Niono</p> | <p>Provide project support and produce resistant seeds for distribution to producer farmers; will also conduct situation analysis; seek innovative solutions and measures to restore land, water and forests; monitor SLM, SFM indicators and standards.</p> |
| <p>Associations and agencies of producers/marketing /banking structures</p> | |
| <p>National Agency for the Promotion of Employment (NAPE) of Segou</p> | <p>Will be key partners for the development of markets for agricultural and forest-friendly products in Benin and the region.</p> |
| <p>Regional Investment Promotion Agency</p> | <p>Help facilitate any export of agricultural products; help facilitate market access.</p> |
| <p>National Bank for Agricultural Development (NBAD)</p> <p>Savings and Credit Bank</p> | <p>Support innovative projects; support the microfinance sector in order to benefit from loans in the form of Gramen Bank (loan of fishing gear, agricultural inputs, cattle and sheep fattening, and income-generating activities (IGA)).</p> |
| <p>National Centre for the Promotion of Volunteering (NCPV)</p> | <p>Mobilize the body of national volunteers at site level on issues of mediation around peace, climate security, and sustainable land management.</p> |
| <p>Civil Society Organizations (CSOs)</p> | |

| | |
|---------|--|
| AMAPROS | ? Malian Association for the Promotion of the Sahel Malian |
| AMEDD | Association of Awakening to Sustainable Development |
| AMASSA | The Malian Association for Food Security and Sovereignty |
| GEDEFOR | Decentralized Forest Management Program |
| USCET | The Union of Cooperatives Societes of Tamani Breeders |

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).

1. According to the Gender Inequality Index (GII), Mali is one of the ten African countries with the highest gender disparities. With a GII value of 0.676, Mali ranked 158th out of 160 countries in 2018. The GII has decreased significantly over the period 2000-2010, but no significant improvement has been noted since 2010. Female parliamentary representation has fallen from 18 women between 1997 and 2002 to 15 women from 2002 to 2007 out of a total of 147 deputies. In addition, women represent less than 2% of mayors and less than 9% of municipal councillors. The low visibility of women at the level of local governance, the judiciary, and also at the head of civil society organizations is a visible phenomenon in Mali.

2. There are inequalities between men and women in the labour market. In Mali, four out of ten women (40.1%) aged 15-64 were employed in 2017, just over half (51.2%) of women aged 15-24 and 47.7% of women aged 15-34 were also employed. Working women are concentrated in the Agriculture, Livestock, Hunting and support activities branch of activities. However, the percentage of active women employed in this branch differs according to age, with 99.0% for 15-24 year olds, 84.3% for 15-34 year olds and 74.4% for 15-64 year olds. In addition, women make up 50% of total employment in the food system, but they dominate in the non-agricultural segments accounting for 51% of catering staff, 62% in food processing and 66% in marketing. This preponderance of women in the non-agricultural segments is confirmed by the differences in income compared to men. Households headed by women earn on average 2,233,467 FCFA per year from non-agricultural labour, compared to 1,383,488 FCFA for households headed by men. There are regional disparities in the contribution of women to economic activities. The regions of Timbuktu and Gao have the lowest percentages of employed women in employment, compared to Sikasso, Koulikoro, Mopti and to a lesser extent S?gou.

3. Women are under-represented in the formal private sector and the public sector, unlike the informal sector, which indicates a low level of qualification and a certain precariousness of their jobs. Gender inequalities are also illustrated by the differences in pay between men and women. According to the results of the above-mentioned regional survey, the average monthly income of women (40,387 FCFA) is 2.5 times lower than that of men (103,274 FCFA). In addition, the

comparison of the minimum wage shows that more than three-quarters of employed women (76.4%) are paid below the minimum minimum wage, against a little more than half for men (51.2%). The same is true for the informal sector where women have a lower average monthly income compared to men, with 21,925 FCFA and 53,203 FCFA respectively. These inequalities between men and women also prevail for unemployment and underutilization of the labor force, with women always being the most affected. Due to the presence of women in the informal sector, but also in catering and trade activities, they have been particularly affected by the COVID-19 crisis. One-on-one interviews conducted by UN Women among women in the economic sector in Mali indicate that almost all of the women interviewed lost their income due to the COVID-19 pandemic. Indeed, 20% of women had to stop their economic activities because they could no longer process raw materials, export, do activities that require regrouping such as dyeing.

