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

Sector
AFOLU

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

No Contribution 0

Climate Change Adaptation

Principal Objective 2

Biodiversity

No Contribution 0

Land Degradation

No Contribution 0

Submission Date

11/30/2022

Expected Implementation Start

2/1/2023

Expected Completion Date

1/31/2027

Duration

48In Months

Agency Fee($)

168,766.00

A. FOCAL/NON-FOCAL AREA ELEMENTS

Objectives/Programs	Focal Area Outcomes	Trust Fund	GEF Amount($)	Co-Fin Amount($)
CCA-1	Reduce vulnerability and increase resilience through innovation and technology transfer for climate change adaptation	LDCF	1,776,484.00	31,170,000.00
		Total Project Cost($)	**1,776,484.00**	**31,170,000.00**

B. 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	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
Component 1: Institutional capacity building for enhancing resilience to climate change of rural communities	Technical Assistance	**1.1:** 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. <u>Indicators and targets</u>: (i) *500 people trained in integration of CC resilience in land-use planning (50 % women)* ii) *2 communal plans that mainstream CC* *iii) 1 comprehensive assessment conducted (impact, vulnerability and adaptation assessments, and socio-economic analysis) to support CC mainstreaming into*	**1.1.1:** 500 staff from technical institutions are trained on the use of the Institutional Adaptation to Climate Change guide (IACC) (at least 50% women). **1.1.2**: 2 Communal and land use plans that mainstreamed CC are developed for the target regions. **1.1.3**: 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) .	LDCF	295,000.00	17,533,125.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
Component 2: Development of integrated approaches to climate change adaptation and community-based natural resource management	Technical Assistance	2.1: 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. <u>Indicators and targets</u>: *i) 800 ha of land under climate resilient practices* *ii) 1,500 beneficiaries climate resilient agricultural production systems* *iii) 2,500 ha on local species with high commercial and medicinal value domesticated, benefiting 3,000 people (50% being women).* *iv) 1,800 ha under concrete*	2.1.1:800 ha under climate resilient species, essences and seeds produced and distributed to 1,500 beneficiaries to support the climate resilient agricultural production systems by sustainably intensifying production 2.1.2: Local species with high commercial and medicinal value domesticated on 2,500 ha by 1,500 direct beneficiaries and 10,000 indirect beneficiaries using agro-ecological horticultural practices to sustainably increase food security (at least 50% women). 2.1.3: Concrete agro-ecological measures to address the effects of drought, desertification and climate change are promoted on 1,800 ha by 1,000 farmers	LDCF	600,000.00	4,383,281.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
Component 3: Acquisition of systems, tools and instruments required to develop the resilience of vulnerable communities to climate change	Technical Assistance	3.1: 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. <u>Indicators and targets</u>: *(i) 2,500 farmers (50% women-headed) strengthened with organizational capacities to address issues related to climate impacts in value chain development.* *ii) 2,500 household beneficiaries (50% women-headed) adopting technical tools and integrated approaches* *iii) 10 national institutions strengthened to produce and*	**3.1.1:** Organizational capacities of 2,000 household beneficiaries of farmers (at least 50% women and 30% youth) from 50 communities are strengthened to address issues related to climate impacts on value chains development. **3.1.2:** Appropriate technical tools and integrated approaches to climate change adaptation are adopted by 2,500 households (at least 50% women and 30% youth) household beneficiaries in 50 communities. **3.1.3:** Capacities of 10 national institutions are strengthened to produce and disseminate real-time climatological, and hydro-meteorological information	LDCF	550,000.00	4,383,281.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
Component 4: Knowledge management, monitoring and evaluation, and dissemination of results	Investment	**4.1:** Best agro-ecological, community-based climate change adaptation and climate risk reduction practices are collected, and disseminated in the region and beyond Indicators and targets: <u>Indicators and targets</u>: i) *2,500 household beneficiaries accessing endogenous and exogenous knowledge on best available technologies and climate resilient practices for production and post-harvest processing.* ii) *1,800 people captured in the exit strategy.* *iii) 100 journalists, 200*	**4.1.1:** 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 2,500 direct household beneficiaries for adoption (at least 50% women and 30% youth). **4.1.2**: The results of the project are captured in an exit strategy for scaling with 1,800 direct household beneficiaries and 3,000 indirect household beneficiaries (at least 50% women-headed and 30% youth). **4.1.3**: 100 journalist and 200 community leaders, 1,000 lead farmers trained on IACC approaches	LDCF	210,000.00	1,753,313.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
				Sub Total ($)	**1,655,000.00**	**28,053,000.00**
Project Management Cost (PMC)						
				LDCF	121,484.00	3,117,000.00
				Sub Total($)	**121,484.00**	**3,117,000.00**
				Total Project Cost($)	**1,776,484.00**	**31,170,000.00**

Please provide justification

C. 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($)
GEF Agency	International Fund for Agricultural Development (IFAD) MERIT	Grant	Investment mobilized	29,970,000.00
Beneficiaries	Regions of Segou and Mopti, 10 Circles, including 3 Regions of Mopti	In-kind	Recurrent expenditures	200,000.00
Donor Agency	Green Climate Fund (GCF)	Grant	Investment mobilized	1,000,000.00
			Total Co-Financing($)	**31,170,000.00**

Describe how any "Investment Mobilized" was identified

The co-financing resources in terms of investment mobilised (that excludes recurrent expenditures) were identified through consultations with various project?s implementation partners as follows: 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 bio-digester 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. 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. 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($)
IFAD	LDCF	Mali	Climate Change	NA	1,776,484	168,766	1,945,250.00
			Total Grant Resources($)		**1,776,484.00**	**168,766.00**	**1,945,250.00**

E. Non Grant Instrument

NON-GRANT INSTRUMENT at CEO Endorsement

Includes Non grant instruments? **No**

Includes reflow to GEF? **No**

F. 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($)
IFAD	LDCF	Mali	Climate Change	NA	50,000	4,750	**54,750.00**
			Total Project Costs($)		**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). false

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

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

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

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This Project has an urban focus. false

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

Agriculture	**60.00%**
Natural resources management	**30.00%**
Climate information services	**10.00%**
Coastal zone management	**0.00%**
Water resources management	**0.00%**
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 false
Land degradation true
Coastal and/or Coral reef degradation false
Groundwater quality/quantity false

To calculate the core indicators, please refer to Results Guidance

Core Indicators - LDCF

CORE INDICATOR 1	Total	Male	Female	% for Women
Total number of direct beneficiaries	6,000	3,000	3,000	50.00%

CORE INDICATOR 2	
Area of land managed for climate resilience (ha)	3,000.00

CORE INDICATOR 3	
Total no. of policies/plans that will mainstream climate resilience	3

CORE INDICATOR 4		Male	Female	% for Women
Total number of people trained	3,800	1,900	1,900	50.00%

OUTPUT 1.1.1

Physical and natural assets made more resilient to climate variability and change

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		Male	Female
Total number of direct beneficiaries from more resilient physical assets	**6,000**	**3,000**	**3,000**

Ha of agriculture land	Ha of urban landscape	Ha of rural landscape	No. of residential houses
3,000.00			**0**

No. of public buildings	No. of irrigation or water structures	No. of fishery or aquaculture ponds	No. of ports or landing sites
0	**0**	**0**	**0**

Km of road	Km of riverban	Km of coast	Km of storm water drainage

Other	Other(unit)	Comments
0		

OUTPUT 1.1.2

Livelihoods and sources of income of vulnerable populations diversified and strengthened

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		Male	Female
Total number of direct beneficiaries with diversified and strengthened livelihoods and sources of income	**0**	**0**	**0**

Livelihoods and sources of incomes strengthened / introduced			
Agriculture	Agro-Processing	Pastoralism/diary	Enhanced access to markets
false	**false**	**false**	**false**
Fisheries /aquaculture	Tourism /ecotourism	Cottage industry	Reduced vulnerability of supply chain
false	**false**	**false**	**false**
Beekeeping	Enhanced opportunity for employment	Other	Comments
false	**false**	**false**	

OUTPUT 1.1.3

New/improved climate information systems deployed to reduce vulnerability to climatic hazards/variability

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		Male	Female
Total number of direct beneficiaries from the new/improved climatic information systems	**0**	**0**	**0**

Climate hazards addressed

Flood	Storm	Heatwave	Drought
false	**false**	**false**	**false**

Other	Comments
false	

Climate information system developed/strengthened

Downscaled Climate model	Weather/Hydromet station	Early warning system	Other
false	**false**	**false**	**false**

Comments

Climate related information collected

Temperature	Rainfall	Crop pest or disease	Human disease vectors
false	**false**	**false**	**false**

Other	Comments
false	

Mode of climate information disemination

Mobile phone apps	Community radio	Extension services	Televisions
false	**false**	**false**	**false**

Leaflets	Other	Comments
false	**false**	

OUTPUT 1.1.4

Vulnerable natural ecosystems strengthened in response to climate change impacts

Types of natural ecosystem

Desert **false**	Coastal **false**	Mountainous **false**	Grassland **false**
Forest **false**	Inland water **false**	Other **false**	Comments

OUTPUT 1.2.1

Incubators and accelerators introduced

	Male	Female
Total no. of entrepreneurs supported	**0**	

	Comments
No. of incubators and accelerators supported	

	Comments
No. of adaptation technologies supported	

OUTPUT 1.2.2

Financial instruments or models to enhance climate resilienced developed

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Financial instruments or models

PPP models	Cooperatives	Microfinance	Risk insurance
false	**false**	**false**	**false**

Equity	Loan	Other	Comments
false	**false**	**false**	

OUTPUT 2.1.1

Cross-sectoral policies and plans incorporate adaptation considerations

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Will mainstream climate resilience	Of which no. of regional policies/plans	Of which no. of national policies/plan
0	**0**	**3**

Sectors

Agriculture	Fishery	Industry	Urban
false	**false**	**false**	**false**

Rural	Health	Water	Other
false	**false**	**false**	**false**

Comments

OUTPUT 2.1.2

Cross sectoral institutional partnerships established or expanded

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No. of institutional partnerships established or strengthened	**0**

Comments

OUTPUT 2.1.3

Systems and frameworks established for continuous monitoring, reporting and review of adaptation

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No. of systems and frameworks	**0**

Comments

OUTPUT 2.1.4

Systems and frameworks established for continuous monitoring, reporting and review of adaptation

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No. of systems and frameworks **0**

Comments

OUTPUT 2.2.1

No. of institutions with increased ability to access and/or manage climate finance

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No. of institution(s)

Comments

OUTPUT 2.2.2

Institutional coordination mechanism created or strengthened to access and/or manage climate finance

No. of mechanism(s)

Comments

OUTPUT 2.2.3

Global/regional/national initiatives demonstrated and tested early concepts with high adaptation potential

No. of initiatives or technologies

Comments

OUTPUT 2.2.4

Public investment mobilized

Amount of investment
(US$)

Comments

OUTPUT 2.2.5

Private investment mobilized

Amount of investment
(US$)

Comments

OUTPUT 2.3.1

No. of people trained regarding climate change impacts and appropriate adaptation responses

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Total no. of people trained	**3,800**	Male **1,900**	Female **1,900**
Of which total no. of people at line ministries	**1,200**	Male **600**	Female **600**
Of which total no. of community/association	**550**	Male **275**	Female **275**
Of which total no. of extension service officers	**700**	Male **350**	Female **350**
Of which total no. of hydromet and disaster risk management agency staff	**400**	Male **200**	Female **200**
Of which total no. of small private business owners	**250**	Male **125**	Female **125**
Of which total no. school children, university students or teachers	**700**	Male **350**	Female **350**
Other	Comments		

OUTPUT 2.3.2

No. of people made aware of climate change impacts and appropriate adaptation responses

		Male	Female
No. of people with raised awareness	**0**	**0**	**0**

Please describe how their awareness was raised

OUTPUT 3.1.1

National climate policies and plans enabled including NAP processes by stronger climate information decision-support services

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No. of national climate policies and plans

Comments

OUTPUT 3.1.2

Systems and frameworks established for continuous monitoring, reporting and review of adaptation

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No. of systems and frameworks

Comments

OUTPUT 3.1.3

Vulnerability assessments conducted

No. of assessments conducted

Comments

OUTPUT 3.2.1

No. of institutions with increased ability to access and/or manage climate finance

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No. of institution(s)

Comments

OUTPUT 3.2.2

Institutional coordination mechanism(s) created or strengthened to access and/or manage climate finance

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No. of mechanism(s)

Comments

OUTPUT 3.2.3

Global/regional/national initiative(s) demonstrated and tested early concepts with high adaptation potential

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No. of initiative(s) or technology(ies)

Comments

OUTPUT 3.3.1

No. of people trained regarding climate change impacts and appropriate adaptation responses

		Male	Female
Total no. of people trained	**0**	**0**	**0**
Of which total no. of people at line ministries	**0**	Male	Female
Of which total no. of community/association	**0**	Male	Female
Of which total no. of extension service officers	**0**	Male	Female
Of which total no. of hydromet and disaster risk management agency staff	**0**	Male	Female
Of which total no. of small private business owners	**0**	Male	Female

Of which total no. school children, university students or teachers	**0**

Other	Comments

OUTPUT 3.3.2

No. of people made aware of climate change impacts and appropriate adaptation responses

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		Male	Female
No. of people with raised awareness	**0**		
Please describe how their awareness was raised			

Part II. Project Justification

1a. Project Description

describe any changes in alignment with the project design with the original pif

The design of the PIF of this project benefitted from consultations with a broader range of stakeholders in Mali; ranging from government agencies (national and subnational levels, including those from Segou), the academia, civil society organisations, the private sector and other developing partners in the country. The consultations were iterative, and additional consultations that followed during the PPG informed the changes in the table below.

Table 1

Nr.	PIF stage	CEO endorsement request stage
Indicators	Component 1: (i) 500 people trained in integration of CC resilience in land-use planning (50 % women) ii) 2 communal plans that mainstream CC	(i) 500 people trained in integration of CC resilience in land-use planning (50 % women) ii) 2 communal plans that mainstream CC iii) 1 comprehensive assessment conducted (impact, vulnerability and adaptation assessments, and socio-economic analysis) to support CC mainstreaming into Communal Investment Plan.
	Component 2: (i) 1,000 ha of land under climate resilience practices (ii)50 % increase of farm output value per hectare (iii) 1,600 direct and 11,200 indirect beneficiary households (50% of beneficiaries are women and 30% youth). (iii) 3,000 direct and 21,000 indirect beneficiary households with strengthened livelihood resilience (at least 50% of beneficiaries are women and 30% youth)	i) 800 ha of land under climate resilient practices (*more realistically achievable compared to the proposed 1,000 ha at PIF stage)* *ii) 1,500 household beneficiaries of climate resilient agricultural production systems (easier to track and monitor than 50% increase in farm output at PIF*) iii) Local species with high commercial and medicinal value domesticated on 2,500 ha by 3,000 direct beneficiaries and 15,000 indirect beneficiaries using agro- ecological horticultural practices to sustainably increase food security (at least 50% women) (*easier to track and monitor but also 12,000 indirect beneficiaries is a more realistically achievable target compared to 21,000 at PIF*). *iv) 1,800 ha under concrete agro-ecological measures to address the effects of drought, desertification and climate change, benefiting 1,000 farmers through Farmers Field Schools (FFS) (target added for output 2.1.3)*

Nr.	PIF stage	CEO endorsement request stage
	Component 3: (i) 50% increase in youth and women employment opportunities in climate resilient agriculture (ii) 2,500 beneficiary households (50% women-headed) strengthened with organizational capacities to address issues related to climate impacts in value chain development	2,000 beneficiary households of farmers (50% women-headed) strengthened with organizational capacities to address issues related to climate impacts in value chain development (*more realistically achievable target compared to the proposed 2,500 farmers at PIF stage*). ii) 2,000 household beneficiaries (50% women-headed) adopting technical tools and integrated approaches (*more realistically achievable target compared to the proposed 2,500 farmers at PIF stage*).
	Component 4: (i) 7,800 new direct beneficiaries and 21,000 indirect beneficiaries reached (at least 50% women and 30% youth) (ii) *2,800 new household beneficiaries and 7,600 indirect household beneficiaries captured in the exit strategy.* *iii) 100 journalists, 200 community leaders and 1,500 lead farmers trained in IACC approaches*	i) The indicator regarding 7,800 new direct beneficiaries has been deleted. In the CER, the first indicator is: i) 2,000 beneficiaries accessing endogenous and exogenous knowledge on best available technologies and climate resilient practices for production and post-harvest processing (*adjusted as a more realistically achievable target compared to the proposed 3,000 beneficiaries at PIF stage*). ii) 1,800 people captured in the exit strategy. iii) 100 journalists, 200 community leaders and 1,000 lead farmers trained in IACC approaches *(adjusted as 1,000 lead farmers as target because this number is a more realistically achievable target compared to the proposed 1,500 lead farmers at PIF stage*).

Nr.	PIF stage	CEO endorsement request stage
Outputs	Component 2: 1,000 ha under climate resilient species, essences and seeds produced and distributed by 1,000 households to support the climate resilience agricultural production systems by sustainably intensifying production Output 2.1.2 Local species with high commercial and medicinal value domesticated on 3,000 ha by 1,600 direct beneficiary households and 11,200 indirect beneficiaries using agro- ecological horticultural practices to sustainably increase food security (at least 50% women).	2.1.1: 800 ha under climate resilient species, essences and seeds produced and distributed to 1,000 households to support the climate resilient agricultural production systems by sustainably intensifying production (*adjusted as 800 ha under climate resilient species and seeds produced and distributed to 2,000 households compared to 1,000 ha at PIF as 1,800 is a more realistically achievable target*) 2.1.2: Local species with high commercial and medicinal value domesticated on 2,500 ha by 1,500 direct beneficiaries and 10,000 indirect beneficiaries using agro- ecological horticultural practices to sustainably increase food security (at least 50% women) *(ha under local species with high commercial and medicinal value and indirect beneficiaries adjusted as 2,500 ha, 1,500 direct and 10,000 indirect beneficiaries, respectively ? these are more realistically achievable targets compared to 3,000 ha, 1,600 direct and 11,200 indirect beneficiaries proposed at PIF*) 2.1.3: Concrete agro-ecological measures to address the effects of drought, desertification and climate change are promoted on 1,800 ha with 1,000 farmers through the FFS to support the climate resilience agro-ecological production systems by sustainably intensifying production (disaggregated by gender 50 % women) *(consistent with the PIF stage proposed target, 1,000 farmers will be maintained at CEO endorsement).*
	Component 3: **3.1.1:** 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. 3.1.2: 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.	**3.1.1:** 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 (*PIF stage targets maintained)* . **3.1.2:** Appropriate technical tools and integrated approaches to climate change adaptation are adopted by 2,500 (at least 50% women and 30% youth) household beneficiaries in 50 communities (*PIF stage targets maintained)*.