4. Gender-based violence (GBV) is a major risk for women and girls in Mali. According to EDSM-VI, 13% of women aged 15-49 have experienced sexual violence. Female genital mutilation / excision is one of the most widespread forms of sex discrimination in Mali, with more than eight in ten women affected according to the EDSM-VI. The rate has increased over the past five years, from 83% (MICS, 2015) to 89% (EDSM-VI, 2019), and for three-quarters of circumcised women, the practice was done before the age of 14 years old. Segou is one of the regions with high prevalence (92%), in addition to Koulikoro and Sikasso (96%), Kayes (95%), and the district of Bamako (91%).

5. Furthermore, discrimination exist in the distribution of domestic tasks between girls and boys, especially in rural areas. Young girls spend 0.6 hours a day fetching water and 0.2 hours fetching wood, compared to 0.1 hours for young boys. In addition, women are at a disadvantage when it comes to credit and other financial services. Despite the improvement in the number of women over 15 with a bank or mobile account (6.91% in 2011 to 25.71% in 2017), there is still a gap between men and women of 20 percentage points. In the area of agricultural financing, it is important to stress that women with access to seasonal credits make less than 5%. Added to this is their poor access to other productive resources such as land to develop certain crops such as rice. In 2017 for example, women owners of rice plots were 14.71% in the Office riz Mopti zone and 8% in the Office Riz S?gou zone.

6. Given these gender inequalities, the project will contribute to ensuring that women access to capacities, resources for production, markets, and that their voices are heard and taken into account within the decision-making institutions. Therefore, gender-responsive measures will be adopted for activities related to capacity building, as well as the community-based adaptation activities defined to increase better access to finance and credit, among others, throughout the value chains. This will be achieved by setting quotas, and specific indicators under each component to involve women into the project activities and outputs. These are : under component 1, the number of women that have been trained and participated to decision making processes ii) under component 2 the number of women that adopt integrated approach to climate change adaptation and community-based natural resource management iii) the number of women that have access to systems, tools and instruments required to develop the resilience of vulnerable communities to climate change iv) the number of women with access to knowledge and results from the project

7. During the PIF design, the mission met the women's cooperatives for market gardening and rice cultivation, women Fisher folk cooperatives and the women cattle cooperatives to discuss their needs and involvement in this project. During the PPG phase, the role and place of women in this project through their associations and groups will be further defined. Women's capacities in advocacy and political participation will be strengthened to enable them to lobby villages and communal authorities to obtain land to implement sustainable land and water management practice. With regards to Monitoring and Evaluation, a gender-responsive strategy will be developed in order to ensure that gender issues are well mainstreaming throughout the project process. A gender action plan will be proposed during the PPG phase, informed by stakeholders' consultations, and a budget should be made available for gender related actions linked to each of the proposed components and quotas, indicators proposed in the logical framework. An important aspect is to make sure that all materials and tools developed integrate adequately gender considerations, in connection with climate change adaptation. In line with GEF's policy on gender mainstreaming and its Gender Action Plan, a results-oriented and gender-sensitive framework will be developed during the design phase of the PPG. In terms of partners' institutions, it will be important to identify ministries, civil society organizations, development partners among others that are working on gender related issues.

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.

1. Private sector organizations will be actively involved due to the strategic nature of their activities in relation to the priorities of this project particularly in the FFS and all adaptation related activities. A mapping of co-financiers shows that parallel private investments with full involvement of the private sector will be secured through Piveli and CNPV (National centre for promoting volunteering), ANPE (National Agency for the promotion of Entrepreneurship). The institutions support the emergence of new agripreneurs, MSMEs (input and equipment dealers, processors, transporters, wholesalers,

retailers) and their linkages with markets, and private investors including green financing from both Agricultural Banks of Mali and Microfinance Institutions which IFAD is partnering with under the Project INCLUSIF and the inclusive green finance program of the GCF. Under the Public, Private, Producers Partnership (4 P) model of IFAD, private sector engagement will be promoted on along the agriculture, forestry and fisheries value chains interested in providing climate resilient seeds, technologies, services and good that will contribute to the overall project goal. However, very often, private sector actors are not very aware of the problems of climate risk, which are not well integrated in their investments. The project is a key opportunity to build the capacities of private sector actors and raise their awareness on the fight against climate change. Private sector actors has a comparative advantage to facilitate market access for women and youth by ensuring that their supply in terms of agricultural products and packaging is well tailored to consumers demand. During the PPG phase, the analysis and plan for awareness raising and engagement of private sector stakeholders, including small holder farmers to integrate climate risk and climate resilience. To support activities related to use of climate-resilient crop varieties; ii) reduced tillage; iii) alternatives to chemical fertilisers (use of compost) and pesticides (biological control, intercropping); iv) fascines; v) zai; vi) the use of leguminous plants; vii) crop rotation, The PPG phase will lead to an assessment of all relevant services providers and financial institutions to identify the most suitable to engage.

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)

1. While developing the full project proposal, a comprehensive and detailed risk management framework will be proposed. During project implementation, the risk management measures of the project will be evaluated. Overall, the project is considered as moderate risk with all measures put in place by IFAD in response to the COVID-19. The potential financial and other risks of the project are as follows:

Table 5: Project risks

| Risk | Indicative Management Strategy |
|--|--|
| <p>Limited capacity of national and local authorities and institutions and the staff of centralized and decentralized institutions to support the development of an integrated approach to resilience development and climate change (IARDCC), in collaboration with MERIT and, through the adoption of CSA and sustainable natural resource management practices and special financial mechanisms (<i>Medium</i>)</p> | <p>The project aims to strengthen the capacities of national and local authorities, institutions and staff through training. It will invest, where possible in collaboration with implementing partners, in awareness-raising campaigns, local capacity-building and the introduction of alternative technologies and production methods. The project will work with other active projects and programmes in the target regions on a number of sustainable livelihood and resilience development activities.</p> |

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| <p>Lack of political will among regional and local authorities to create/adjust/adopt an IARDCC and planning tools (<i>Low</i>)</p> | <p>The project will involve key local and regional political players to ensure smallholder farmers have access to the opportunities and benefits created by mainstreaming climate change adaptation into local decision-making. These players will receive training, as a means to increase their interest in the project and bring them on board to secure financial and technical support for the project where needed and necessary.</p> |
| <p>Little interest of vulnerable rural communities in target areas in adopting IARDCC, sustainable climate resilient tools and measures (<i>Low</i>)</p> | <p>A participatory approach, including field visits, interviews and consultations with local communities, will be used to identify needs, assess priorities and tailor the project to the local context.</p> |
| <p>Inadequate land and forest regulations could discourage the adoption of an IARDCC and CSA practices (<i>Medium</i>)</p> | <p>The project will support the development of Land Use Plans and the adjustment of Local Development Plans that will regulate access to and use of natural resources. In rural areas of Mali, customary laws will compensate for the absence of appropriate land and forest regulations. A specific advocacy campaign will be conducted in those communities to free usable and arable lands for women and marginalized group in the context of this project. Also, the experience and knowledge generated from this ?negotiated to be? application could contribute to the strengthening of the national regulatory framework, which is needed to promote sustainable, long-term land use planning at the community level. Finally, the project will collaborate with other initiatives focusing on policy reform.</p> |
| <p>As a least developed country and one of the ten poorest countries in the world, Mali has very limited financial resources. Combined with political insecurity and lack of infrastructure, this increases overall project delivery costs and poses additional challenges. (<i>High</i>)</p> | <p>The project will need to allocate sufficient funds to the project?s activities and management to ensure that these challenges will be addressed and not jeopardize its overall success.</p> |

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| <p>Climate risks: There is a risk of losses of assets and produce because of extreme climate events across the central region in Mali. This may affect the economic return obtained from investments in CSA, which could, in turn, reduce the capacity of borrowers to pay off their debt, discouraging them from future uptake of IACC and investing in CSA practices. It could also hinder the development of climate finance and reduce the CC adaptation capacity of smallholder farming communities.</p> | <p>In coordination with the MERIT, INCLUSIF and FIER projects, capacity-building activities planned under outputs 2.3 and 3.1, will provide training on how to manage extreme climate change events and their impacts on farming activities. Furthermore, the project will ensure that credit provided to the communities includes climate insurances (or payment protection insurance).</p> |
| <p>Fiduciary risks: There is a risk that funds will not be used for the intended purposes; and/or are not properly accounted for. This may be due to a variety of factors, including lack of capacity, competency or knowledge; bureaucratic inefficiency, conflict and/or corruption.</p> | <p>A financial expert will develop a fiduciary risk assessment and mitigation plan during the project preparation phase. The mitigation plan will inform capacity-building activities during project implementation, which will be supported by ongoing performance monitoring.</p> |
| <p>Covid-19 outbreak</p> | <p>In 2020, the COVID-19 pandemic amplified job losses in both urban and rural areas. In rural areas, it is the primary sector which employs more than 80% of the population that has been severely affected due to the combined effects of climate change, armed violence, and persistent insecurity. However, the pressure on natural resources has contributed to a gradual deterioration of the natural capital, livelihoods, and food security of their populations. The number of food insecure people in Mali was 4.9 million in 2019. Current statistics in Mali show 7,253 cases of Covid-19, including 4,913 recoveries and 278 deaths. This pandemic will continue to impact the economies and the societies as long as the barrier measures are not respected by the populations at any level. The PIF will work to ensure that its measures are respected and to integrate them into the planning processes and the daily life of Malians.</p> |