Nr.	PIF stage	CEO endorsement request stage
	Component 4: Output 4.1.1: 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 for adoption (at least 50% women and 30% youth) **4.1.2:** The results of the project are captured in an exit strategy for scaling with 2,800 direct household beneficiaries and 7,600 indirect household beneficiaries (at least 50% women-headed and 30% youth). **4.1.3**: 100 journalist and 200 community leaders, 1,500 lead farmers trained on IACC approaches and resilience building and 10 Social and environmental safeguard measures are identified and managed	**4.1.1:** 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 2,500 direct household beneficiaries for adoption (at least 50% women and 30% youth) (*adjusted as 2,500 direct household beneficiaries as this target is more realistically achievable compared to the 3,000 direct beneficiaries at PIF).* 4.1.2: The results of the project are captured in an exit strategy for scaling with 1,800 direct household beneficiaries (at least 50% women-headed and 30% youth) (*target more realistically achievable compared to the 2,800 direct beneficiaries at PIF).* **4.1.3**: 100 journalist and 200 community leaders, 1,000 lead farmers trained on IACC approaches and resilience building and 10 Social and environmental safeguard measures are identified and managed (*1,000 lead farmers are a more realistic target than 1,500 proposed at PIF stage*).
	Output 4.1.2: The results of the project are captured in an exit strategy for scaling with 3,000 direct beneficiaries and 21,000 indirect beneficiaries (at least 50% women and 30% youth)	**4.1.2:** The results of the project are captured in an exit strategy for scaling with 1,800 direct household beneficiaries and 3,000 indirect household beneficiaries (at least 50% women-headed and 30% youth).

1a. *Project Description*. Elaborate on: 1) the global environmental and/or adaptation problems, root causes and barriers that need to be addressed (systems description); 2) the baseline scenario and any associated baseline projects; 3) the proposed alternative scenario with a brief description of expected outcomes and components of the project; 4) alignment with GEF focal area and/or Impact Program strategies; 5) incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and co-financing; 6) global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF); and 7) innovativeness, sustainability and potential for scaling up. ?

1.a. Project Description

1. Covering 1,241,238 km2 of drylands in the heart of West Africa, Mali is among the Least Developed Countries with a Human Development Index of 0.434 ? which puts the country in the

low human development category and positions it at 184 out of 189 countries and territories.[1][1] The country consistently ranks among the world?s very least developed countries; with 90% of the population earning less than USD 2 a day[2][2]. 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[3][3]. 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)[4][4]. 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?).[5][5]

2. The population of Mali is estimated at 20.9 million inhabitants in 2021 according to World Bank data. It is expected to reach 27 million in 2030, 35 million in 2040 and 44 million in 2050, according to the United Nations medium-variant projection. Mali is expected to be the second most populous country in the Sahel in 2050, after Niger. Much of the country is sparsely inhabited, notably in the north. It is a plains and lowland nation with an average elevation of 500 meters. Mali is crossed by two large rivers: the Niger and the Senegal. The hydrographic network mostly serves the country's southern regions. In the south, annual rainfall ranges from 900 to 1,200 mm, whereas in the north, the average is around 200 mm. Agriculture, animal husbandry, and fishing are the mainstays of the economy. Agricultural employment represents 62.4 percent of the total employment, which is not far from the average of 69.2 percent of the G5 Sahel countries[6][6]. This means that economic growth is still influenced by weather and raw material prices on the worldwide market.

3. The population is relatively young and 65% is under 25 years of age. The annual population growth rate is estimated at 3.6 %. Poverty in Mali has increased according to the latest QUIBB survey, which shows that 57 % of the poor lives in rural areas compared to 28.5 % 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 rate of 6.8 % in 2014 and 7.6 % 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).

4. In Mali, family-based agriculture accounts for 39.4 % of Mali?s GDP (IFAD, 2020). The production of crops represents 60 % of the sector; livestock 36 %; and fisheries 6 %. Crops are grown on 4.8 million hectares of land or 4 % of the territory. Farms are mostly small (58 % 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 % is marketed. Livestock farming is very widespread ? 87 % 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 % (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.

5. In Mali, 11 million people (approximately 60 % 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 %, 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 % of food production in the country[7][7], 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.

6. 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[8][8][9]. According to estimate, only 20 % of women engaged in agriculture have access to land[9][10], and women represent fewer than 5 % of all agricultural landholders in the country[10][11]. 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 %age points. In the area of ??agricultural finance, it is important to emphasize that women with access to campaign credits make less than 5%[12][11][13].

7. 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.

The geopolitics and insecurity in Mali

8. The presentation of the socioeconomic situation of Mali would be incomplete without allusion to the historical geopolitics and insecurity that have been unfolding for many years now. Mali is struggling to build peace and achieve security after an armed rebellion broke out in northern Mali in January 2012. The crisis started as a Tuareg rebellion against the Malian government, the fourth in a series of rebellions starting in 1963. The 2012 rebellion developed into a violent extremist insurgency as a number of violent extremist groups joined in and took over several cities and territory in northern Mali. The wide spread of violence to many areas of the country, including those of socioeconomic diversity where pastoralist communities, farming communities, fishermen, traders?and a variety of ethnic groups?cohabitate[12][14] has significantly weakened the ability of communities to cope with many shocks, including those related to climate change in a country that already faces a harsh climate.

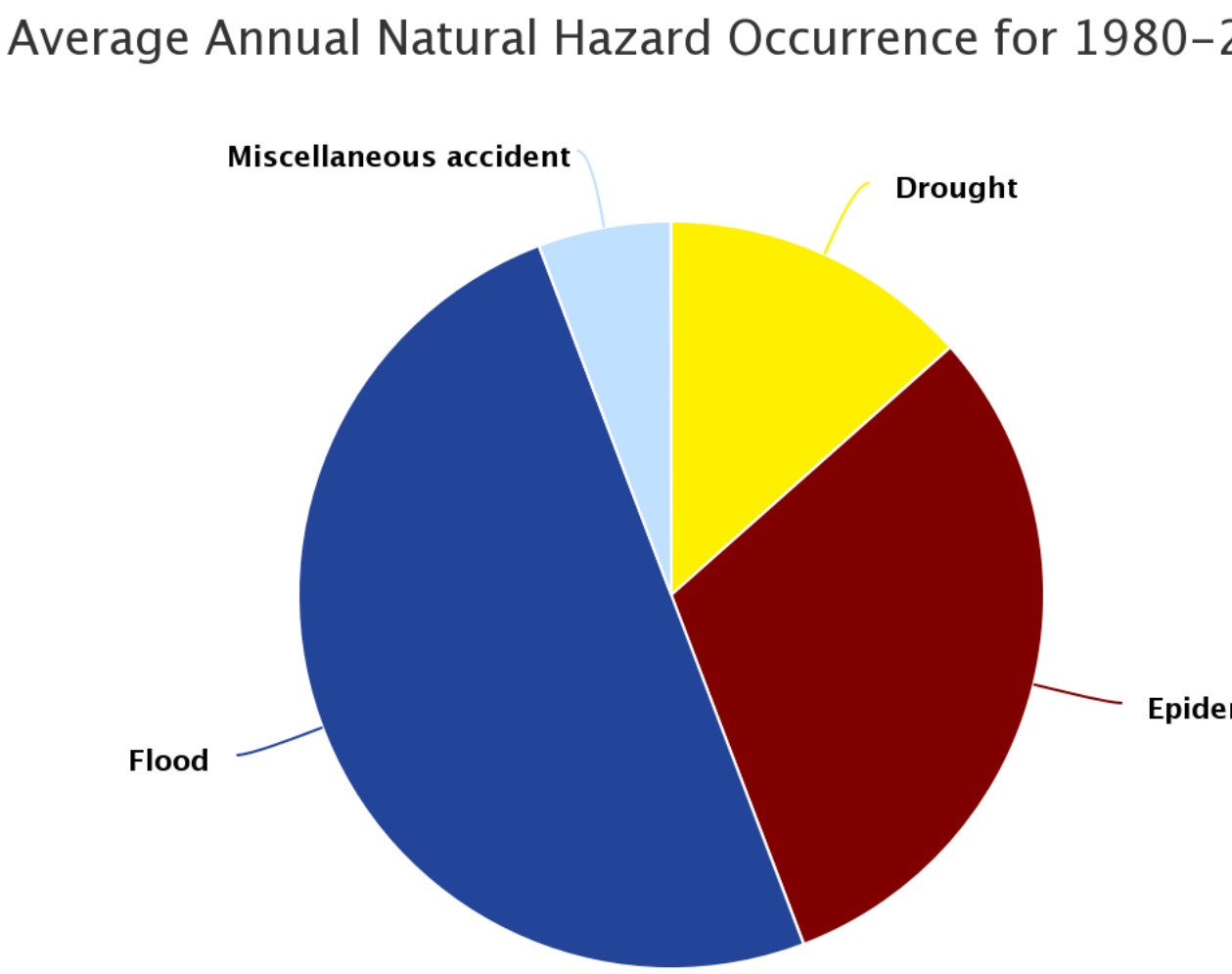
9. In an environment of violence, broken systems and weak institutions are not uncommon. Mali is not an exception. In the Mopti region, for example, where about 62% cases of violence have been reported, the system regulating access to lands and framework for conflict resolution is fragile. There is increased competition between farmers, pastoralists, rice farmers and fishermen, and becoming more complex, exploited by both militias and violent extremist groups. When there was peace, conflicts between farmers and pastoralists have been resolved through local customary mechanisms and traditional agreements (Djowro) for the management of grazing lands and agricultural lands.

10. The perceived absence of trusted arbitrators to resolve disputes in central Mali?namely the state and customary authorities?who would normally be able to de-escalate disputes before they become violent, has led to a cycle of violence. For example, the perceived inability by the Government to curtail massacres of civilians was a cause of the anti-government protests in Bamako in 2020, leading to the forced resignation of President Ibrahim Keita on August 18th, 2020. On May 24th, 2021, the transition President and its prime minister were accused by the vice-president of violating the transition charter, and resigned the next day. In the lead-up to these recent events, the Tuareg rebellion initiated a separatist movement in 2012, whose strength came in the wake of political and revolutionary changes in Libya and Ivory Coast and a return of Malians who had been living abroad, thereby intensifying separatist sentiments. The rise of Islamist extremist groups in the north caused further instability. The government signed a peace accord with northern separatist rebels in 2015, but armed groups continue to assert territorial control in much of the area. The generally fragile security situation has knock-on effects on the socioeconomic environment in the country, as well as the ability of the country to respond to the impacts of climate change. This is even more crucial for rural communities whose socioeconomic conditions are vulnerable.

? Mali's political, economic, and social situation has deteriorated due to a multitude of factors, some of which are partially interwoven, such as Covid-19 but also political instability. Following the coup of 18 August 2020, a second coup on 24 May 2021 restored military control of the country. Colonel Assimi Gota was elected president, forming a shaky new coalition between military officers and civilians. Mali's defence budget has had to be increased at the price of economic and social development since 2012. In mid-December 2021, the government and the country?s largest jihadist grouping, Jama?at Nusratul Islam wal Muslimin (JNIM) announced their intention to hold ceasefire talks. In 2020, real GDP contracted by 2% and there has been a cumulative 5% increase in poverty. That year?s agricultural campaign resulted in a 79% decline of cotton output, due to lower international prices and disputes over fertilizer subsidies (WB 2021). In 2022-23, rising cotton production and stable gold output are expected to lead to accelerating economic growth (EIU 2021). Mali's economy is still largely centered on family farming, with limited diversification. The presidents of the Economic Community of West African States (ECOWAS) resolved to tighten sanctions against Mali on January 15, 2022.

Climate Change vulnerability and impact in MALI

11. 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. Flood is the most frequent natural disaster occurring in Mali in average for the period 1960-2020, followed by droughts and epidemics (see figure below on the average annual natural hazard occurrence for 1980-2020[13][15]). The country is vulnerable to flooding predominantly in the southern regions, and damage of USD 600 million to crops and USD 1 billion of damage to the building stock may occur in at least one flood in a person's lifetime[14][16]. 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. Drought due to erratic rainfall are part and parcel of the natural variability in climate across Mali, but despite the several traditional mechanisms employed across the country to adapt to the drought conditions, more frequent droughts have plagued Mali in recent decades, exacerbating natural adaptive capacities[15][17].



12. 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 km2) where the Segou region is located. More than 1.5 million fishermen, rice farmers and herdsmen 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.

13. The 2013 floods also highlighted the increasing 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.

14. 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, [16][18], indicated an 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[17][19]. 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[18][20]. The figure 1 below present the projected mean temperature under 4 scenarios. Comparing the period 2041-2060 to observed values (1995-2020), GCM-SSP combinations for Mali predict an increase in mean temperatures, between 0.8?C and 0.9?C under the optimistic climate scenario, 1.4?C and 1.7?C under the pessimistic climate scenario, and 2?C to 2.4?C under the hot scenario[19][21].

15. Under the same projections RCP 2.6; RCP 4.5, RCP 6.0 and RCP8.5[20][22], 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[21][23]. Under RCP8.5 projections of extremes related to floods (e.g., r1xday, r95ptot, prcptot, etc.) indicate a north-south spatial gradient) with increased heavy precipitation (amount and occurrence) in the south and a decline in the north (figure 2)[22][24]. Furthermore, a significant number of GCM-SSP combinations predict a decrease in precipitations for Mali, which is between 24-28 percent under the wet scenario, and 4-7 percent under the dry scenario[23][25].

16. 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.

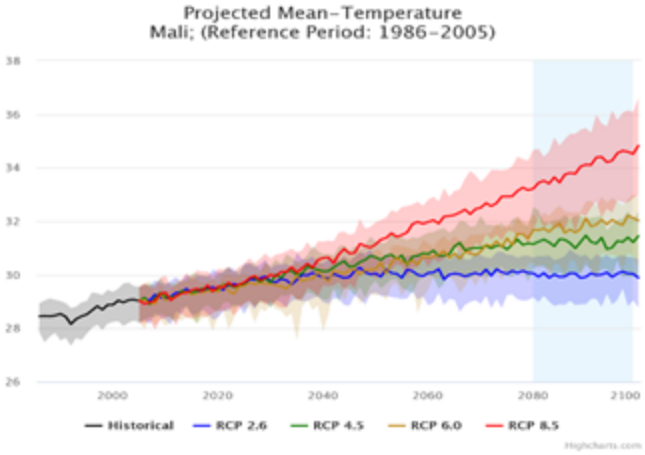


Figure 1: *Vulnerability Index and sensitivity for Scenario RCP 4.5 and RCP 8.5 Year 2050*

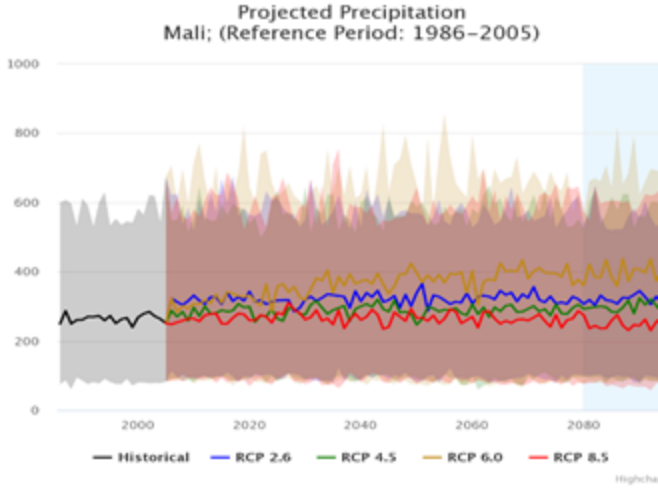
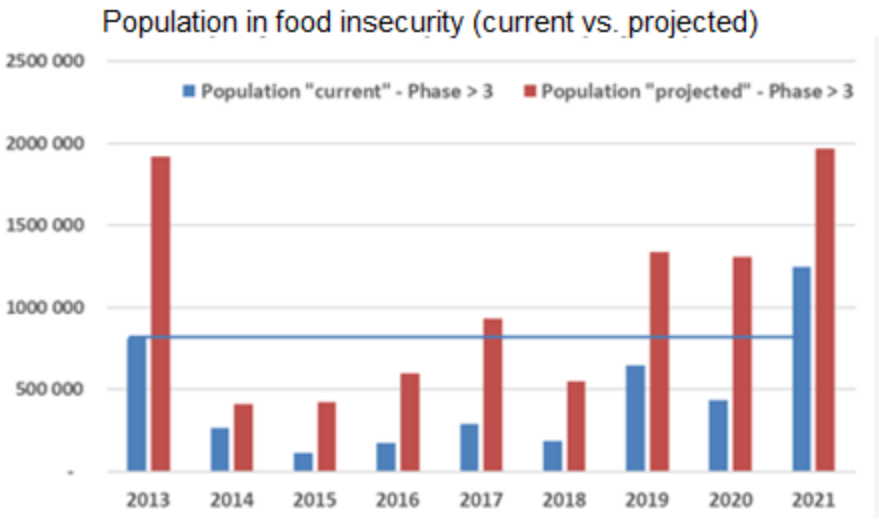


Figure 2 Climate Projections under four scenarios

17. 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[24][26]. In Mali Pastoralists and farmers have clashed as traditional herding grounds have been ravaged by droughts and desertification and heat waves mad 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 2022 SOFI report, the prevalence of wasting in the children under 5 years of age is 9.3 percent, and the prevalence of stunting 25.7 percent in 2020[25][27]. The population in food insecurity is increasing, and from October to December 2021, nearly 1.2 million people were known to be in need of emergency food assistance (phase 3 & 4),1 almost three times higher than the year before[26][28].