COVID-19 Considerations for GEF Projects and Programs

1. **General:** Describe briefly how the pandemic overall is addressed in the project, including associated impacts, risks and opportunities. Projects are required to identify and establish likely impacts and risks from COVID-19, and how they will be dealt with in the context of delivering GEBs and/or climate adaptation and resilience benefits.

2. Current statistics in Mali show 7,253 cases, including 4,913 recoveries and 278 deaths resulting from the COVID-19. This situation led the Government to introduce a wide range of mitigation measures (restriction of movement, closure of borders, closure of schools, bars, events, etc.) to limit its spread. The COVID-19 pandemic has therefore imposed limitation of movement of people and goods within and across countries, which has been hindering food-related logistic services and disrupting entire food supply chains.

3. Key measures were put in place by the government to contain the impact of the COVID. These are COVID -19 emergency response measures and more recently these include the IFAD Rural Stimulus Fund to safeguards both IFAD investments and additional finance mobilized such as this GEF Program.

4. At GEF project level, these are remote design and work and online interactions as well as limited remote data and information access and processing capacities for the design of the PIF, partnership with local governments and IFAD projects at local level to collect all needed information for the design, baselines, indicators, target areas, and coordination with other donors. Specific guidelines for PIF design and implementation have been developed. At the implementation stage, specific measures to safeguards the portfolio are: Trainings on safe labour practices, and transports, access to more protective equipment such as masks and gloves, restrictions on workers on producer's field, use of drones and other digital extension tools for labour and input saving practices, shared mechanization, digital marketing platforms and logistics, sanitary and phyto-sanitary controls among others.

2. **Risk analysis:** Describe further how risks from COVID-19 have been analysed and mitigation strategies incorporated into the design. Project documents are expected to include consideration to the risks that COVID-19 poses for all aspects of project design and eventual implementation.

5. IFAD has developed specific guidelines to support the design of all IFAD projects including GEF-LDCF (PIF, PPG) and at implementation.

6. With regards to mobility and stakeholder engagement, IFAD has developed a design guidelines which recommend virtual consultations wherever the risk of COVID contamination is high. For areas where, the risk is high the remote design is prioritized. IFAD provides digital connection to all stakeholders including indigenous people. Extension agents and local partners are engaged to provide support during the consultation. Additionally, IFAD and governments partners provide mobile phones and airtime to connect during the design of the PIF, PPG and implementation of the project when consultations are needed and mobility is not permitted. Specific agreements will be signed with local NGOs to provide support.

7. Enabling Environment. Key measures put by the government, which support all projects including the GEF project are : (i) Implementation of the health contingency plan prepared in coordination with the WHO and increased health spending (on medicine, equipment, staffing, and treatment centres) to protect against COVID-19; (ii) Expansion of social assistance to the most vulnerable, including expansion of the WB-supported cash-transfer program, and increased support to the disadvantaged (the elderly, disabled and abandoned children); (iii) Protecting small businesses and employment, in particular through salary contributions; (iv) Financial assistance to workers who lost their jobs in both

the formal and informal sectors; (v) Implementation of automatic stabilizers; (vi) Where supply chains are disrupted, the state will procure seeds, feedstock, and other essential inputs to be sold to farmers at market price; (vii) Introduction of a solidarity tax on workers, including public servants, whose salaries are relatively unaffected by the shock. Based on the list of the risks listed above, the overall project risk classification is **medium** as the COVID -19 medium national plan is being deployed at country level

3. **Opportunity analysis:** *Describe further how the project has identified potential opportunities (if any) created by COVID-19 to deliver GEBs and/or climate adaptation and resilience benefits, and contribute toward green recovery and building back better.*

8. The project itself is a response to the COVID -19 crisis and indirectly to future similar diseases which are linked to climate change. The LDCF Project will help national and subnational stakeholders and beneficiaries through IFAD funded project to mainstream climate change into the agro-forestry production systems and management to minimize the negative impacts on ecosystems while enhancing the contribution of ecosystem services to livelihoods of rural communities in Segou. Through the various interventions planned, the project will contribute through the management of forest, land and fisheries to protect and conserve the biodiversity but also build the resilience to climate adaptation and resilience benefits, and contribute toward green recovery and building back better.