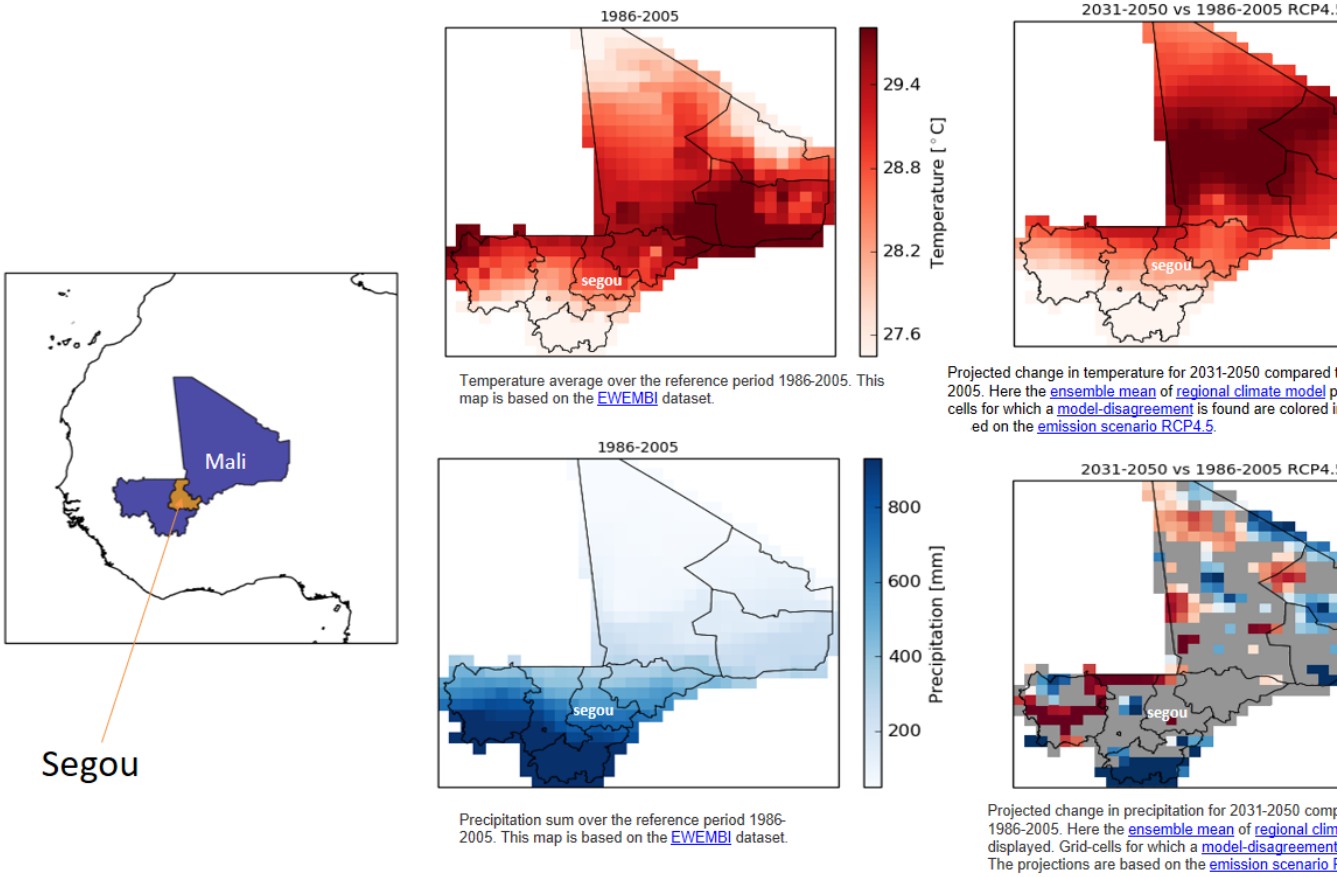


Projected Climate Change and impacts in SEGOU

18. The S?gou region, targeted by this project, remains one of the vulnerable regions to climate change in Mali. S?gou Region is divided into 7 circles 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, Malink?, and Toucouleur. The main economic activities are agriculture, livestock, pottery, market, fishing and industry.

19. 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. The combination of these changes lead to lower yields and pose further dangerous pressure on food security and poverty. Farm capital is affected and all contribute to increasing the vulnerability of the poorest. 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[27][29]. 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.

20. The graphs below illustrate the historical weather patterns as well as projections in terms of changes of precipitation and temperature across the country, including Segou ? from south to north in Segou, temperature increase can be observed while precipitation reduces when the historical and projected patterns are compared.

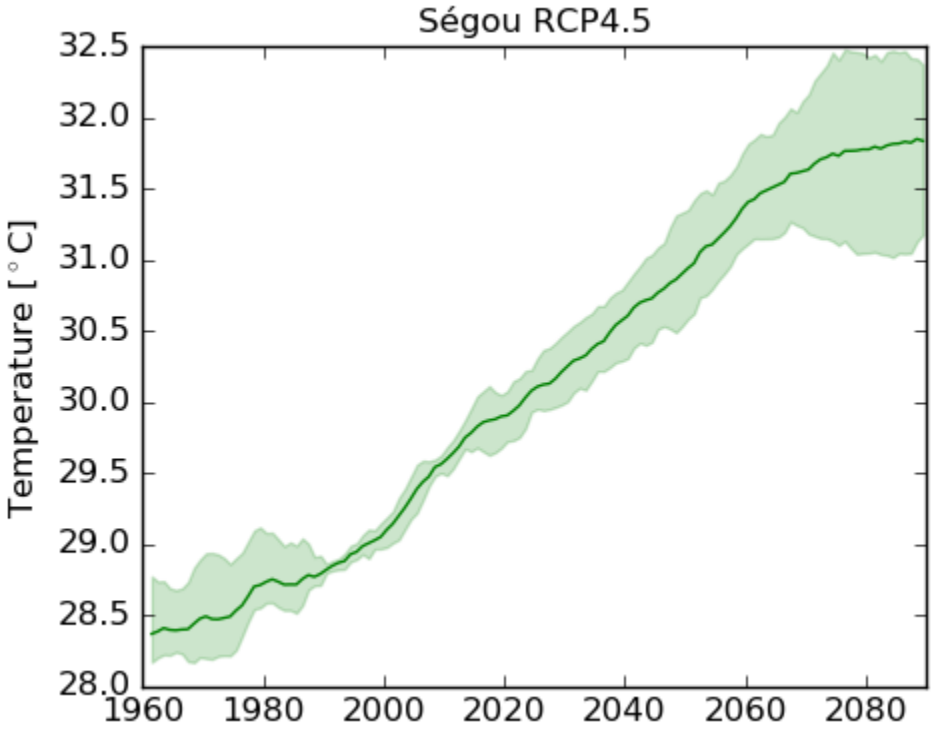


Source: Climate Analytics, 2021

21. The food-secure population rate is less than 20% in this region of Segou. 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.

22. The agriculture sector will be more affected by climate disruption. Indeed, since the climate is especially important for agriculture, recurrent and extreme events pose not only a threat to the production and distribution of food but also to the livelihoods of a large number of people who are dependent on agriculture as their main source of income. 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 populations of S?gou 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 S?gou 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.



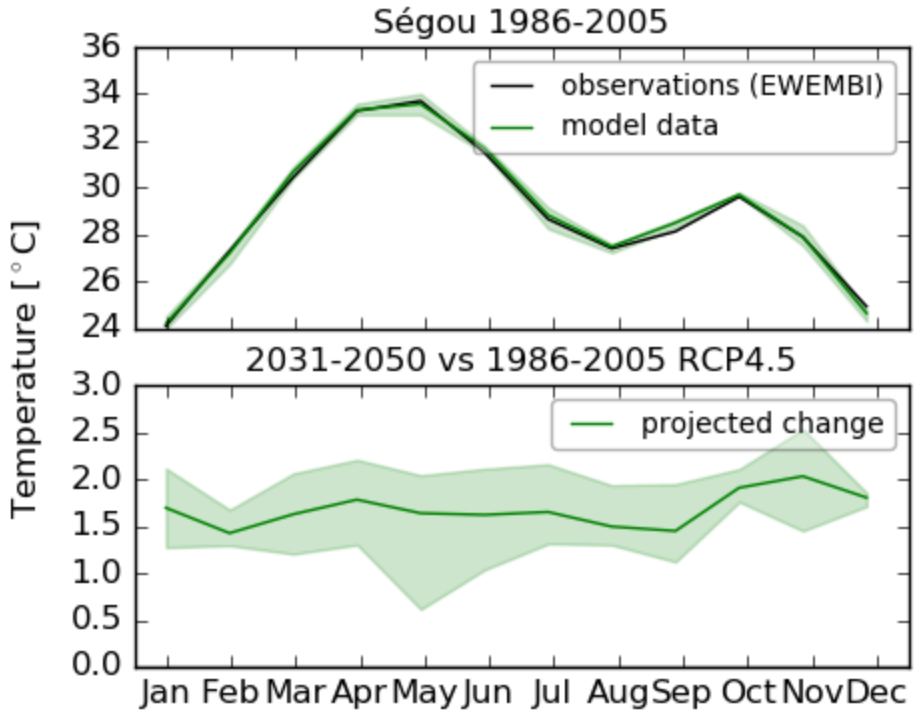
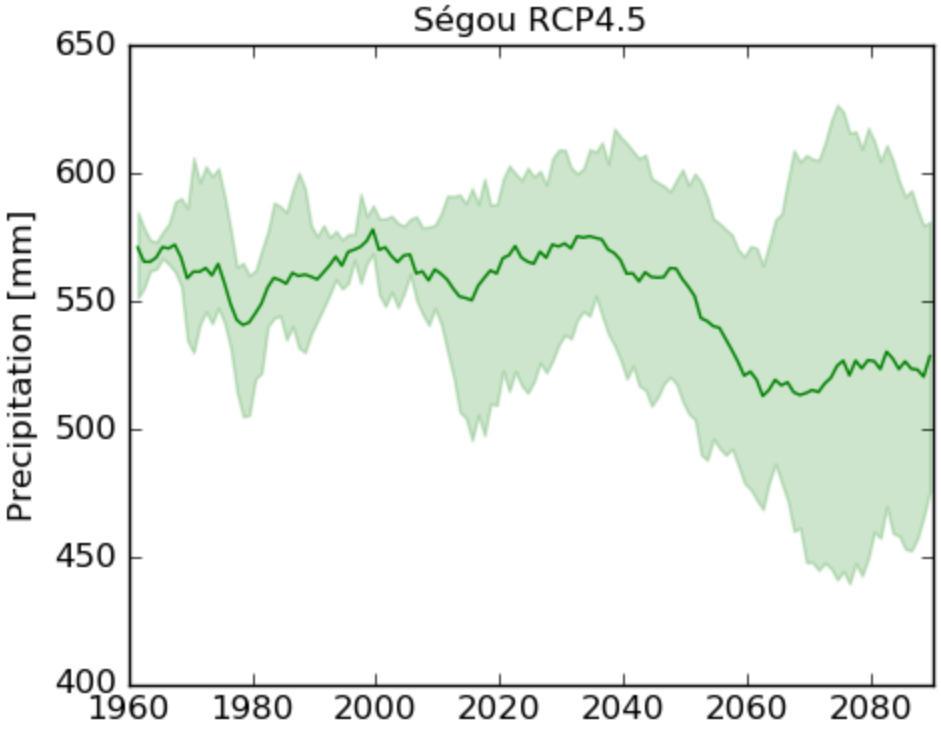


Figure 3: Regional climate model projections for temperature displayed as 20 year running mean. The line represents the ensemble mean while the shaded area represents the model spread. The projections are based on the emission scenario RCP4.5.

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.


Ségou RCP4.5
Precipitation [mm]
650
600
550
500
450
400
1960
1980
2000
2020
2040
2060
2080

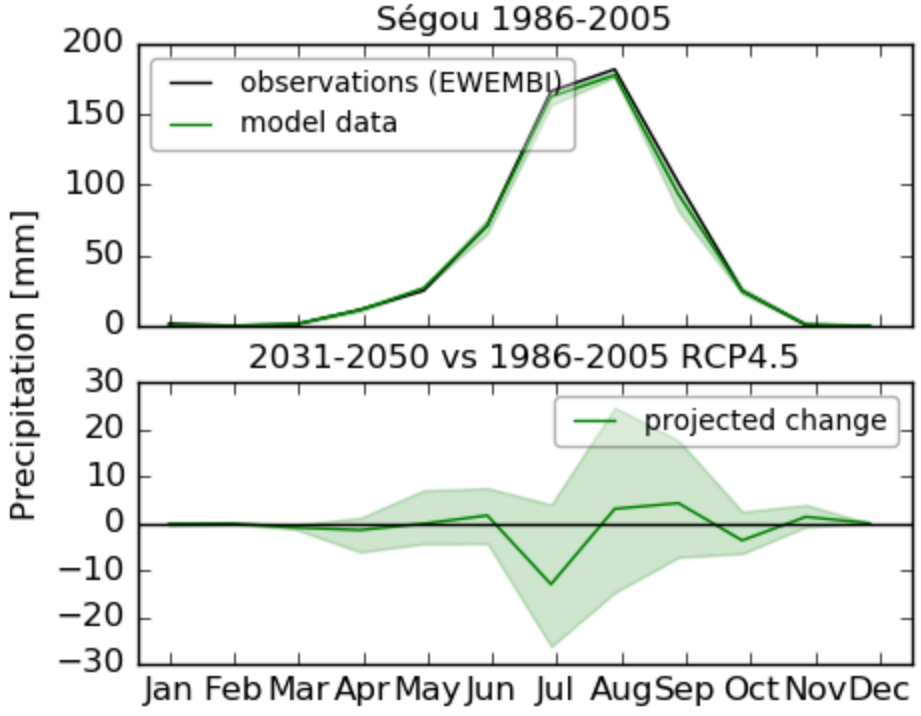

Ségou 1986-2005
observations (EWEMBI)
model data
Precipitation [mm]
200
150
100
50
0
2031-2050 vs 1986-2005 RCP4.5
projected change
30
20
10
0
−10
−20
−30
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Figure 4: 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.

23. 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[28][30].

24. 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. Segou, in addition to Bamako and Kayes, is among the regions that contribute the most to the national estimated building damage and affected population due to floods[29][31]. 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.

25. Other important environmental problems relate to bush fires, overgrazing due to extensive livestock farming and transhumance leading to excessive cutting explain the tendencies towards the degradation of lands. Other factors underlying these land degradation trends are the decline in agricultural productivity, due to low use of inputs, soil salinization and rainfall variability. As a result, producers are likely to adopt unsustainable farming practices, including agriculture extensive, to increase agricultural production. The hot pots of the degradation of land where negative trends are observed are located in the Sahelian zones, Sudanese, Guinean and the inner delta of the Niger River85. Between 2000 and 2015, it was noted a rate of 6.8% in terms of land degradation trends observed according to the national NDT report. Added to this is a decline in productivity affecting more of 22,000 km2 over the period 2000-2013 and an estimated carbon loss of nearly 570,000 T between 2000 and 2015. In addition, irrigated crops are constrained by soil leaching and alkalinization problems, plant proliferation invasive species and the unsustainable management of water resources.

26. Voluntary national targets envisaged for Mali are primarily to increase by 2030, the forest area to 26% of the total area of ??the territory, to be reduced, the proportion of land cultivated annually, affected by a decline in fertility and subject to erosion, i.e. approximately 2.5 million ha, to reduce

the annual loss by at least 25% of forest area, i.e. approximately 125,000 ha, with the aim of increasing the agricultural production and preserve ecosystems with a marked improvement in cover 10% vegetable. The neutrality guiding principle is based on a hierarchy of reactions to degradation that has already occurred or that has the potential to occur, as measured over a reference period by changes in the values of the primary indicators of land cover, net productivity, and soil organic carbon stock. Mali also commits to taking the following concrete actions in order to attain neutrality by 2030:

- Reduce the conversion rate between 2000 and 2015 of the land cover causing a
- degradation in forests, pastures and croplands, 35-20%;
- Reduce annual deforestation by 25%, i.e. a reduction of 125,000 ha;
- Increase the forest area by 10% between 2015 and 2030, i.e. around 200,000 ha, thanks to the reforestation and afforestation;
- Reduce by 50% the area of ??forests, croplands, pastures, affected by a decline in
- net land productivity of about 1,000,000 ha;
- Preserve the area of ??wetlands.

General characteristics of Land cover, Forest change, Fires and Climate in Segou compared to national level

27. The table below summarizes national level and Segou-level rates of deforestation/tree cover loss.[30][32]

Nr.	National-level	Segou-level
Land cover	? As of 2000, < 0.1% of Mali was tree cover. ? In Mali as of 2010, the top 1 regions represent 88% of all tree cover. Sikasso had the most tree cover at 43.1kha compared to an average of 5.46kha. ? FAO data from 2015 shows that Mali contains 4.72Mha of forest, which occupies 3.8% of the country.	? In 2010, S?gou had 49.2 kha of tree cover, extending over 0.039% of its land area. In 2021, it lost 130ha of tree cover, equivalent to 41.5kt of CO? emissions. ? As of 2000, < 0.1% of S?gou was tree cover. In S?gou as of 2010, the top 1 regions represent 65% of all tree cover. Niono had the most tree cover at 8 ha compared to an average of 2ha.

Nr.	National-level	Segou-level
Forest change	? From 2001 to 2021, Mali lost 3.79kha of tree cover, equivalent to a 15% decrease in tree cover since 2000, and 1.16Mt of CO_2e emissions. ? In Mali from 2001 to 2021, no tree cover loss occurred in areas where the dominant drivers of loss resulted in deforestation. ? In Mali, the top 1 regions were responsible for 74% of all tree cover loss between 2001 and 2021. This region had the most tree cover loss at 2.79kha compared to an average of 759ha. ? From 2001 to 2021, Mali lost 3.79kha of relative tree cover, equivalent to a 15% decrease since 2000 and < 0.1% of the global total. ? According to the FAO, the rate of deforestation in Mali was 146kha per year in 2010, of which 146ha per year was due to human activity. ? In Mali, the top 1 regions were responsible for 51% of all tree cover gain between 2001 and 2012. This region had the most tree cover gain at 2.55ha compared to an average of 0.558ha (Kayes 3ha; Mopti 2 ha; Sikasso 0.606 ha; S?gou 0.150 ha; Koulikoro 0.0752ha)	? From 2001 to 2021, S?gou lost 2ha of tree cover, equivalent to a 69% decrease in tree cover since 2000, and 546t of CO?e emissions. ? In S?gou, the top 2 regions were responsible for 67% of all tree cover loss between 2005 and 2006. Bla had the most tree cover loss at 0.300 ha compared to an average of 0.299ha. ? From 2001 to 2021, S?gou lost 2ha of relative tree cover, equivalent to a 100% decrease since 2000 and < 0.1% of the global total. ? In S?gou, the top 1 regions were responsible for 100% of all tree cover gain between 2001 and 2012. This region had the most tree cover gain at 0.150ha compared to an average of 0.0214ha. ? From 2001 to 2012, S?gou gained 0.150ha of tree cover region-wide equal to 3.0% of all tree cover gain in Mali.
Fires	? In Mali the peak fire season typically begins in mid-October and lasts around 28 weeks. ? In Mali, 1.5Mha of land has burned so far in 2021. This total is normal compared to the total for previous years going back to 2001. The most fires recorded in a year was 2004, with 9.5Mha ? In the most recent 4 weeks of data in Mali, the region with the most significant burned area was Kidal, with 181ha land area burned. This represents < 0.1% of the total area burned in Mali and is unusually high compared to the same period going back to 2001.	? In S?gou the peak fire season typically begins in early October and lasts around 32 weeks. ? In S?gou, 65kha of land has burned so far in 2021. This total is normal compared to the total for previous years going back to 2001. The most fires recorded in a year was 2004, with 470kha ? In the most recent 4 weeks of data in S?gou, the region with the most significant burned area was Macina, with 2.37kha land area burned. This represents 22% of the total area burned in S?gou and is unusually high compared to the same period going back to 2001

Nr.	National-level	Segou-level
Climate	? Between 2001 and 2021, forests in Mali emitted 55.2ktCO?e/year, and removed -45.5ktCO?e/year. This represents a net carbon flux of 9.69ktCO?e/year. ? Mali has a total carbon store of 2.47Gt, with most of the carbon stored in soil.	? Between 2001 and 2021, forests in S?gou emitted 26.0tCO?e/year, and removed -3.64tCO?e/year. This represents a net carbon flux of 22.3tCO?e/year. ? S?gou has a total carbon store of 213Mt, with most of the carbon stored in soil.

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

28. 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. Large economic losses are expected from climate change impacts as illustrated by the reduction in GDP. For Mali, annual GDP compared to a medium-growth baseline would be reduced by 6.4 percent under the wet and optimistic climate scenarios, and 10.7 percent under the dry and pessimistic climate scenarios by 2050[31][33]. The Stern Review, 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 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[32][34].