Key opportunities that COVID brings to countries:

- ? Adoption of remote and tele-supervision
- ? Knowledge and skills on safe labour practices, and transports
- ? Use of drones and other digital extension tools for labour and input saving practices, shared mechanization.
- ? Discussion of risk sharing mechanism such as insurance including pandemic insurance,
- ? Opportunities to develop digital marketing platforms and logistics, sanitary and phyto-sanitary controls as proposed in the project

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.

1. As stated earlier, this project will be supported by a platform of several ministries and their specific technical services. The Ministry of the Environment, through the Agency for Environment and Sustainable Development (AEDD), will play a coordinating role in the project preparation and implementation phases. AEDD will be the executing agency. The ministries responsible for agriculture, water, and territorial administration, forestry, fishing and pastoral sectors will participate in the implementation of the project's activities through their respective technical services, such as the directorates of decentralization, agriculture, development, fishing, and water resources. Research and

development institutes will accompany the project in different areas of execution. IFAD will provide oversight and quality assurance, as well as ensure functional synergies among the project's implementation partners. IFAD will monitor the implementation of project and manage the identified risks as best as possible.

2. Key institutional actors will be involved in the project implementation through a dynamic partnership. Among them, the Planning and Statistics Unit of the Rural Development Sector (CPS/SDR) is the main government body responsible for the planning, use and management of natural resources in Mali. It performs strategic policy analyses and coordinates the identification and formulation of sector projects and programmes. The CPS/SDR is also responsible for capacity-building and coordinating training activities. Other key government bodies related to natural resource management (in addition to the one in table 4) are:

? The National Directorate of Agriculture (NDA) is responsible for strategic planning and policy formulation, conceptualization and the supervision of work on major projects and programmes on agricultural development;

? The National Directorate on Rural Engineering (NDRE) is in charge of support services for agriculture, particularly extension services and plants protection. It is responsible for the infrastructure conceptualization, and development works supervision in rural projects/ programmes;

? The Institute of Rural Economy (IRE), which is responsible for conducting research in the fields of economics and agriculture;

? The Rural Development Offices, which are online agencies responsible for the development of irrigation projects;

? The Ministry of the Environment, Water and Sanitation supervises the National Directorate of Sanitation, Pollution and Nuisance Control (NDSPNC);

? The Environment and Sustainable Development Agency (AEDD for its acronym in French), which is in charge of monitoring and coordinating the implementation of the National Policy for the Protection of the Environment and the promotion of sustainable development;

? The National Directorate of Animal Production and Industries (NDAPI);

? Agencies linked to the Ministry of Energy and Water (AMADER, ANADEB, AER);

? The General Directorate of Territorial Communities.

3. The project will work with agronomic research institutions at the local and regional level to promote new varieties of seeds and plants (horticulture, trees and shrubs) that are more resilient to climatic shocks. Improved varieties will be developed by researchers and the results will be tested in the field by farmers. A fair will be organized to bring together researchers, seed producers and users of improved seeds each year. The perceptible impact will be the large-scale dissemination of the work of these different partnerships, the development and domestication of rare seeds and of species with high commercial value obtained through this research and technological innovation.

4. As part of its programme management and efforts to ensure interventions are effective and efficient, IFAD will ensure that this project is implemented in coordination with the MERIT, FIER and INCLUSIF projects. Pooling efforts and concentrating interventions in the same geographical areas help to multiply and strengthen the project's impacts. This will contribute to the stabilization of the target regions, which are subject to all forms of vulnerabilities due to the migratory flows of populations from the north and part of central Mali.

5. This PIF/GEF/IFAD project will be placed under the supervision of the Ministry of Environment, Sanitation and Sustainable Development. The national directorate of the project will be based in the Environment and Sustainable Development Agency (AEDD) and will collaborate closely with: i) the Ministry of Finance, which will act as the representative of the Borrower; ii) the Ministry of Agriculture as a key partner in the implementation of this project; iii) the Project Steering Committee (PSC), which is to provide guidance on intervention strategies, approve Work Programmes and Annual Budget (WPAB) and monitor the project. The PSC will be created by the MEADD.