Climate Change impacts on Livestock

29. 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

30. Agriculture, which is mainly rain-fed, is impacted by climate change. Despite the potential for irrigated land, estimated to be around 2.2 million hectares, roughly 400,000 hectares (18 % in this overall potential) has been developed for irrigation[33][35]. 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[34][36]. 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

31. 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 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

32. 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 % 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[35][37].

Climate change impacts on health

33. 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 % of the population uses improved sanitation facilities and only 77 % uses piped water or other improved drinking water sources. Although the incidence of diarrheal disease declined 32 % 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 % 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

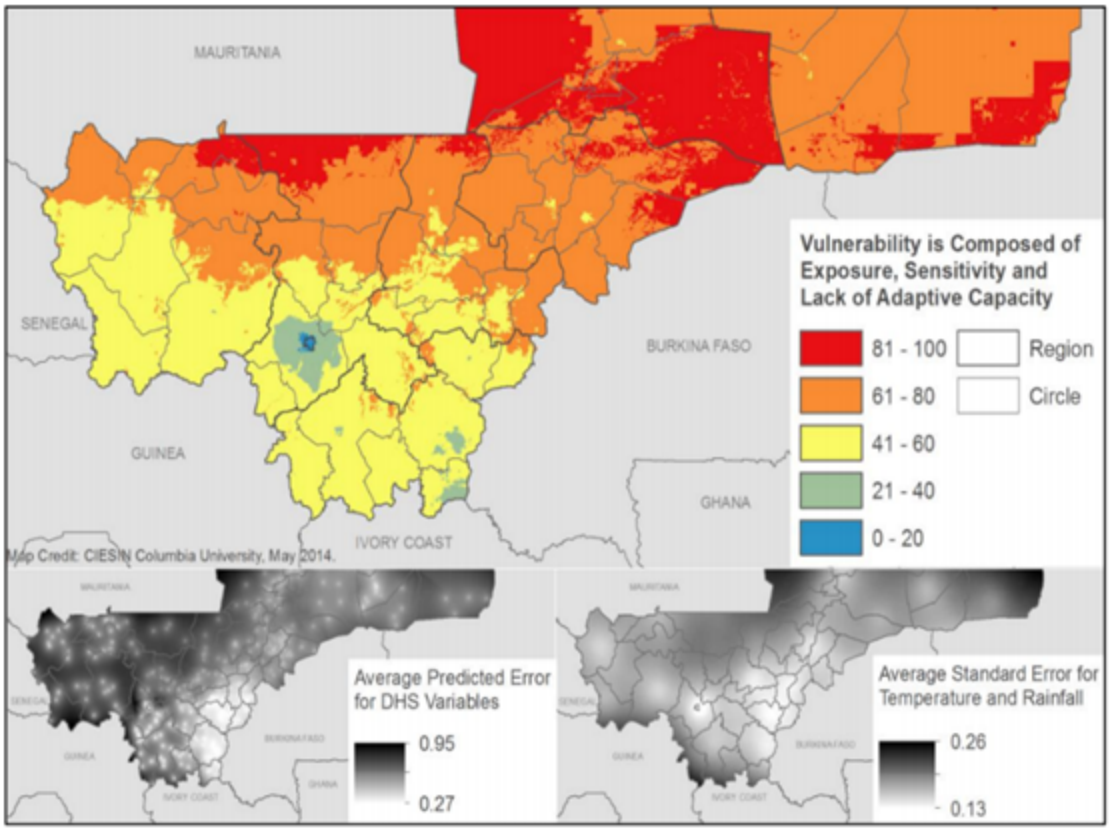
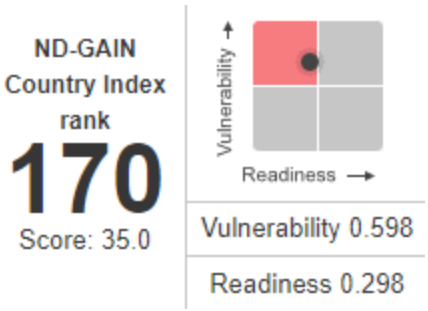


Figure X Climate vulnerability index for Mali

34. 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 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).

35. Overall, Mali has a vulnerability and a readiness score of 0.598 and 0.298, respectively.[36][38] The high vulnerability score and low readiness score of Mali places it in the upper-left quadrant of the ND-GAIN Matrix. It has both a great need for investment and innovations to improve readiness and a great urgency for action. Mali is the 7th most vulnerable country and the 37th least ready country. Vulnerability score takes into account food, health, water, infrastructure, ecosystem services and human habitat.



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

Key threats relevant to the proposed project in Segou

? *Climate change:* The Central regions of Segou in Mali faces the threat of very severe climate change that could aggravate the food crises and engender conflicts over scarce resources. Mali suffered from a series of drought periods between 1980 and 2017, which seriously affected more than 6.9 million of inhabitants in the whole country[37][39], especially transhumant populations. Pastoralists are forced to remain near permanent water sources, which is leading to considerable overgrazing and ineffective implementation of integrated water resources management. Crop losses in and around the Segou regions are often the result of extended dry spells, poor rainfall and dry conditions. Water stress and extreme temperatures affect flower induction, fruit set and pollen survival as well as horticulture production growth, reducing yields. Sudden rises in temperature and acidification can lead to the loss of marine habitats and species as it is changing the distribution of fish stocks and altering the structure of ecosystems. Heat can also impacts farmers? ability to market and conserve fish, horticulture products, flowers and fruits from agroforestry, which are highly perishable. Expanding agro-silvo-pastoralism, coupled with poor land management practices, has significantly increased erosion and sedimentation, particularly on the Niger River flood plain in the Segou regions. Floods in Mali have occurred fifteen times in 30 years, affecting between 1,000 and more than 88,000 people at each event on average. For instance, on August 28, 2013, they caused 56 deaths with a lot of material damage in the capital of Bamako.

? Climate variability increases incidence of disease. The risks to human, animal and crop health associated with extreme weather events are also expected to lead to an increased incidence of diseases. For instance, up to 75 per cent of emerging infectious diseases that affect humans are zoonotic, which originate from animals, either domestic or wild[38][40]. The main causes for this increase are ecosystem conversion, habitat fragmentation and the way we produce, trade and use living species for food,

medicines and other products[39][41]. Hence, there is a pressing need for improved integrated approaches and planning at local level that include climate change hazards and disasters. In addition, COVID-19 is another threat to the population?s health in the Central regions of Segou and the entire stability of the country. Lockdowns and the global economic downturn have risen food prices, caused major disruptions in agro-silvo-pastoral and forestry value chains and exacerbated the low profitability of agro-silvo-pastoral farming and fish farming due to limited access to markets, making rural smallholders in the Segou regions more at risk to lose their livelihoods.

? Non-climatic stressors such as land-use change, forestry and conflicts also threaten natural resources in the Central regions of Segou. According to the Land Degradation Neutrality (LDN) country report (2020)[40][42], the current land degradation trends in Mali are mainly bush fires, overgrazing due to extensive livestock farming and transhumance leading to excessive cutting. These areas are also affected by the progression of extensive agro-silvo-pastoralism, in a context of reduction in the duration of fallow. Efforts to build climate change resilience at the local level in Mali must give attention to the nexus of both climatic and non-climatic stressors.

? *Conflicts and displacement:* Repeated climatic events is at the origin of the various forms of migratory movements to other lands affecting the land and natural resource management in the Segou regions. According to a 2020 report by the Norwegian Refugee Council?s Internal Displacement Monitoring Center (IDMC), floods alone triggered around 7,400 new displacements in the country, a figure that should be considered an underestimate due to lack of systematic monitoring of disaster displacement in the country[41][43]. Compounding this already precarious situation, Mali has faced a humanitarian crisis since 2012 by the presence of non-state armed groups in the northern and central regions (including Segou) and subsequent violence, conflict with armed forces, and human rights abuses, fuelled by intercommunal tensions and rooted in long-standing development challenges. The crisis has significantly worsened the living conditions of a large proportion of the population in the affected areas and led to massive population displacement. In 2020, violence continued to expand further south, triggering at least 277,000 new displacements, some of the highest figures recorded in the last decade[42]. The IDMC further estimates that most violent clashes originate from disputes over access to land and natural resources between agro-silvo-pastoral farmers.

? *Deforestation:* Forest areas, estimated at 10.1% of Mali's total area in 2008, are continually declining. Recent estimates from the National Directorate of Water and Forests show the disappearance of 450,000 to 500,000 ha of forest per year in the country[43][44]. Sahelian and Sudanian savannas in the Segou regions are increasingly being used for firewood, fodder, medicine, shade, and other non-timber forest products, to the benefits of farmers and their livestock. According to a 2020 study on land degradation in the Segou regions, firewood harvesting remains a key cause of deforestation in farmers' views across the Segou regions ; however, when asked about its shortage, 74.4% of farmers perceived

it as abundantly available in Segou[44][45]. Income-generating activities like charcoal production are also perceived to be a cause of deforestation in the Segou regions. Deforestation is uncontrolled in the Segou regions due to poverty and the absence of integrated sustainable management systems for community forest. This leads to reduced yields, soil degradation and decreased soil fertility.

? *Bush fires*: Bushfires have increasingly become a common phenomenon in production landscapes in the Segou regions, which increases CO_2 emissions, pollution, tree and wildlife mortality and tremendous tdamage to the natural environment and fauna. Bushfires are introduced as communities search for firewood, cultivation, settlements and to a lesser extent, hunting. The fires are uncontrolled, and therefore, when done at the time of the year when the production landscapes are is most vulnerable to seasonal winds and sunshine, they expose the land to erosion. Climate change has likely made the bushfires more intense and added to the severity by elongating the duration of the fires. It is therefore, urgent to curb the level of bushfires in the country with appropriate and enforceable policies that reflect people?s livelihood needs.

? *Overgrazing*: The livestock sector in Mali is diverse, with more than 15 million cattle, 32 million small ruminants, 37 million poultry, and nearly 1 million camels, contributing more than 14 percent of the country?s total GDP[45][46]. Livestock production in Mali is largely concentrated in pastoralist and agro-pastoralist livelihoods. Livestock is reared in an extensive free-range system in open grasslands / rangelands. Due to the high stocking density and the incidence of annual bush fires that consume most of the feed resources, there is consistent scarcity of livestock feed during the dry months of the year. The convergence and concentration of livestock in and around isolated pockets of remaining grazing areas leads to range degradation, loss of topsoil, and the proliferation of unpalatable species.

? *Transhumant practices*: In 2001, the Pastoral Charter (Charte Pastorale) was passed in the country, acknowledging the right of pastoralists to move their herds in search of water and fodder, including into neighbouring countries, while requiring them to respect the property of others and protect the environment, for example, by avoiding overgrazing. However, the increased movement by transhumant herders in the Central regions of Segou has resulted in growing competition over natural resources. Results from a 2018 study in the Sudano-Sahelian/Sudano-Guinea zones of Mali showed that more than 75% of all categories of respondents perceived a decline in availability of forage resources and water as a result of the increased number of transhumant herders in their communities. This led to a decline in species richness of the vegetation. In contrast, the study showed that more than 50% of transhumant herders did not see any difference in vegetation quality and quantity due to their presence as they believed the decline is due to climate change. Therefore, in order to promote sustainable use of natural resources in the Central regions of Segou in Mali, it is necessary to engage all the actors on how to effectively manage the presence of transhumant herders.

? *Agro-silvo-pastoral activities expansion*: The compounding effect of the population growth (Segou has a population of 2,785,676 inhabitants)[46][47] and the scarcity of land have forced agro-silvo-

pastoral farmers to intensively cultivate and overgraze. This exhausts the soil nutrients and ultimately leads to decline in crop yields. Land placed under continuous cultivation further becomes eroded with the eroded materials transported to low land areas resulting to sedimentation. Soil erosion and siltation from agriculture and livestock grazing are important processes degradation of production lands in the Central regions of Segou, continuing threats of agro-silvo-pastoral activities on biodiversity and water resources. In the Segou region, shallow and fragile soils characteriwed the majority of lands. Among the consequences of soil degradation process are (i) the acceleration of erosion; (ii) the degradation of vegetation; (iii) the reduction of rainwater infiltration; (iv) the reduction of diversity and productivity of plant resources; (vi) soil depletion; (vii) an increased competition in land use beetwen agriculture and livestock, etc.

? Through its LDN target setting programme, the NDC commitment and the country?s ratification of the three Rio Conventions, namely the Framework Convention on United Nations on Climate Change (UNFCCC), the International Convention on Biological Diversity (CBD) and the United Nations Convention to Combat Desertification (UNCCD), the Government of Mali has demonstrated the political will and commitment to address the threats above that affect the productive capacity of land in the country. However, the government still faces barriers in attempting to avoid, reduce or reverse the trends witnessed in land degradation and climate change. These barriers are related to institutional and organizational capacities of relevant stakeholders to integrate climate resilience approach in agroforestry production systems, lack of access to financing to foster integrated climate resilience into planning and production, limited knowledge of the practice of climate dependent or rain-fed agriculture as well as limited investments in community agroforestry and livestock management and climate-resilient agriculture.

36. 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 the 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[47] 2014; Nyantakyi-Frimpong and Bezner-Kerr 2015[48][48]; Quinn et al. 2011).

37. 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[49][49]; 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.

38. 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 decortication, 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 (UNFCC) 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.

Key barriers relevant to the proposed project in Segou

39. 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.

40. Barrier 2: Weak organizational capacities of farmers, local, national governments, and access to financing to foster integrated climate resilience into planning and production. Local 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.

41. 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.

42. 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. In 2017, an estimated 58.6 per cent of people lived in rural areas, and over 90 per cent of them were below the poverty line [50][50]. 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.

43. Overall, the impacts of climate change and variability in Mali, including droughts, floods, rising temperatures, and later onset of rainy seasons, present a challenge to the country?s efforts to stabilize, recover from crisis, and prosper. While Mali might not experience dramatic changes to its climate in the coming decades, the country?s fragility, its dependence on climate-sensitive sectors such as agriculture, its history of tensions and conflicts between resource-user groups and between pastoralists and the government, along with its low levels of development, make it highly vulnerable to this process.[51][51]

44. Throughout the S?gou 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. Satellite analyses for 2019, 2020 and 2021 show a correlation between the dynamics of a reduction in cultivable areas compared to 2016-2017, and the expansion of insecurity, particularly in the centre. In the regions of Mopti and S?gou, almost 254,000 people

are affected by this reduction in cultivated agricultural land (7% and 2% of the populations of Mopti and S?gou respectively)[52][52].

45. 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.

46. 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 financers 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 to limited investments in community agro-forestry and livestock management and climate-resilient agriculture will be addressed and GEF resource use to address the other barriers to avoid duplication.

1a3. Baseline scenario and any associated baseline projects

47. 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 (UNFCC) National Determined Contribution, Biodiversity convention, and National Policy on Climate Change.

48. 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.

49. 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.

50. 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 % annually, slightly below the national rate (3 %). 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.

51. 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.

52. 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.

Associated baseline projects

53. 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. The following baseline projects will provide co-financing

for the proposed project and thus the proposed GEF LDCF 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 2:

? IFAD project interventions have enabled the implementation of actions that are anticipated to contribute to environmental sustainability and climate resilience. Indeed, thanks to the ASAP funding , the Project for the Improvement of Agricultural Productivity in Mali -PAPAM has been able to distribute bio-digesters, finance solar kits, and develop a more integrated approach that allows for wood savings, reduced GHG emissions, soil improvement, and fertilizer chemical substitution through the use of biodigesters. A following project, MERIT will scale up the successes of ASAP/PAPAM (dissemination of the biodigester/photovoltaic nexus, and implementation of municipal adaptation plans.) in the four southern regions of Mali, capitalizing on the power nexus transformational.

? In addition, the Government has stressed the need to capitalize on the gains of the ongoing IFAD-funded Joint Programme for the Sahel in Response to the Challenges of COVID-19, Conflict and Climate Change (SD3C-MLI) and other past and ongoing investments. This GEF-7 project offer an opportunity to complement and enhance the main baseline IFAD investments and other existing projects in the medium and long term on SLM and LDN.

Table 2: 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 bio-digesters; 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?s) 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
PIF/GEF/UNDP Climate security and sustainable management of natural resources in the central regions of Mali	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.	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.	2026	6.092.694

Gourma elephant project, Mopti	#9661 UNDP: Community-based natural resource management that resolves conflict, improves livelihoods and restores ecosystems throughout the elephant range (Timbuktu, Mopti)	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	2019/2025 GEF/UNDP	4.1 million
GE DEFOR III/PCVA	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.	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	2018/2023	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.

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	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.	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.	2028	228 million USD

Integrated Climate Risk Management Sahel	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)	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)	2028	143,327million USD
	TOTAL (of which approx. US$9 million is expected to contribute to co-financing)			

? To achieve these objectives, The Governement of Mali is committed to combat the level of land degradation in the country for national development and for maintaining and improving environmental integrity and ecosystem functions and services. It has sought to do this through interventions in specific regions to reflect environmental concerns, particularly those related to land degradation. Therefore, the GEF support will reinforce and support the main objectives of the IFAD baseline:

? *Programme for fostering agricultural productivity (PAPAM):* the project development objective focusses on increasing agricultural production and productivity of key selected production systems based on sustainable land and water management practices in selected priority areas. PAPAM also aims to increase smallholders' resiliency to climate change. PAPAM's implementation was organized around three components: I agricultural technology transfer and service provision; (ii) irrigation infrastructure; and (iii) a comprehensive programmatic strategy and sectoral monitoring. The external resources mobilized for PAPAM's financing total 168.1 million dollars, with the following breakdown: I USD 41.5 million from the International Fund for Agricultural Development (IFAD); (ii) USD 70 million from the World Bank; (iii) US$6.2 million from the Global Environment Fund; and (iv) USD 19.5 million from the European Union.

? *Multi-Energy for Resilience and Integrated Territorial Management (MERIT):* the development objective is the sustainable improvement of access to renewable energy sources and soil productivity. It will promote the resilience of ecosystems toward climate change through the promotion of low emission energy sources. The project will be implemented from 2019 to 2027 with a total cost of US$50.8 million. The financing plan is as follows: IFAD for a total of US$30 million, 59% of the total cost; the GEF for a total of US$2 million corresponding to 3.9% of the total; a 11% gap for environment and climate financing; a funding gap of US$3.8 million corresponding to 7% of the total cost; beneficiaries for US$4.5 million corresponding to 9% of total funding and the government for US$4.9 million corresponding to 10% of the total cost. MERIT?s interventions are built around two components and four subcomponents focusing on the promotion of the biodigester nexus and the resilience of production systems and integrated terroir management.

? *Joint Programme for the Sahel in Response to the Challenges of COVID-19, Conflict and Climate Change (SD3C-MLI):* implemented on a six years period (2021-2026) in two phases of three (3) years. The first phase scales approaches already proven and especially in the areas of intervention most weakened by the conflicts, the second will make it possible to systematize the most effective systems with regard to lessons learned from the first phase. In order to reduce the effects of the COVID-19 crisis, conflicts, and climate change, the SD3C initiative aims to increase the resilience of the most vulnerable rural populations in the Sahel region. Its development purpose is to improve the living conditions of small producers, particularly women and young people living in cross-border areas. It promotes the use of sustainable manufacturing processes and approaches to social cohesiveness. The program is structured around two technical components, for increased productivity and production then economic integration. All planed activties have a special focus on gender and youth issues. With a total cost of US$44 million including parallel financing from the GCF, IFAD will finance US$23.685 million or 100% of the total cost of the first phase.

? Other projects financed in Mali through climate funds:

- Strengthening Resilience to Climate Change through integrated Agricultural and Pastoral Management in the Sahelian zone in the Framework of the Sustainable Land Management Approach, funded by the Least Developed Countries Fund (LDCF) for $US 2.2 million
- Flood Hazard and Climate Risk Management to Secure Lives and Assets in Mali, financed by the LDCF for $US 8.9 million
- Strengthening the Resilience of Women Producer Groups and Vulnerable Communities in Mali, financed by the LDCF for $US 5.6 million
- Readiness Programme Support, financed by the Green Climate Fund (GCF), for $US 0.3 million
- Strengthening Climate Resilience in Sub-Sharan Africa: Mali Country Project (Africa Hydromet Program), financed by the GCF for $US 22.8 million
- Programme Support for Climate Change Adaptation in the vulnerable regions of Mopti and Timbuktu, financed by the Adaptation Fund (AF) for $Us 8.5 million
- Promotion Sustainable Electricity Generation in Malian Rural Areas through Hybrid Technologies, financed by the GEF5, for $US 1.2 million

? Regarding the GCF, Mali, in particular, is one of the top 10 sub-Saharan African countries to profit. From 2003 and 2018, knowing that 33 projects were authorized for funding.for a total of US$991.6 million in this region. IFAD may be able to deploy resources more resources from the GCF, which will be used to supplement its future funding. In the COSOP 2020-2024, additional investments are envisaged. Indeed Mali is included in two IFAD regional programmes submitted to the GCF, one of which focuses on climate risk financing to increase smallholder farmers? resilience to climate change impacts and the other on inclusive green finance (IGREENFIN). The Mali Climate Fund (FCM) was established in 2012 with the goal of being "an essential tool for mobilizing, accessing, ordering, and combining domestic and international, public and private finance for priority actions aimed at achieving Mali's ambitious goal of a Green Economy and Climate Resilient." It will also contribute to the attainment of the Sustainable Development Goals, whose achievement is strongly influenced by climate changes." The FCM's funding envelope was anticipated to be USD 35 million between 2013 and 2020, with agricultural accounting for 79 percent of the 14 projects in its portfolio from 2014 to 2018, followed by energy (14%), and forestry (7%). Furthermore, even if a project can contribute to both adaptation and climate change mitigation, the GCF funded more adaptation projects (80%) than mitigation projects (20%) between 2014 and 2018.

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

? The baseline scenario identifies several key technical, financial, policy and regulatory obstacles to investing in climate resilient actions in the agro-silvo-pastoral, agroforestry and fishery sectors of the Central regions of Segou. Climate change also exacerbates the baseline scenario by posing a significant risk to the selected value chains production and livelihoods, potentially causing reduction in productivity, food production systems and therefore significantly influencing climate migration patterns and fuelling tensions and conflicts in Mali. To address these underlying constraints, **the objective of the proposed project** is to reduce the vulnerability of communities in the Central regions of Segou to the risks posed by climate change through the adoption of climate smart agro-silvo-pastoral and fish farming practices in Segou.

? This project will address anticipated potential future climate scenarios by adopting an integrated climate management approach in the Central regions of Segou. The integrated project approach considers the complexity of interactions between humans and ecosystems within agro-silvo-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 of Segou 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 interventions will also indirectly address non-climatic stressors as outlined in the barrier analysis.

? Geographic targeting will be determined as follows: i) availability of a reliable source of land and water for livestock and irrigation (preferably also both for human and animal consumption); ii) the level of land, forest and watershed treatment, with high priority given to untreated ones; iii) willingness of communities to participate in the land, forest and watershed management (public good) investments. Priority will also be given to Segou areas with higher food and nutrition insecurity and poverty levels.

? The project targets different interventions in the Central regions of Segou, such as agro-silvo-pastoralist areas, watershed areas, agro-ecological zones, and dam areas or water basins. The activities will focus on agriculture, horticulture, fishing, and pastoral production. These Central regions of Segou have faced environmental degradation due to population growth, settlements, unsustainable agricultural/horticulture production systems and livetsock practices that degrade soils and water and siltation to name a few. 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. Priority beneficiaries will be: a) rural smallholder farmers involved in subsistence agriculture, horticulture, fishery and small livestock keeping; b) farmers and youth interested in establishing farmers? associations or cooperatives or pioneer small and medium enterprises (SMEs); c) women, especially woman-headed households, and households with young (0-5 years) children, with priority to malnourished children; and d) youth (18-35 years), including demobilized soldiers. The project will ensure adequate monitoring systems to address potential overlap of beneficiaries with ongoing IFAD projects and other similar development projects in the respective target Segou areas.

? Adopting an integrated climate management approach to address land degradation in Segou regions is however constrained by institutional and organizational capacities of relevant stakeholders to integrate climate resilience approach in agroforestry production systems; lack of access to financing to foster integrated climate resilience into planning and production; limited knowledge of the practice of climate dependent or rain-fed agriculture as well as limited investments in community agroforestry and livestock management and climate-resilient agriculture. To overcome these barriers, the project will support the creation of an enabling institutional and policy environment for enhancing resilience to climate change of rural communities under **component 1**; develop and implement integrated approaches to climate change adaptation and community-based natural resource management through **component 2**; Acquire systems, tools and instruments required to develop the resilience of vulnerable communities to climate change in **component 3**; and knowledge management through which lessons will be disseminated to stakeholders to inform scaling up and replication of good practices (Knowledge management, monitoring and evaluation, and dissemination of results under **component 4**. Through specific activities under each of these components, the project will support the shift towards climate-resilient planning and more diversified livelihood options in the Central regions of Segou. The rationale and justification that underpin the Theory of Change are influenced by the country?s social-ecological context (see Annex A.2 for the Theory of Change).

54. 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.

55. 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.

56. 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.

57. 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.

58. 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.*

59. These four components are presented below in terms of outcomes, outputs and activities:

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

60. To ensure the effective implementation and sustainability of the project, further capacity development is required for the relevant government agencies in charge of climate change adaptation, from policy development to project execution. This component will focus on strengthening institutional capacities of government bodies (AEDD, ministries of the environment, Ministry of Planning) in climate resilience approach in agro-silvo-pastoralism and agroforestry production systems in the targeted Segou regions. The details of the trainings will be decided in collaboration with the staff of the ministries at project start-up. The project will focus on the following outputs and activities:

? Under **output 1.1**, the project will provide capacity-building on technological enhancement methods and measures to overcome the lack of information on climate risks and limited capacity to integrate climate information into development planning. This will enhance institutional capacity on sustainable agricultural and forestry productivity, support equitable increases in farm incomes and food security and adapt and build the resilience of the crop, livestock, forestry and fishery sectors to climate change at multiple levels, especially at communal level. This output will be ensured through the following activity.

o **Activity 1.1:** Training of 500 staff from technical institutions in the use of the Institutional Adaptation to Climate Change guidelines

61. This activity will target building technical capacities of 500 staff from relevant institutions in the ratio of 50% men and 50% women to strengthen 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 through the knowledge to use the Institutional Adaptation to Climate Change guidelines.

? Under **output 1.2**, the project will provide technical assistance for improved policy frameworks to mainstream climate change risks into communal planning. This will strengthen and build the capacity of key technical institutions and communes to better plan and mainstream climate change projections into planning and build resilience. This will expand learning and strengthening institutional memory among county-level and communal level planners on how to apply climate information to planning processes, improve fund management, and enhance guidance on selecting and implementing appropriate adaptation measures. This output will be realized through the following activity

o **Activity 1.2**: Development and mainstreaming of two Communal Land Use Plans that mainstream Climate Change for Segou

62. This activity will support more tailored interventions in communal land use plans that are more responsive to the impacts of climate change in the region of Segou. In this regard, development

initiatives will take account the environmental challenges related to the impacts of climate change ? both the current and those projected to happen.

? Under **output 1.3**, the project will track its contribution to the changes relative to the climate change baseline scenario in the selected Central regions of Segou and the whole country to contribute to achieving the national climate related agenda (NDC). This output will provide support to the mainstreaming of climate change into local communal Investment Plan. This will be critical in understanding and assessing the country?s performance in terms of implementing NDC activities and honour the Government?s commitment to reduce GHG emissions in the agriculture and land use and land-use change and forestry (LULUCF) sectors by 29% and 21%, respectively[53][53]. Activities along with their indicators in Component 2 and 3 will focus on verifying the project?s contribution to the country?s NDC targets as they intend to manage natural resources sustainably and maximize synergies between adaptation and mitigation measures. The assessment of national performance will be critical at three levels: national report to the UNCCD; to support, stimulate and prioritise investments in a green and climate resilient economy in the country; and to integrate lessons learned in SLM and SFM practices across the country in support of the NDC committment. The project will build on the already existing National NDC Committee, National Committee on Climate Change, Ministry of Environment, Ministry of Finance, the Ministry of Foreign Affairs and development partners and capacity development for NDC under this project will be ensured. This output will be ensured through the following activity

o **Activity 1.3 Mainstreaming** Climate Change into local communal Investment Plan to support the implementation of the national climate related agenda (NDC) and other convention related commitments)

63. Building on activity 1.2, activity 1.3 will go a step further to target Communal Investment Plans to support the national-level climate change agenda, particularly the NDC and other UNFCC country-related commitments. It should be noted targeting Communal Investment Plans will also facilitate the involvement of different stakeholders in the climate change agenda and aspirations in the country, including the private sector.

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

64. This component focuses on community-based adaptation strategies and interventions in the Segou regions to promote integrated climate resilient and sustainable agroforestry and agro-silvo-pastoral type of business models that will strengthen climate resilience of women and youth groups, reduce pressure on natural resources and contribute to sustainable agricultural and rural livelihood development through income diversification. Threats posed by climate change and variability, deforestation, bush fires, overgrazing and agro-silvo-pastoral activities expansion will be addressed along the agricultural and forestry value chains through the adoption of more effective and resilient adaptation practices. This is an alarming situation since these value chains are climate dependent or rain-fed agriculture, which rainwater is the main water source for a large majority of small scale farms in the Segou regions. Farmers Field Schools (FFS) will be used to transfer these integrated climate resilient and sustainable agroforestry approaches to local communities and

promote the adoption and implementation of adaptation practices and technologies to address droughts, desertification and climate change, increase knowledge and capacity to foster the resilience through sustainable land and agroforestry practices. In addition, the frequent occurrence of extreme weather events is expected to increase the occurrence and affect the patterns of zoonotic and vector borne diseases in agro-silvo-pastoral production in Segou regions. FFS will also be used to build smallholder farmers? capacity and knowledge on occupational safety and health, particularly in the context of COVID-19 (e.g. human health of people who produce and process food and threats to their health related to climate change and environmental degradation). 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 and activities of component 2 are summarized below:

? **Under output 2.1**, the project will support the provision of adapted and improved seeds among producers to promote the growing of climate resilient native (local) species. Farmers? knowledge and high-tech breeding to improve crops can be effectively combined to unlock more resilient and nutritious food supplies in the face of climate threats. According to a 2020 research on the ?Seeds for Needs? approach, involving farmers in crop improvement enhances the chance that new varieties will be adopted, making crop improvement more efficient. Output 2.1 will be ensured through the following activity:

o **Activity 2.1**: Producing climate resilient species, essences and seeds on 800 ha to be distributed by 1,500 beneficiaries to support the climate resilience agricultural production systems by sustainably intensifying production

65. This activity will have two-fold benefits at the level of increasing the adaptation capacity of 1,500 households who will be involved in the production and distribution of climate resilient species, essences and seeds, but also improving the production capacity of 800 ha of land through sustainable intensification production system. Therefore, this activity will contribute to increasing the resilience of the socioecological system of rural communities in Segou.

? **Under output 2.2,** the project will 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). Community seed banks can enhance the resilience of farmers, in particular of communities and households most affected by climate change. It can also secure improved access to, and availability of, diverse, locally adapted crops and varieties and enhance related local and indigenous knowledge and skills in plant management, including seed selection, treatment, storage, multiplication, and distribution. This output will be ensured through the following activity:

o **Activity 2.2**: Domestication of local species with high commercial and medicinal value on 2,500 ha by 1,500 direct beneficiaries and 10,000 indirect beneficiaries using agro- ecological horticultural practices to sustainably increase food security (at least 50% women).

66. Considering the ecological context and environmental affordances in Segou, this activity will also contribute to increasing the capacity of communities to the impacts of climate change ? like activity 2.1. However, this activity will focus on local species with high commercial and medicinal value species to directly benefit 1,500 people and an additional 10,000 indirect beneficiaries. In

this regard, the activity will use local species with high commercial and medicinal value species on 2,500 ha to support livelihoods while simultaneously improving the ecological context in Segou.

? **Under output 2.3,** the project will promote the adoption of sustainable, biodiversity-friendly agroforestry activities to improve farmers? productivity and their capacity to sustainably manage their land. This will integrate a high level of diversity of crops and animals to create synergies, resource use efficiency, and recycling of water, nutrients, biomass and energy. It also shows a solid starting point from which IFAD can continue to build its experience in supporting governments, small-scale producers and their communities in transitioning towards integrated agroecological farming systems. Output 2.3 will be ensured through the following activity:

o **Activity 2.3**: Promoting concrete agro-ecological measures to address the effects of drought, desertification and climate change on 1,800 ha by 1,000 farmers through FFS to support the climate resilience of agro-ecological production systems ? with 50% women and 50% men involvement.

67. Recognizing the critical role of both men and women, this activity will strengthen and ride on local organisational structures, namely the Farmers Field Schools involving 1,000 farmers to promote agro-ecological practices on 1,800 ha of production landscapes ? benefiting both rural communities and the environment. The activity will therefore, reinforce community-level led efforts to respond to the challenges of climate change in production landscapes in Segou, acknowledging the roles of both men and women in building the resilience of socioeconomic and environmental context in the project area.

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

68. With regards to agricultural and forestry value chains management, the lack of adequate systems, tools and instruments for better access to markets, credit and information is a challenge to efforts to stabilize and increase farmers? income in the face of climate change. Numerous other factors constrain smallholder farmers in the process of development of commercialization such as technology constraints that exist both at the production level and through processing and distribution systems as well as poor infrastructure constraints. These are crosscutting issues in each of the agricultural and forestry value chains in Mali. This component will therefore focus on creating competitive agricultural and forestry value chains and increasing linkages along the value chain rather than on production. Smallholder farmers/producers require greater prominence and influence in the value chain, as currently across the key chains targeted in Segou regions, the production end of the chain is invariably the least profitable. The capacity of the targeted beneficiaries will necessarily be strengthen for the project to successfully develop and sustain commercial agro-silvo-pastoral production and fish farming. Access to climate information will be key to enhance the much needed skills and technical knowhow to achieve efficiency in the process of the targeted commodities flow at various levels, which really contribute to value additions. The project will also support the vertical networking of the value chain system. This will result in low risk for overall supply in the event of crop failure, ensure income diversification as well as more flexible agricultural and forestry production portfolios of smallholders together with higher quality of products and greater dependency of the smallholders on the production part. The outputs and activities of component 3 are summarized below:

? **Under ouput 3.1,** the project will support the organizational capacity of farmers to develop and manage surface water retention basins, runoff catchment systems (BCER), animal drinking areas and

canalization. Better organization of community is imperative, particularly for the poor farmers in Central regions of Segou to achieve optimum scale of operation. Farmer organizations and cooperatives have been found to be organizationally very fragile and lasting only as long as the project duration. Reasons leading to failure of farmer organizations/cooperatives are attributed to lack of information, lack of trainings in self-organizations, contraints posed by financial resource scarcity, among others. With regards to infrastructure, low productivity in agriculture and livestock is linked to water availability. Addressing the risks of current and future climate change to water supply, agricultural and livestock productivity are therefore critical in enhancing resilience. The unsustainable management of water resources is the major factors aggravating the impacts of climate change in the targeted Segou regions. Crop pests and water-borne diseases are common, often caused by poor farm management and the absence of water and sanitation/canalization infrastructures. Therefore, the following activity is expected to improve the baseline scenario.

o **Activity 3.1: Strengthening** organizational capacities of 2,500 farmers (at least 50% women) from 50 communities are to address issues related to climate impacts on value chains development

69. This activity will focus on building capacities of smallholder crop farmers and pastoral households through training sessions and programs so that they are capacitated enough to manage better the impacts of climate change and climate variation on important value chains. The activity will ensure an equal inclusion of both men and women at 50% each gender.

? **Under ouput 3.2,** the project will support integrated market gardening areas to increase in production, increase the income of vulnerable women and youth, improve households nutritional status and above all, improve health. An integrated market gardening will add value to the Segou regions from agro-ecosystem services and maintaining annual crop income while also accruing perennial returns in the form of ever-enhanced ecosystem goods and services to the whole farm. This practice conserve/add organic matter, improve soil life habitat and encourage natural nutrient fixation, storage and cycling. Output 3.2 will also operationalize best climate practices for agro-silvo-pastoral systems and fish farms, including afforestation, reforestation, agroforestry, conservation and restoration of degraded areas. Depending on land suitability, stocking density, and other factors, agro-silvo-pastoral systems have the potential to improve productivity, reduce soil erosion, and improve nutrient and water use efficiency. Agro-sylvo-pastorism could also indirectly enhance resilience and land-based climate change mitigation by reducing grazing pressures elsewhere. It increases land productivity with the establishment of fruit trees, supports land conservation by limiting livestock to certain areas, reduces water runoff, and improved soil moisture and water retention (especially in areas on high slopes. For example, the integrated orchard with pastureland and fodder production is partially fenced to hinder livestock grazing. Trees are regularly pruned, while the pasture serves as feed for the livestock, with any remaining grass used as cut-and-carry fodder. Therefore, mixed cropping diversifies production, which helps farmers to reduce risk, respond to changes in market demand and adapt to external shocks, including climate change. Rotating or associating nutrient-demanding crops with soil-enriching legumes, and shallow-rooting crops with deep-rooting ones, maintains soil fertility and crop productivity and interrupts the transmission of crop-specific pests and diseases. Furthermore, the contribution of fish farming to food and nutrition security in the project area will strengthen food production systems and income diversification in the Central regions of Segou. This output will be ensured through the following activity:

o **Activity 3.2:** Appropriate technical tools and integrated approaches to climate change adaptation are adopted by 2,500 beneficiaries (at least 50% women) in 30 communities.

70. Activity 3.2 will build on activity 3.1 to ensure that beyond training programs and sessions, participants adopt appropriate technical tools and integrated approaches. It should be noted that in this way, communities will not only have knowledge from training sessions, but that they will also have concrete interventions on the ground that will sustainably build their resilience and capacities for adaptation.