6. A National Coordination Unit (NCU) of the PIF/GEF project will be created by decree, which will define the administrative and management bodies. The NCU will be responsible for managing resources, coordinating activities and monitoring operators and service providers through management mechanisms that will be put in place. Regional coordination will be established to monitor the implementation of activities in the field.

7. The PSC will be chaired by the MEADD or its representative, and the secretariat will be provided by the NCU. In addition to representative of the Ministry of Finance, the Coordination and Monitoring Unit of Public Debt Projects will also be a member of the PSC to regularly take part in the various guidance, decisions and readjustments necessary to achieve the project's objectives. Technical committees will be set up at the national and regional levels to manage operational issues and support the PSC. These committees will bring together all the actors responsible for implementation and ensure synergies and the harmonization of approaches.

8. A participatory approach will be adopted, by putting all project stakeholders at the heart of the intervention to ensure mutual accountability among them. It will be supported by a "do-it-yourself" approach based on multi-actor partnerships with service providers who have proven expertise in the issues to be addressed, are present in the target areas and offer added value. Partnership opportunities will be explored with international NGOs working in Mali or the sub-region such as IUCN, ICRAF, and the International Institute for Livestock Research (IILR), USAID and GERES.

9. With regards to Monitoring and Evaluation, implementation of the project's activities will follow the GEF and IFAD policies and procedures as well as IFAD Covid-19 Guide to Adaptive Management and Project Monitoring and Evaluation. This will help ensure the high level of implementation performance and quality of the project's achievements. The project's activities will be carried out under the tutelage of the environment officer and will be monitored, according to the evaluation procedures of IFAD and the GEF.

Table 6: Mapping of development partners in the Segou Region

| Projects/Programmes | Services Provided |
|------------------------|--|
| Swisscontact (PAFP IV) | Organization of training for CRS staff |
| | Funding of CRGP sessions |

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| | Funding of continuing education projects |
| | Funding of monitoring and evaluation missions |
| | Support for the functioning of the service in charge of vocational training (financial and material, etc.) |
| | Support for the development of planning tools (SDRFPTE, communications plan) |
| | Support for the establishment of a regional financing mechanism for vocational training |
| | Capacity-building for training facilitators |
| Support Project for the Political Framework of Crisis Management in the Central Mali Regions | capacity-building, institutional support |
| PSIRC | Security and development |
| LuxDev | Organization of training for CRS staff |
| | Funding of CRGP sessions |
| | Funding of continuing education projects |
| WORLD VISION | Education, conflict prevention and management |
| ANICT | Support for local authorities, creation of basic social infrastructure and services; training for elected officials |
| ALPHALOG | Funding for training and apprenticeship projects at the youth site; Funding of monitoring and evaluation missions; Support for the functioning of the service in charge of vocational training (financial and material, etc.) |
| Think Peace | Orientation on the peacebuilding programme for key actors (workshops); capacity building of community leaders on conflict transformation and the fight against violent extremism |
| Danish Demining Group (DDG) | Border management and security/reduction of armed violence |
| IOM | Sanitary equipment, capacity-building for stakeholders. Social cohesion/socio-professional reintegration. Assistance in the fields of health, education and children's rights, distribution of food to the poor; humanitarian aid for refugees and displaced persons |
| APECM | Support for the development of planning tools (SDRFT, communication plan); construction and equipment of CFP/IFP; development of training programmes |
| INCLUSIF Project | Development of sectors ; priority carriers of the region; the financial inclusion of small producers and agro-food SMEs; institutional support for the microfinance sector, climate change, the environment, gender, knowledge management and communications |
| Save The Children | Conflict prevention and management; social cohesion |
| ASDAP | Sexual and reproductive health |
| AMAPROS | Health, education and children's rights; establishment of civil status documents for young people; creation of women's associations related to agriculture and literacy |
| ASDAF | Family Home Development Association |

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| UCSTB | Union of Cooperative Societies of TAMANI Breeders, |
| TONUS | Climate change, food security |
| PADRE/ GIZ | Training of trainers from field/school centres and workshops; education, hydraulics, health and sanitation; construction of infrastructure |
| AMASSA | Food safety |
| GEDEFOR | Climate change, reforestation, promising sectors |
| AMEDD | Climate change, decentralization |
| ALPHALOG | Intensification of small businesses, livestock, agriculture; market gardening; decentralization; the environment; improvement of the living environment, capacity-building for associations, sanitation |
| CARD | Rice production |
| UNDP | Social cohesion, sustainable development |
| MINUSMA | Assistance through quick impact projects in the areas of basic social services, peace building |
| UNHCR | Support for refugees and displaced persons |
| EDUCO | Education |
| GERES | Climate change |
| MERIT/IFAD | The MERIT Project ? Energy and Agriculture nexus |
| FIER/IFAD | Climate change; vocational training, integration of women and young people |
| INCLUSIF/IFAD | Agricultural sector, AGR, training of POs, SMEs, SFD |