? Under **output 3.3**, the project will facilitate a better access to climate information generated by national institutions for decision making and selection of the right adaptation measures to climate change. To better anticipate and respond to extreme weather events and climate change in Segou regions foregrounding of local and indigenous knowledge systems, the project will improve climate services delivery for agriculture and disaster risk reduction through capacity building on climate risk management so national institutions can better analyse and monitor the changes in the status of natural resources and the implementation of environmental and social safeguard measures on the field. This output will ensure sustainability of activities and improve the lives of vulnerable populations through enhanced access and understanding of high-quality, action-oriented climate services and policies supporting mainstreaming of climate services in development and adaptation planning. Output 3.3 will be ensured through the following activity:

o **Activity 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**.**

71. Climate information is important in facilitating decision making regarding livelihood options. Activity 3.3 will therefore focus on providing and ensuring access to climate and weather-related information by strengthening the capacities of relevant institution. To further improve and enhance the access to information, the activity will support information availability in the local languages.

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

72. This component intends to facilitate the KM of the project as well as support the project team in accessing the necessary resources to plan and implement adaptation measures. The expected outcome is that best agro-ecological, community-based climate change adaptation and climate risk reduction practices are collected, and disseminated in the Segou regions and beyond. This component will serve as a foundation for replication of successes, provide the analytical basis to resolve challenges, and help to adapt activities to changing social and economic circumstances in the target areas. A KM action plan will be prepared to: a) identify knowledge gaps and prioritization of knowledge products to be developed; b) systematically document methods to ease the up-scaling of best practices in the Central regions of Segou or repackaging of innovative approaches developed elsewhere; c) disseminate knowledge using various communication tools (newsletter, brochures, websites, radio, FFS). Regular reflection workshops, drawing on M&E data to improve performance, will be held and information sharing mechanisms (internal and external) developed. Country exchange visits will also be integrated in the KM strategy.

73. In terms of M&E, the project will adopt a results-based management and check systematically the contribution of each planned activity to outcome achievement. The project?s M&E strategy will be to establish an iterative process for identifying issues and problems to ensure that the project focus

is maintained and expected outcomes are achieved. This will rely on data from periodic monitoring within the context of the operational M&E framework, and on specific thematic surveys, such as adoption, household and outcome surveys. This will guide the consolidation of input and output data provided by implementers and reporting on efficiency of implementation. Reports will provide information such as: a) overview of intervention activities undertaken in the last quarter and cumulatively over the fiscal year; and b) progress and outputs in terms of the agreed M&E indicators, provide lessons learnt, and knowledge gaps identified. The reports will also seek to identify any constraints encountered so as to seek guidance (where needed) from Project management for addressing the constraints. IFAD will also ensure that an M&E specialist is included in at least 1 mission per year.

74. In regards to dissemination of results, communication remains a new area for the Segou regions and the country in general where results and success stories are rarely published in the media. The project will develop a strategic communications plan for targeted groups, general public and donors? oriented communication products. To ensure quality communication material, trainings on media-related activities and equipment will be purchased. The strategic communication together with KM will be used to increase the familiarity among target audiences with IFAD projects by raising awareness about the results achieved through IFAD?s investment, in addition to document best practices and lessons learned. The main outputs and activities of this component are as follow:

? **Under output 4.1**, the project 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. This will assemble, curate and facilitate use of key KM tools and approaches for use in the project business processes. This output will be ensured through the following activity:

o **Activity 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 2,500 direct beneficiaries (at least 50% women) for adoption

75. Activity 4.1 will acknowledge the critical role of endogenous and exogenous knowledge and the gender dimension in building the resilience of rural communities to the impacts of climate change but also the elevated levels of post-harvest losses. The activity therefore, recognizes the importance of interfacing exogenous with endogenous knowledge patterns to build socioecological resilience, and improving post-harvest processing to reduce post-harvest losses which threatens food security in the target region. It should be noted that post-harvest losses lead to more land being cultivated, thereby exerting additional pressure on land. This is because communities have to produce more (not necessarily by improving land productivity per unit area, but by expanding the agricultural frontiers) to make up for the losses to ensure they have enough to consume.

? Under **output 4.2**, policy dialogue and consultations will be held throughout the project lifecycle to prepare a communication and an exit strategy. The project will develop a strategic communications plan for targeted groups, general public and donors? oriented communication products. Improved communication will be beneficial to support social inclusion awareness interventions planned under the project. The Project will scale-up good practices, selected through KM at national and local level. The project exit strategy will be embedded in the strategic approach of (i) working directly with administrative structures and community leaders at the Segou regions level; (ii) building capacity at the grassroots level; (iii) enhancing the focus of economically and financially sound solutions; and (iv) providing international technical assistance. The institutional framework within which the project will

be implemented will continue to exist after its completion and will have been considerably strengthened by the various capacity building activities included in the project. This output will be ensured through the following activity:

o **Activity 4.2:** Capturing the results of the project in an exit strategy for scaling with 1,800 direct beneficiaries and new 3,000 indirect beneficiaries (at least 50% women-headed and 30% youth)

76. The involvement of rural communities through participatory approaches in the project activities will be one of the anchoring mechanisms for project sustainability ? ensuring that communities are empowered with appropriate technologies and knowledge to continue beyond the life of the project. At community-level, this will have knock-on effects to influence and spur positive environmental behaviour vis-?-vis adaptive capacities and coping mechanisms at household and community levels. Therefore, this activity will focus on capturing results to inform household and community-level decisions for resilience building and capacities for adaptation. The involvement of the youth will ensure the intergenerational transfer of knowledge and capacities that will be gained from the project.

? Under **output 4.3**, the project will provide trainings on IACC approaches and Social and environmental safeguard measures to better manage climate risk in the Segou region. In carrying out its ToC of promoting a paradigm shift towards climate-resilient development pathways in the context of sustainable development, the project will contribute to effectively and equitably manage environmental and social risks and impacts and improve outcomes of all its activities. This output will be ensured through the following activity:

o **Activity 4.3:** Training of 100 journalist and 200 community leaders, 1,000 lead farmers in Institutional Adaptation to Climate Change approaches, and resilience building, and identification and management of 10 Social and environmental safeguard measures

77. Capacity development of journalists, community leaders and lead farmers in Institutional Adaptation to Climate Change approaches, and resilience building will be part of the overall approach to ensure integrated leadership development to drive the adaptation and resilience building agenda in Mali and in Segou in particular through this project. These targeted groups have a critical role in scaling up and disseminating best practices within other communities in Segou and in other regions in Mali. The development of capacities of the afore-mentioned targeted group will eventually facilitate the identification and management of 10 social and environmental safeguard measures.

78. Since the government led and validated the NDC commitments, and has demonstrated commitment to the fight against land degradation and climate change through various national policies, the project assumes that there is enough political will to mainstream and implement the NDC agenda through SLM and SFM in the country. Stakeholder and political will are therefore assumed to be maintained throughout project implementation. It is also assumed that there will be an active community participatory engagement, which will lead to project ownership. Communities are expected to support and be involved in the decision-making processes that will lead to the identification and promotion of appropriate integrated approaches to climate change adaptation and community-based natural resource management. Additionally, the project is also cognizant of social, economic, political and environmental risks, which it has duly considered in the course of its development. These will be closely considered and monitored in the implementation phase. COVID-19 and weather events are also expected to not disturb project activities to erode the

impacts of the project. In addition, to address the impact of COVID on ongoing and future IFAD investment, the IFAD Rural Poor Stimulus Facility (RPSF) proposal will 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.

79. The Theory of Change (ToC) summarized in Annex A.2 illustrates how the proposed interventions described above are expected to combine to yield maximum results and increase the target communities resilience to climate change. In a nutshell, the theory of change recognises that if enabling an institutional environment for an integrated landscape approach to climate change adaptation and community-based natural resource management by smallholders is improved, in conjunction with implementation support and capacity-building for all stakeholders, as well as greater coordination, M&E and KM of these investments across the target countries then climate resilience, food security, job creation and the livelihoods of smallholder farmers and rural communities across the Central regions of Segou will be enhanced because barriers to land degradation and climate change have been removed, thus contributing to the country? efforts to reduce GHG emissions by 29% from agriculture and land use and by 21% from LULUCF, as per its NDC targets for 2030.

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

80. Mali has witnessed years of political fragility that has had ripple effects on the country?s socioeconomic situation. The vast majority of Malian rely on climate-sensitive sectors such as agriculture within a context of historical tensions and conflicts among resource-user groups, including pastoral communities. The Government of Mali has made considerable progress in drafting climate change policies and strategies, identifying adaptation priorities and starting a process for greening its national development plans. The Table[54][54] below highlights priority areas of actions, detailed in the country?s National Adaptation Programmes of Action.

Table showing order of national adaptation priorities

Priority order	Priority adaptation options
1.	Adoption of crop varieties, animal and plant species improved and adapted to climatic conditions
2.	Diversification of sources of income (income-generating activities income: market gardening, fish farming, micro credit)
3.	Creation of cereal/seed banks
4.	Agro-meteorological advice and induced rains

Priority order	Priority adaptation options
5.	Construction of hydraulic micro-dams and development of plains, valleys, lakes and ponds
6.	Drilling boreholes equipped with solar or wind pumps
7.	Promotion of butane gas and alternative fuels to wood energy
8.	Capture of runoff water and restoration of water points (backwater, ponds and lakes)
9.	Information and awareness of the populations living near the courses of water against housing construction and water pollution
10.	Raising awareness, regulation and organization of populations for the preservation of natural resources (development of local reforestation and agroforestry conventions)
10.	Fight against bush fires
12.	Adoption of CES/DRS cultivation techniques
12.	Popularization of composting techniques
14.	Promotion and conduct of regeneration of fodder species
15.	Development of a technological training package for populations with simple practices for adapting to change climatic
16.	Promotion of intensive farming
17.	Promoting jatropha oil
18.	Monitoring climate-sensitive diseases

81. However, integration of climate risks across sectors, including agriculture, livestock, water, health, and energy, remains weak. National Climate Action Plan initiatives focus on strengthening institutional capacities to implement adaptation strategies at the national, regional, and local levels, recognizing the need to build the capacity of local governing entities and speed up the decentralization process initiated many years ago. Making the agricultural sector more resilient,

including pastoral and fisheries sector remains important though has, hitherto, received much less attention.[55][55]

82. It is within this context of different debilitating socio-economic, political and environmental factors that this project has been designed to address the institutional capacity inadquancies, limited alternative livelihoods to build and strengthen the resilience of the vulnerable community members, constrained community adaptive capacities and limited application of agroecological practices in production systems. Also, the project is designed within and to complement the government efforts to implement priority adaptation actions in tabulated above.

83. 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 socio-ecological systems in Mali. The project is consistent with Mali?s priority adaptation options but also fully aligned with the LDCF programming strategy as summarized in the Table below. Thus, this project is an opportunity that builds on Mali?s position to implement concrete actions to adapt to the impacts of climate change by implementing urgent and most immediate needs to better adapt to climate change.

Table: project alignment with LDCF programming strategy

LDCF objectives	LDCF outputs	Proposed LDCF project outputs contributing to LDCF outputs

LDCF objectives	LDCF outputs	Proposed LDCF project outputs contributing to LDCF outputs
1: Reduce vulnerability and increase resilience through innovation and technology transfer for climate change adaptation	1.1.2: Livelihoods and sources of income of vulnerable populations diversified and strengthened 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	**Output 2.1.1**: 800 ha under climate resilient species, essences and seeds produced and distributed to 600 beneficiaries to support the climate resilient agricultural production systems by sustainably intensifying production **Output 2.1.2**: Local species with high commercial and medicinal value domesticated on 2,500 ha by 1,500 direct beneficiaries and 10,000 indirect beneficiaries using agro- ecological horticultural practices to sustainably increase food security (at least 50% women). **Output 2.1.3**: Concrete agro-ecological measures to address the effects of drought, desertification and climate change are promoted on 1,800 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 3.1.1:** Organizational capacities of 2,500 Farmers (at least 50% women) from 30 communities are strengthened to address issues related to climate impacts on value chains development**.** **Output 3.1.2**: Appropriate technical tools and integrated approaches to Climate change adaptation are adopted by 2,500 beneficiaries (at least 50% women) in 30 communities. **Output 3.1.3:** Capacities of 10 national institutions are strengthened to produce and disseminate real-time climatological, and hydro-meteorological information and services including in accessible language
2: Mainstream climate change adaptation and resilience for systemic impact	2.1.1: Development / sector policies and plans integrate adaptation consideration 2.2.2: Adaptation and resilience relevant financing coordinated for synergistic programming including with the private sector	**Output 2.1.1:** 800 ha under climate resilient species, essences and seeds produced and distributed to 1,500 beneficiaries to support the climate resilience agricultural production systems by sustainably intensifying production **Output 2.1.2:** Local species with high commercial and medicinal value domesticated on 2,500 ha by 1,500 direct beneficiaries and 10,000 indirect beneficiaries using agro- ecological horticultural practices to sustainably increase food security (at least 50% women). **Output 2.2.3:** Concrete agro-ecological measures to address the effects of drought, desertification and climate change are promoted on 1,800 ha with 1,000 farmers through the FFS to support the climate resilience agro-ecological production systems by sustainably intensifying production (disaggregated by gender 50 % women).

LDCF objectives	LDCF outputs	Proposed LDCF project outputs contributing to LDCF outputs
3: Foster enabling conditions for effective and integrated climate change adaptation	3.1.1: Systems and frameworks established for the continuous monitoring, reporting and review of adaptation 3.2.1 Capacities strengthened to identify, implement and/or monitor adaptation measures	**Output 3.1.1:** Organizational capacities of 2,500 Farmers (at least 50% women and 30% youth) from 30 communities are strengthened to address issues related to climate impacts on value chains development. **Output 3.1.2:** Appropriate technical tools and integrated approaches to climate change adaptation are adopted by 2,500 (at least 50% women and 30% youth) household beneficiaries in 30 communities. **Output 3.3.3:** Capacities of 10 national institutions are strengthened to produce and disseminate real-time climatological, and hydro-meteorological information and services including in accessible language.
	3.2.2: Increased awareness of climate change impacts, vulnerability and adaptation	**Output 4.1.1** 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 2,500 direct household beneficiaries for adoption (at least 50% women and 30% youth). **Output 4.1.2** The results of the project are captured in an exit strategy for scaling with 1,800 direct beneficiaries and 3,000 indirect household beneficiaries (at least 50% women-headed and 30% youth). **Output 4.1.3.** 100 journalist and 200 community leaders, 1,000 lead farmers trained on IACC approaches and resilience building and 10 Social and environmental safeguard measures are identified and managed.

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

and co-financing

84. 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.

85. 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.

86. With the additional financing from the LDCF, the proposed intervention will (i) develop the basic foundations for mainstreaming climate change adaptation across activities in the agro-pastoralists sectors; (ii) develop the tools and capacities for actually delivering in a cost-effective manner climate change support to vulnerable agro-pastoralist communities; (iii) directly deliver support to a sizeable number of agro-pastoralist communities; and (iv) ensure sustainability by integrating CCA into key policy initiatives and ensuring lessons are learnt and disseminated.

87. 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.

The Table below summarizes the incremental benefits of the project.

Without project intervention	With project
Understaffing with limited technical capacity in IACC	Training of 500 staff from technical institutions in the use of the Institutional Adaptation to Climate Change guidelines
Lack of Climate Change mainstreaming in Communal Land Use Plans	Development and mainstreaming of two Communal Land Use Plans that mainstream Climate Change for Segou
Lack of Climate Change mainstreaming in local communal Investment Plan to support the implementation of the national climate related agenda (NDC) and other convention related commitments	Mainstreaming Climate Change into local communal Investment Plan to support the implementation of the national climate related agenda (NDC) and other convention related commitments
Limited use of climate resilient species, essences and seeds in agricultural production systems in Segou	Producing climate resilient species, essences and seeds on 800 ha to be distributed by 1,500 beneficiaries to support the climate resilience agricultural production systems by sustainably intensifying production
No domestication of local species with high commercial and medicinal value in agro-ecological horticultural practices to sustainably increase food security and contribute to resilience building	Domestication of local species with high commercial and medicinal value on 2,500 ha by 1,500 direct beneficiaries and 10,000 indirect beneficiaries using agro- ecological horticultural practices to sustainably increase food security (at least 50% women).

Poor climate resilient agro-ecological production systems attributed lack of concrete agro-ecological measures to address the effects of drought, desertification and climate change	Promoting concrete agro-ecological measures to address the effects of drought, desertification and climate change on 1,800 ha with 1,000 farmers through FFS to support the climate resilience of agro-ecological production systems ? with 50% women and 50% men involvement
Weak organizational capacities of local-level institutions to address issues related to climate impacts on value chains development.	Strengthening organizational capacities of 2,500 farmers (at least 50% women) from 30 communities are to address issues related to climate impacts on value chains development
Limited to poor adoption of appropriate technical tools and integrated approaches to climate change adaptation	Appropriate technical tools and integrated approaches to climate change adaptation are adopted by 2,500 beneficiaries (at least 50% women) in 30 communities.
Limited capacity for production and dissemination real-time climatological, and hydro-meteorological information and services including in accessible language	Capacities of 10 national institutions are strengthened to produce and disseminate real-time climatological, and hydro-meteorological information and services including in accessible language.
Limited inclusion of endogenous knowledge in technologies to ensure climate resilient practices	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 2,500 direct beneficiaries (at least 50% women) for adoption
Poor data capturing to support climate change interventions	Capturing the results of the project in an exit strategy for scaling with 1,800 direct beneficiaries and new 3,000 indirect household beneficiaries (at least 50% women-headed and 30% youth)
Limited training of journalist and other key stakeholders to support dissemination and awareness-raising to support climate resilience within communities	Training of 100 journalist and 200 community leaders, 1,000 lead farmers in Institutional Adaptation to Climate Change approaches, and resilience building, and identification and management of 10 Social and environmental safeguard measures

1a.7. Adaptation benefits (LDCF)

88. 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 focus on strengthening the ability of the socioecological context of Segou to adapt to the impact of cliamte change and climate variability. In this regard, the project will lead to the following adaptation benefits summarized below for the socioeconomic and environmental resilience:

Table of Core Indicators highlighting adaptation benefits

Core Indicator 1 *(1,500 beneficiaries of climate resilient species, essences and seeds*	Total no. of direct beneficiaries: 33,900

produced; 1,500 direct beneficiaries Local species with high commercial and medicinal value; 1,000 farmer beneficiaries from concrete agro-ecological measures to address the effects of drought, desertification and climate change; 2,500 beneficiaries of appropriate technical tools for climate change adaptation; 2,500 direct household beneficiaries (or 14,500 individual beneficiaries) of endogenous and exogenous knowledge on best available technologies and climate resilient practices for production and post-harvest processing; and 1,800 direct household beneficiaries (or 10,400 individual beneficiaries) of the project?s exit strategy).	Male: 16,950 Female: 16,950
Core Indicator 2 *(800 ha under climate resilient species, essences and seeds; 2,500 ha under local species with high commercial and medicinal value; and 1,800 ha under concrete agro-ecological measures to address the effects of drought, desertification and climate change).*	Area of land managed for climate resilience (ha): 5,100
Core Indicator 3 *(Two Communal and land use plans mainstreaming Climate Change; and one local communal Investment Plan mainstreaming Climate Change to support the implementation of the national climate related agenda).*	Total no. of policies/plans that will mainstream climate resilience: 3
Core Indicator 4 *(500 trained on the use of the Institutional Adaptation to Climate Change guide (IACC); 2,500 farmers organizational capacity development; and 100 journalist and 200 community leaders, 1,000 lead farmers trained on IACC)*	Total number of people trained: 4,300 Male: 2,150 Female: 2,150

89. 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

90. The project innovates in several ways to build climate resilience of vulnerable rural communities and agricultural production systems in the central region of Segou. The project institutional driven approach is innovative in terms of climate change adaptation, particularly the activities for developing and mainstreaming climate change into land use planning at the local level integrating environmental challenges but also local communal Investment Plans, the capacity building activities tailored to national institutions to strengthen them in producing and disseminating climate and hydro-

meteorological information and services in accessible language. In addition to the innovation approach proposed in mainstreaming climate change into local planning and smallholder farmers? decision-making, the innovation also relies in the development of integrated market gardening areas that will add value and contribute to sustainable development i.e. economically (for instance income generation for vulnerable communities), socially (e.g. improved nutrititional status) and environnementally (through the promoted sound environnmentaly practices and climate-smart agricultural measures). Furthermore the dissemination and adoption of agro-ecological and climate resilient approaches through the Farmers Field Schools (FFS) will be one of the focus in terms of project intervention. 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.