10. A study will be conducted during the PPG phase to assess the capabilities of key project institutions at different levels to ensure that the process is effectively implemented. Adaptation is a new field of knowledge that involves increased awareness in order to ensure full ownership of the subject by the beneficiaries. The project will implement an integrated Programme with various stakeholders to guarantee new farming practices as well as agro-ecological adaptation measures and policies. In addition, an emphasis will be placed on the enhancement of endogenous know-hows that promote technical and innovative solutions adapted to local contexts.

7. Consistency with National Priorities

Is the Project consistent with the National Strategies and plans or reports and assesments 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

1. The activities of this LCDF project are fully in line with national development priorities. They also have close and complementary links with national development plans, namely CNI (2000), SNC (2011), TNC (2018), NPCC (2011), PANA (2009), and CDN (2015), PNA/PNCC (2011), EBT (2018), whose components are on the "diversification of the economy", the fight against poverty and food insecurity through the development of the agriculture and agribusiness. Particularly for the NDC (CDN in French) and the NAP (PNA in French), the project will significantly contribute to theirs targets. Through the various components, the project will support the NDC measurements related to water management, land management and planning, improved and adapted seeds, capacity strengthening and management of natural resources. The national development plans are based on strong economic

growth, capable of reversing and reducing poverty at both the local and national levels. For the agriculture and water resource management sector on which much of the development of the national economy depends, technical support from development partners and technical capacity building is needed, especially in the implementation of plans at the decentralized level. These programs are also related to Goals 1, 2, 6, 7, 10, 12 and 13 of the SDGs. Mali is also preparing its fourth national communication, whose vulnerability and adaptation studies will once again take into account in the agriculture, water resources and forestry sectors. Reports of the implementation activities of the NDP, and the review of various past and current reports and programmes, show some progress in these key sectors of the national economy. This is particularly true with regard to the objectives that have contributed to improving the living conditions of people living in areas underserved by basic socio-economic infrastructure in order to reduce social inequalities, agricultural diversification, access to minim grid energy and others.

2. Agricultural sector is one of the pillars of Mali's development in terms of its production potential, by integrating climate change upstream and thus contributing to the achievement of the SDGs 1, 2, 6, 7, 10, 12 and 13. The project will be based on programs of development partners, such as the MERIT project of IFAD, in order to give an integrated robust response to water scarcity challenges. In addition, the project will also take into account national strategies and policies, such as the NPCC, PANA, CDNs, the Desertification Action Plan, the National Biodiversity Strategy, the NCs, aiming to strengthen the resilience of ecosystem services in particular those of agriculture and food security. Furthermore, the regions of centre Mali suffering from prolonged drought due to lack of water will benefit from the attention of three or four Key ministries, such as the environment, water, agriculture, and the administration of the territory. These two central regions, with the support of national authorities, will be encouraged at working to establish a framework for climate, food, drought, and integrated management of water and natural resources, as well as degraded and fertile soils.

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.

1. Component 4 of the project focuses on Knowledge Management. It is expected that the best agro-ecological, community-based climate change adaptation and climate risk reduction practices are collected and disseminated in the region and beyond and will contribute to the overall outcome of the project. The strategic approach will consist of: (a) the development of a communication strategy for the project; (b) the organization of awareness campaigns in beneficiary communities; (c) training of journalists on the IACC and the CSA; (d) the creational network of communication established for communication set development; (e) dissemination and knowledge sharing; (f) study trips for exchange; (g) organization of knowledge fairs; (h) the organization of open doors; i) the review of the communication strategy, and (j) the publication of quarterly, annual reports, reviews and evaluations, and the publication of a final report. The production of best practice guides ? CSA-based on various agro-sylvo-aquaculture-pastoral technics ? will be undertaken, as well as on financial and institutional mechanism. At the PPG phase, the Knowledge Management aspects will be strengthened and a plan proposed accordingly.

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/Approva l | MTR | TE |
|------------------------|---------------------------------|-----|----|
| Medium/Moderate | | | |

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.

The Project at PIF stage is assessed as high-risk In terms of climate. The target group is substantially dependent on climate-sensitive natural resources, especially as regards rainfed agricultural plots. Climate variability ? including unexpected dry spells occasioned by unpredictable rainfall and temperature ? can affect the subprograms? impact, sustainability and return on investment. Predictions of future climatic changes suggest that the programme areas will experience fluctuations in temperatures and precipitation due to increased climate variability. To address climate impacts, the PIF includes a set of technologies and climate resilient practices for production and post-harvest processing. The EX-ACT carbon balance analysis will be conducted at PPG stage. In line with IFAD SECAP, The PIF is classified as a category B project, as it is not expected to have significant negative environmental and social impacts. An elaborate SECAP note has been produced under the IFAD baseline investment and provides information on the various environmental and social impacts.

Supporting Documents

Upload available ESS supporting documents.

Title

Submitted

Title

Submitted

| |
|--------------------------------------|
| IFAD_PIF_Mali_SECAP IFAD MERIT Annex |
|--------------------------------------|

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

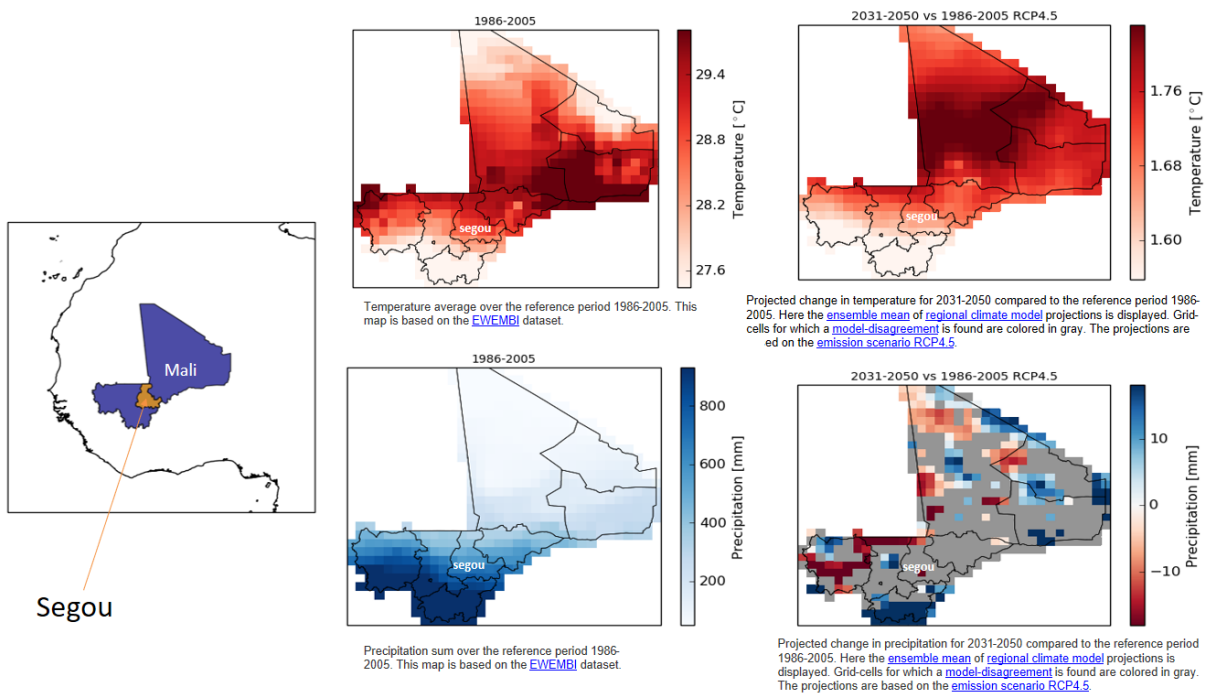
A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S): (Please attach the Operational Focal Point endorsement letter with this template).

| Name | Position | Ministry | Date |
|-----------------------|-----------------------|---|-------------|
| Mr Amidou Goita | GEF Focal Point | Agency of Environment and Sustainable Development, Ministry of Environment, Sanitation and Sustainable Development. | 5/28/2021 |
| | | Climate change adaptation results framework | 6/17/2021 |
| | | PIF MSP Mali document clean | 6/18/2021 |

ANNEX A: Project Map and Geographic Coordinates

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

| Site | geonames.org ID | Brief description |
|-------|----------------------|--|
| SEGOU | 13?25?36?N/6?15?34?W | Circles of S?gou, Niono, Bla, San, Macina, Baroueli and Tominian |
| | | 40 sites |



• Source: Climate Analytics, 2021