91. A key aspect that will support sustainability is related to the project interventions in strengthening capacities of institutions, both at local and national level. At the local level, project sustainability could be illustrated through the development of communal land use plans in which climate change is well mainstreamed (output 1.1.2). To support the implementation of the national climate related agenda (NDC) and other convention related commitments, the project will also focus on climate change mainstreaming into local communal investment plans, which is fundamental in ensuring sustainability post-project (output 1.1.3). Sustainability aspects will be further reinforced through the training of staff from technical institutions on Climate Change Adaptation (output 1.1.1) and capacities strengthening of national institutions to produce and disseminate climate information services in accessible languages to local communities (output 3.1.3). Component 2 of the project will further contribute to the project sustainability, particularly from social and environmental viewpoints. This will be done through investments in climate resilient agricultural production systems by sustainably intensifying production (output 2.1.1) on the one hand, in agro-ecological horticultural practices to sustainably increase food security (output 2.1.2) on the other hand, and promotion of concrete agro-ecological measures to address the effects of drought, desertification and climate change (output 2.1.3). The sustainability will also rely on smallholder farmers ability to adopt appropriate technical tools and integrated approaches to climate change (output 3.1.2), and also through strengthening the organizational capacities of the smallholder farmers to address issues related to climate change impacts on value chains development (output 3.1.1).

92. The scaling up approach is closely linked to the sustainability one presented above. The scaling up will be ensured through the connection with national institutions, farmers organizations, community leaders, but also through the knowledge management and communication strategies. The endogenous and exogenous knowledge on best available technologies and climate resilient pratices for production and post-harvest processing will be identified and disseminated for adoption (output 4.1.). This dissemination will give to beneficiaries and other indirect recipients the required information to develop resilient production system in the future. Scaling-up will be facilitated by training journalist and community leaders on the IACC approaches and resilience building, but also identifying and managing environnemental safeguards measures (output 4.1.3). Capturing the project results in an exit strategy is also a key element that can contribute to the scaling-up potential (output 4.1.2). Demonstrating how important it is to mainstream climate change into land use and investment plans, but also capacitating small-scale farmers to adopt appropriate technical tools and integrated approaches to climate change will have important implications, even after the project closure. Most of activities will be organized for groups of agricultural producers, farmers organizations, market gardeners, etc., with a focus on those that are most vulnerable to the effects of climate change. This is an important point for others to replicate the best practices, which will contribute to the potential for scaling up of

the project. Overall, the area of land to be managed for climate resilience (ha) is 5,100 (see Indicator 2 in the 1a.7. Adaptation benefits section). However, the upscaling potential of the climate resilient management practices is 55,000 ha ? an appreciable level of scaling up potential given the level of funding for the project. That is, the project will provide a basis to enable additional efforts to achieve about 55,000 ha ? being managed for climate resilience in the project area. The efforts are in terms of an enabling environment that would constitute additional financing,[1] community adoption of sustainable production systems, appropriate institutional arrangement to support extension services, absence of pandemics such as COVID-19, among other factors.

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[17] Ibid.

[18] Also see ACMAD, 2020.

[19] World Bank. 2022.

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

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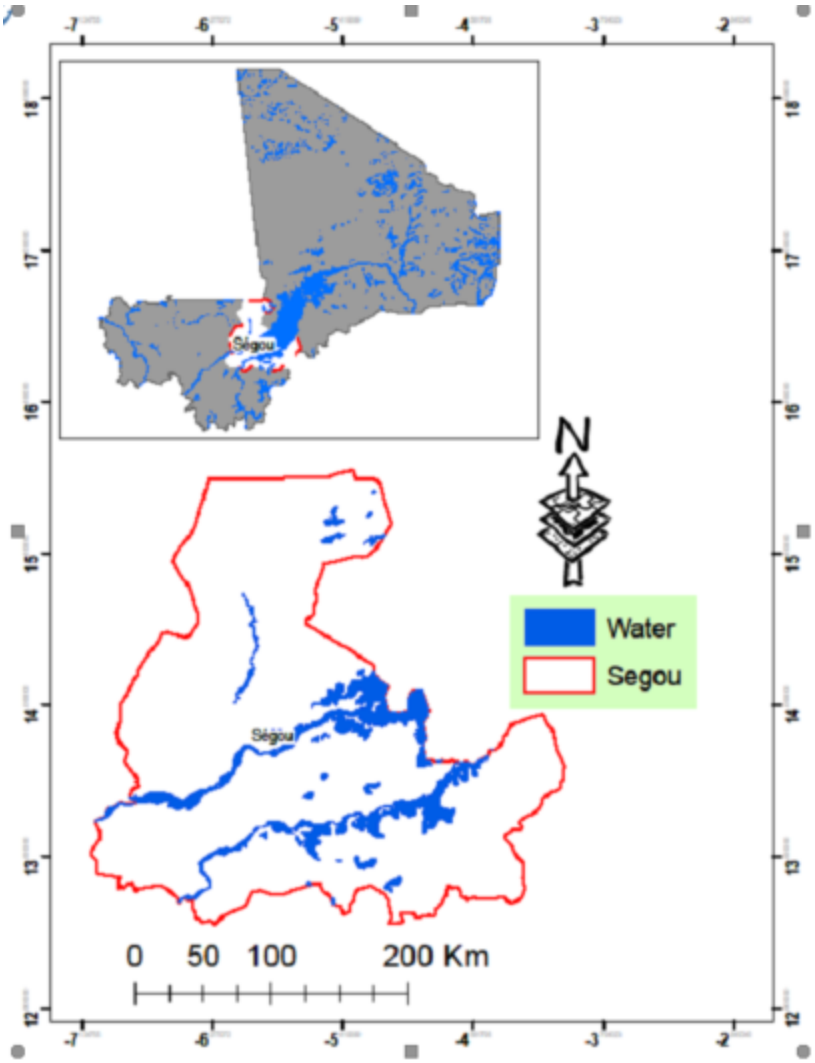
1b. Project Map and Coordinates

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



1c. Child Project?

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

2. Stakeholders

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

Civil Society Organizations Yes

Indigenous Peoples and Local Communities

Private Sector Entities Yes

If none of the above, please explain why:

Please provide the Stakeholder Engagement Plan or equivalent assessment.

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

1. The project recognises that addressing the multi-facetted nature of the impacts of climate change in Mali requires efforts and engagement from various stakeholders. During the design, a range of stakeholders, as noted in the table below, have brought different views and aspirations based on their experiences and involved in addressing the impacts of climate change on the socioecoligical system in Mali. Some of the stakeholders who have been consulted will be part of the project activity execution; playing different roles ranging from being members of technical advisory groups such as the steering committee, community mobilization, awareness raising, among others. Stakeholder engagement will therefore, remain an on-going process and part of project implementation. The Project team will engage different stakeholders using different platforms and mechanisms, including annual meetings, awareness raising campaigns, information dissemination sessions such as radio and or TV programs. In this regard, different stakeholders will be engaged on the basis on project implementation needs (that is, on the needs basis),while others will have more defined roles embedded within the overall implementation structure (such as members of the steering committee who will need to meet periodically).

2. Consultations were organized at country level in Bamako, bilateral meetings and focus in the field. The Table 3 summarizes the list of stakeholders met.

Table 3: List of Stakeholders met during the design

Names of participant	Structures	E-mail addresses	Contacts
Amidou GOITA	Point Focal National du FEM	amidougoita@gmail.com	66 88 36 48 71 76 85 31
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Kaba DIALLO	PFN-LCD-UNCDD, AEDD	teli1072@yahoo.fr	77859725 63424145
Boureima CAMARA	DG AEDD- Agence pour l?Environnement et le D?veloppement 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 R?gionale des Eaux et Forets - de Mopti	ousamassekou@yahoo.fr	76010848

Names of participant	Structures	E-mail addresses	Contacts
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Hasane KAYA	SNV ?Organisation N?erlandaise de D?veloppement	helkayah@yahoo.fr	79046907
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Manda SISSOKO	FIDA- Fonds International pour le D?veloppement Agricole	m.sissoko@ifad.org	
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Allaye BOCOUM	Gestionnaire de projet	allayeabary@gmail.com	76123619

Names of participant	Structures	E-mail addresses	Contacts
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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: Project stakeholders

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 hydro-meteorological 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.
Coordination of young people and women Displaced person?s associations Indigenous population	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 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.
Universitie Universities and research institutes	
University of Bamako Regional Centre for Agronomic Research of Mopti (RCAR) Cinzana	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.

Institute of Rural Economy (IRE) of Niono	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.
Associations and agencies of producers/marketing /banking structures	
National Agency for the Promotion of Employment (NAPE) of Segou	Will be key partners for the development of markets for agricultural and forest-friendly products in Benin and the region.
Regional Investment Promotion Agency	Help facilitate any export of agricultural products; help facilitate market access.
National Bank for Agricultural Development (NBAD) Savings and Credit Bank	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)).
National Centre for the Promotion of Volunteering (NCPV)	Mobilize the body of national volunteers at site level on issues of mediation around peace, climate security, and sustainable land management.
Civil Society Civil Society Organizations (CSOs)	
AMAPROS AMEDD AMASSA GEDEFOR USCET	? The Malian Association for Food Security and Sovereignty ? Decentralized Forest Management Program ? The Union of Cooperatives Societes of Tamani Breeders

In including the civil society organizations (CSOs) among key stakeholders, the project recognizes that CSOs are an important ingredient to development as they play multiple roles. They are an important

source of information for both citizens and government. They monitor government policies and actions and hold government accountable. They engage in advocacy and offer alternative policies for government, the private sector, and other institutions. They deliver services, especially to the poor and underserved. They defend citizen rights and work to change and uphold social norms and behaviors. Within the context of this broad array of functions of CSOs, their participation in the project will focus principally on providing technical advice during key decision-making processes. At this level, they will be part of the advisory body as well as members of the project steering committee. At the level of activity implementation, CSOs will support community-level activities such as community mobilization, identification of beneficiaries based on vulnerability, and identification of production landscapes for project activities. Thus, at the community-level stakeholder engagement (see section on institutional arrangement and coordination), CSOs will be play a critical roles in strengthening the organizational capacities of 2,000 household beneficiaries of farmers (at least 50% women and 30% youth) from 50 communities to address issues related to climate impacts on value chains development (ouput 3.1.1). Additionally, they will play a role in the identification and dissemination of endogenous and exogenous knowledge on best available technologies and climate resilient practices for production and post-harvest processing to at least 2,500 direct household beneficiaries for adoption (at least 50% women and 30% youth) (output 4.1.1)

Stakeholder consultations after PIF stage have been constrained by two important factors which made it impossible to do in-country missions to facilitate the consultations. These factors regard COVID-19 and the fragile socio-political context that has made it less safe to conduct in-country missions. Nonetheless, to make up for this, and to build on extensive consultations that were undertaken during PIF preparation, virtual consultations were instead organized that brought most of the stakeholders that were involved in during PIF development. This means that at the virtual consultation meetings, civil society organizations, the private sectors (marketing and banking), local associations and women groups, academia and research groups and government and quasi-government agencies were represented, and the project document benefited from technical inputs from this wide array of stakeholders.

The virtual meeting brought together different stakeholders around the development agenda of this project. Stakeholders had to voice their opinions on the proposed project activities, implementation plan, target communities and production landscape. Therefore, the virtual meeting was an opportunity to validate what has been prepared in terms of activities, but also to amend where it was deemed necessary. The adjustments in terms of targets were also informed by the consultations during the virtual meetings.

The following points summarize some key issues that were raised and have been integrated in the development of the project:

? Often when a project ends, everything stops. Capacity building of local populations but also and especially of the beneficiaries (governance, leadership and technical) is important. Continued engagement with local communities and other stakeholders needs to clarify that the project is only there to catalyse efforts, and will finance at the beginning but a mechanism of independence of the project needs to be set up afterwards to ensure sustainability to avoid the ?white elephant syndrome? of some development projects.

? Women have special needs vis-?-vis their engagement and involvement in development projects. There are also cultural dimensions that influence women participation in development projects as beneficiaries. This is exacerbated by high illiteracy levels among women compared to their male counterparts. To ensure their effective participation and engagement in the project, participatory approaches need to be preferential in favour of women. This needs to be accompanied by transparent geographical and socioeconomic targeting mechanisms of beneficiaries. This is equally true for the youth who are also taken as part of the vulnerable and marginalized groups based on their level of exclusion from decision making opportunities regarding access and use of natural resources.

? With climate change, women no longer have an activity and have to wait for their husband's money to buy things for the children and the house, whereas if they can cultivate, they can do it themselves: Women indicated that it is very difficult not to help their husbands. Their activity is agriculture, they cannot do anything else.

? The gender dimension plays an important role in the type of activities that men and women can be involved in. For example, men breed oxen among the young people, with an average of 4 head per man. None of the women in the youth group had their own oxen, but the older men do. Each household has chickens and goats, used for: sale to pay for children's school fees and supplies, sale in case of problems (illness of a family member), sale in case of crop failure to buy rice, for consumption in case of an event or need.

? There are perceived changes in the rainfall patterns ? limiting the smallholders and preventing them from investing in more than climate change is capable of. There is strong sense of socio-political insecury, which also limits the level of investments in one?s land, particularly for crop producers.

? There is need to complement the efforts of other development partners so that lessons can be used and integrated in the current project.

Select what role civil society will play in the project:

Consulted only; Yes

Member of Advisory Body; Contractor; Yes

Co-financier;

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

Executor or co-executor; Yes

Other (Please explain)

3. Gender Equality and Women's Empowerment

Provide the gender analysis or equivalent socio-economic assesment.

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. Women represent 50.3% of the Malian population, with a higher unemployment rate than men (24.5% of the inactive population). In the agricultural sector, 63.7% of active women are part of the sector and are responsible for at least 70% of food production. In this sector, the social division of labor is an important limiting factor. Indeed, women who are destined to work in food crops (subsistence of the family), are at a disadvantage compared to men who are more active in cash crops. Illiteracy is higher among women than among men, and literacy rates reach around 38.8% among young women compared to 56% for young men. Access to land still shows persistent inequalities, as does access to agricultural equipment, which remains very limited for them.

3. Young people are also a vulnerable group and strongly affected by poverty. With young people representing a significant proportion of the population, impacts on this group have implications for the entire country. Young people have limited access to training and quality training due to the weakness of the Malian education system, particularly in rural areas, where young people have few alternatives to that of engaging as a labor force. work in the agricultural sector. Limited access to land for young people (men and women) reduces their opportunities in the agricultural sector. Even the heads of families inherit at best only part of the land from their father. They remain to work on the family farm with few possibilities of financial autonomy outside the family. This situation forces young people to emigrate to the cities or abroad, where the options are not better. For young girls the situation is even more limiting, since their access to and job opportunities are even lower.

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. The project's actions will particularly benefit women, who are the first concerned by the promotion of bioenergy, nutrition and family food security. Women are also with young people and minorities, the groups most vulnerable to climate change and most affected by poverty. Women are particularly vulnerable to the effects of impoverishment due to the low level of training, socio-cultural actors who do not allow them to take part in local decision-making processes, limited access to factors of production and financing. Women and young people have more difficulty than men in accessing land (or only through the head of household). National legislation aims to protect and promote women?s land ownership, but women, girls and female-headed households often lack the assets, alternative income sources and access to services for building resilience to livelihood shocks[1]. Their access to the formal financial system also remains limited.

6. Women are particularly vulnerable to climate change and pressure on natural resources. Thus, rural women spend a large part of the day collecting wood for cooking and heating water (3 hours a day on average). The pressure on the forests and the overuse of wood make collection even more difficult, with women having to walk further and further to find it. On average, they estimate the preparation time for each meal to be 1 hour 45 minutes36, which can be problematic when there is not enough wood collected or during wintering when the wood becomes damp. The women cook in closed spaces, dedicated to the preparation of meals, and where the fumes cause health problems, both at the respiratory level and at the eye level. Women are primarily responsible for feeding the family, not only through the preparation of meals but also with the production of food for family consumption (vegetables, small livestock, certain food crops such as groundnuts), while men devote themselves more to cash crops. Women participate in agricultural work on the family farm, in particular weeding. Collecting water is one of many women's activities and the time spent on it varies according to the distance to the nearest water source.

7. Young people are also a vulnerable group and strongly affected by poverty. With young people representing a significant proportion of the population, impacts on this group have implications for the entire country. Young people have limited access to training and quality training due to the weakness of the Malian education system, particularly in rural areas, where young people have few alternatives to that of engaging as a labor force or even work in the agricultural sector, or even to leave their village for the city or for foreign countries. Limited access to land for young people (men and women) reduces their opportunities in the agricultural sector. Even the heads of families inherit at best only part of the land from their father. They remain to work on the family farm with few possibilities of financial autonomy outside the family. This situation forces young people to migrate to the cities, where the options are not better. For young girls the situation is even more complex, since their access to land and employment opportunities are even less. Young people are also not part of the decision-makers at the local level and are frequently frustrated that their initiatives and ideas are not taken into account.

8. The project will affect 50% of women, by developing activities benefiting women as a priority (promotion of biogas, revolving funds for solar lamps/improved stoves, PPM), and making it possible to improve their quality of life (healthier environment, reduction of workloads), freeing up free time for business activities, and giving them access to training (functional literacy, management training, nutrition training, technical training at the PPM level), while creating spaces for village consultation where the floor is also given to women. Thus, the following estimates were made:

a) 50% of the beneficiaries of biodigesters will be women, the benefits of this technology benefiting the whole household and particularly women.

b) Women will be the primary beneficiaries of activities to increase better access to finance, credit, and capacity in value chain management established and strengthened. This activity being based on building the capacity of women.

c) The most dynamic women's groups will be supported to become cooperatives for the marketing of biopesticides. FFS training, demonstration and in-situ testing activities will seek to target women as a priority, with a minimum of 30% female participants

d) Similarly, quotas of at least 30% women will be established for participation in all consultation and decision-making processes (formulation and implementation of PCAs; land commissions; Management and Oversight Committees ?; and executives village consultation).

e) Women will benefit from better access to water resources (boreholes) and land (support for access to land) thanks to the project.

f) Finally, women will be targeted specifically for women-specific pilot projects such as the use of biogas for the processing of shea butter. The project through its pilot projects will identify well-organized women's associations, which will be able to benefit from access to renewable energies (biodigesters, photovoltaic kits, solar pumps, etc)

9. The promotion of gender equality and social inclusion in the project will also be taken into account at the level of the implementation mechanism, where measures will be taken so that the operators, and in particular the extension agents (animators) recruited are primarily women and young people. The project will support this process by sensitizing its implementing partners and staff and providing training to improve partners' understanding of these issues.

10. The project actions will also benefit young rural people who constitute a vulnerable group capable of appropriating new technologies and techniques very quickly when given the opportunity. Young people are active, innovative and ready to train and learn. Supporting young people generates a long-term impact on the entire territory. Thus, the project:

a) Will seek to target a minimum of 30% young people in all its activities, and in particular in local development processes (land commissions, village consultation frameworks).

b) Develop activities specifically dedicated to young people, in particular with the proposal of training in management and entrepreneurship (in synergy with FIER), making it possible to direct the young people targeted by the project towards functional literacy, technical training and training in management and entrepreneurship.

c) Job opportunities for young craftsmen will also be developed by the project with the training of craftsmen around the renewable energy market (masons, metal carpenters, electricians, etc.), and the training of input suppliers (nurserymen, producers of fodder seeds, producers of biological inputs).

11. Facilitation measures include all measures aimed at creating and maintaining a political and operational environment conducive to the consideration of women and young people among partners and other stakeholders, for example in terms of consultation on major orientations, awareness-raising and capacity building.

12. Under the project, these measures will include: (i) training/orientation of program staff and implementing partners on the strategy for the promotion of gender equality and social inclusion; (ii) monitoring implementing partners on how they are applying this approach; (iii) taking these themes into account in the training of PIU trainers and in village consultations; (iv) promotion of inclusion (social, by age and gender) in all groups supported by the project; (v) the preparation of thematic guidance documents or sheets on the inclusion of women and young people for staff and implementing partners; (vi) the inclusion of topics such as targeting and gender in the project's technical launch workshop

[1] https://www.nupi.no/en/publications/cristin-pub/climate-peace-and-security-fact-sheet-mali

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

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

Improving women's participation and decision making Yes

Generating socio-economic benefits or services or women Yes

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

Yes
4. Private sector engagement

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

1. Mali?s economy is based on agriculture, with 80% of the active population employed, and a contribution about 40% of GDP with 30% of export revenues[1]. The Government allocates more than 15% of its national budget to agriculture and significant progress is being made in managing the field at the legislative, regulatory and institutional levels. One of the major goal of the COSOP 2020-2024 is to improve the business climate for agriculture, in order to stimulate notably greater private sector engagement. The participation of the latter to the national effort regarding the resilience to climate change is one of the eight operational axes of the National Action Climate Plan[2] . One of the objectives of the project MERIT is also the fostering of local economic dynamics relying on the strengthening of the private sector with project FIER and on the creation of financial incentive schemes together with decentralized financial services with the support of INCLUSIF. Young entrepreneurs will be trained to provide services related to the project?s activities: upkeep and maintenance of disseminated technologies, production of tree seedlings, seeds fodder, organic inputs. Furthermore, the project will strengthen the dynamic under MERIT which develops close links with the private sector to facilitate the promotion of the biodigester /photovoltaic nexus and its maintenance.This is achieved first through associations of crafsmen already promoted by the ASAP/PAPAM project, forming private companies capable of implementing the national strategy by developing direct links with producers on the one hand and DFS on the other.

2. 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 agri-preneurs , 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 implementation, awareness-raising and engagement with the private sector will continue, 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.

[1] Republic of Mali, Country Strategic Opportunities Programme, 2020-2024

[2] Plan d?Action National Climat (PANC)

5. Risks to Achieving Project Objectives

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

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	Risk level	Mitigation Management Strategy
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	Medium	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.

Lack of political will among regional and local authorities to create/adjust/adopt an IARDCC and planning tools	Low	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.
Little interest of vulnerable rural communities in target areas in adopting IARDCC, sustainable climate resilient tools and measures	Low	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.
Inadequate land and forest regulations could discourage the adoption of an IARDCC and CSA practices	Medium	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.
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.	High	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.

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.	Medium	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).
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.	Low	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.
Covid-19 outbreak	Medium to high	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.

COVID-19 Considerations for GEF Projects and Programs

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?s 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.

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. 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. Specific agreements will be signed with local NGOs to provide support.

Enabling Environment. Key measures put by the government, which support all projects including the GEF project are:

6. (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

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.

7. 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

Environmental and social assessment

8. The Project is assessed as high-risk In terms of climate. The target group is substantially dependent on climate-sensitive natural resources, especially as regards rain-fed 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. 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.

6. Institutional Arrangement and Coordination

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

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:

o 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;

o 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;

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

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

o 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.

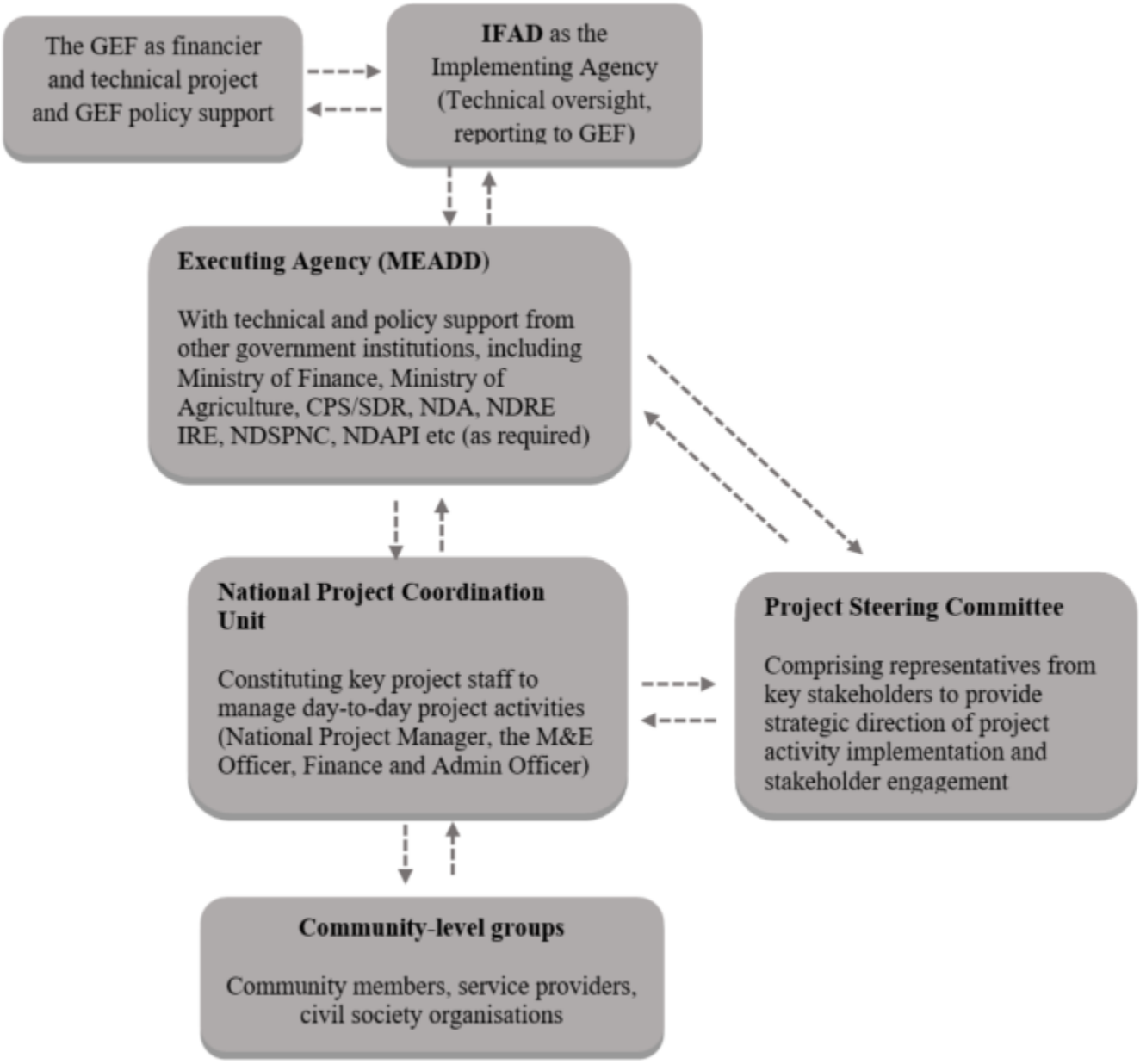
5. This project will be placed under the supervision of the Ministry of Environment, Sanitation and Sustainable Development. The national directorate of the project will be based in the Environment and Sustainable Development Agency (AEDD) and will collaborate closely with: i) the Ministry of Finance, 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. The project will have a National Project Coordination Unit (NPCU) to perform administrative and management functions of the project. The NPCU will comprise of key project staff including the National Project Manager, the M&E Officer, Finance and Admin Officer. Overall, the NPCU will be at the heart of day-to-day running of the project - responsible for managing resources at project activity-level, 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. As alluded to above, the project will also have a Project Steering Committee which will be chaired by the MEADD or its representative, and the secretariat will be provided by the NPCU. In addition to representatives from 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. The figure below summarizes the organisational structure of the project to ensure a systematic and smooth implementation of the project. It will also be important to ensure seamless communication among key stakeholders in the implementation of the project ? that will also offer the ability to the project executers and implementers to respond more effectively to the challenges that otherwise can potentially derail the project implementation course.



10. 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)	o Organization of training for CRS staff
	o Funding of CRGP sessions
	o Funding of continuing education projects
	o Funding of monitoring and evaluation missions
	o Support for the functioning of the service in charge of vocational training (financial and material, etc.)
	o Support for the development of planning tools (SDRFPTE, communications plan)
	o Support for the establishment of a regional financing mechanism for vocational training
	o Capacity-building for training facilitators
Support Project for the Political Framework of Crisis Management in the Central Mali Regions	o Capacity-building, institutional support
PSIRC	o Security and development
LuxDev	o Organization of training for CRS staff
	o Funding of CRGP sessions
	o Funding of continuing education projects
WORLD VISION	o Education, conflict prevention and management
ANICT	o Support for local authorities, creation of basic social infrastructure and services; training for elected officials.
ALPHALOG	o Funding for training and apprenticeship projects at the youth site; Funding of monitoring and evaluation missions; o Support for the functioning of the service in charge of vocational training (financial and material, etc.)
Think Peace	o 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)	o Border management and security/reduction of armed violence

IOM	o 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	o Support for the development of planning tools (SDRFT, communication plan); construction and equipment of CFP/IFP; development of training programmes
INCLUSIF Project	o 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	o Conflict prevention and management; social cohesion
ASDAP	o Sexual and reproductive health
AMAPROS	o 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	o Family Home Development Association
UCSTB	o Union of Cooperative Societies of TAMANI Breeders,
TONUS	o Climate change, food security
PADRE/ GIZ	o Training of trainers from field/school centres and workshops; education, hydraulics, health and sanitation; construction of infrastructure
AMASSA	o Food safety
GEDEFOR	o Climate change, reforestation, promising sectors
AMEDD	o Climate change, decentralization
ALPHALOG	o Intensification of small businesses, livestock, agriculture; market gardening; decentralization; the environment; improvement of the living environment, capacity-building for associations, sanitation
CARD	o Rice production
UNDP	o Social cohesion, sustainable development
MINUSMA	o Assistance through quick impact projects in the areas of basic social services, peace building
UNHCR	o Support for refugees and displaced persons

EDUCO	o Education
GERES	o Climate change
MERIT/IFAD	o The MERIT Project ? Energy and Agriculture nexus
FIER/IFAD	o Climate change; vocational training, integration of women and young people
INCLUSIF/IFAD	o Agricultural sector, AGR, training of POs, SMEs, SFD

11. 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

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

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

1. Mali has been the scene of profound environmental, social and economic changes for more than a decade due to land degradation, aggravated by increasingly severe climatic conditions and the increase in needs linked to exponential population growth. The country signed the United Nations Convention to Combat Desertification on October 15, 1994 before ratifying it on October 31, 1995. This commitment was concretized by the elaboration and adoption in 1998 of a National Action Program (NAP).

2. The 2006 Loi d'Orientation Agricole (LOA), which provides a single unified framework for all legislative and regulatory laws impacting agriculture, is one of the most important policies, initiatives, and institutions. This rule mandates that at least 15% of publicly built land be distributed to women. Mali approved the Agricultural Development Policy (PDA) and the National Agricultural Sector Investment Plan to implement the LOA (PNISA). The PDA is built on two primary pillars: I increasing smallholder producers' resilience, and (ii) identifying agricultural growth centers (agropoles) to build specific agricultural value chains. The PNISA is Mali's national agricultural development initiative, which brings together all present and prospective programs.

3. 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.

4. 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.

5. Specifically, the project is consistent with a number of national strategies, plans, reports and assessments under various Multilateral Environmental Agreements. These include the following:

? **Mali?s second national communication on climate change:** Mali, together with more than 150 other countries in the international community, ratified the United Nations Framework Convention on Climate Change on May 9, 1992, at the United Nations (UN) headquarters in New York (UNFCCC). In June of the same year, at the United Nations Conference on Environment and Development in Rio de Janeiro, he signed the Convention. The Convention was ratified on the 28th of December, 1994. The ultimate objective is to stabilize in accordance with the relevant provisions of the Convention, the concentrations of GHG in the atmosphere at a level that prevents any anthropogenic disturbance dangerous to the climate system. This level should be reached in sufficient time for ecosystems can naturally adapt to climate change, whether the production food is not threatened and that economic development can continue in a sustainable way.

? **Strategy framework document for Growth and Poverty Reduction (CSCRP)[1]:** finalized in 2002, the third pillar stipulates the importance of the development of the rural sector and sustainable management of natural resources. Consequently, the strategic elements of intervention for the protection of natural resources are based on: (i) the strengthening of inter-sectoral dialogue through the strong involvement of institutions representing the women and children; (ii) strengthening the commitment and individual responsibilities of farming communities in the decision-making process, in relation to the sustainable management of resources silvo-pastoral, and (iii) the development of advocacy/sensitization activities by and for actors of sustainable development. Specific interventions to combat desertification aim to achieve four priority

objectives: (i) the fight against soil erosion and degradation; (ii) the development and rational management of land for cultivation and pasture; (iii) implementation consultation of conventions relating to environmental issues [in particular the Conventions of the United Nations on the conservation of biological diversity, on climate change, the fight against desertification and relating to wetlands (Ramsar Convention) and (iv) the development of an active partnership at all levels.

? **National Environmental Action Plan (PNAE)**[2]: This is a framework for effective and sustainable environmental planning and management which must enable all questions to be addressed. Its implementation should make it possible to bring a significant contribution to the fundamental questions concerning the fight against desertification, food security, prevention and fight against pollution, the fight against poverty, which constitute so many constraints to be lifted in order to ensure development socio-economic sustainability of Mali. The specific objectives of the plan are: (i) Develop and support the implementation of decentralized and participatory management of renewable natural resources; (ii) Support the various local authorities, organizations and associations of producers (POs, Socio-professional organisations, GIE, etc.) and other partners of civil society, such as NGOs, so that they play their full role in the natural resource management and environmental protection; (iii) Promote sustainable agricultural production systems and methods environmentally friendly mining; (iv) Develop and support the implementation of participatory programs for the management of natural resources through regional land-use planning schemes and development and management plans for village land, with a view to reducing effects of degradation, desertification and/or drought.

? **Nationally Determined Contributions:** Drawn up in 2015, it defines Mali?s commitments in terms of adaptation and mitigation. In terms of adaptation, the country?s vision is to make green and climate-resilient economy a priority. Sectors priorities for adaptation are climate-resilient agriculture forestry, renewable energy, pastoral development and integrated resource management in water. In terms of mitigation, Mali is committed to reducing average GHG emissions to 27% by 2030, compared to the baseline scenario. The levels of GHG reduction ambitions of the mitigation scenario compared to the base scenario are 29% for agriculture, 31% for energy and 21% for forests and land use change. This level of GHG emissions reduction ambitions implies ambitious actions including the acceleration of the consideration of renewable in the energy mix, improving the performance of agricultural production process, reduction of deforestation and intensive reforestation intensive.

? **Regional Action Programmes:** To take into account the diversity of the country at the regional level, and respect the process of decentralization in progress, action programs have been drawn up at the level of the 8 regions and district of Bamako as well as at the level of some villages. Those regional (PAR) and local (PAL) action programs have been designed on a participative basis. They focus on the management of natural resources and more specifically on the fight against desertification. They highlight the specificity of the problems and the actions to be taken at the level of each region, but also their complexity and their interconnection.

? **The Paris Agreement**: Mali signed the Paris Agreement on 26 April 2016, as party to the UNFCCC, and is bound to implement its objectives and aims. The country has deposited its instrument of ratification of the agreement with the United Nations on 23 September 2016. Articles 4 paragraph 1 (a) and (b) and 12 of the Convention commits all parties to the UNFCCC to prepare and submit an inventory of GHGs, mitigation options of GHG emissions, an assessment of its vulnerability to adverse effects of climate change and adaptation measures to the Conference of Parties through the UNFCCC Secretariat.

? Sustainable Development Goals: Mali is a member of the United Nations, and subscribes to the sustainable development goals (SGDs). In the context of this project, it should be noted that land degradation is a complicating factor in reaching many of the SDGs, not only SDG 15 but many of the others such as the elimination of hunger, the provision of biodiversity, clean water and renewable energy, climate change mitigation and sustainable urban environments that all depend on healthy land resources. Through its effect on individual SDGs, land degradation can have systemic effects on others, both land and not land-related SDGs. For example, land degradation that reduces food security in rural areas of The Gambia contributes to increasing national inequalities territorially but also across gender dimensions, job security etc.

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[1] Second national communication to the United Nations Framework Convention on Climate Change, Mali, June 2011

[2] Plan National d?Action Environnementale

8. Knowledge Management

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

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.

9. Monitoring and Evaluation

Describe the budgeted M and E plan

1. The project will follow standard processes and procedures for monitoring, reporting and evaluation. The conditions and reporting templates are integral part of the related legal instruments that must be

signed. The project monitoring and evaluation plan is consistent with the GEF monitoring and evaluation policy guidelines. The project outcome framework includes SMART indicators for each expected outcome as well as end-of-project objectives. These indicators in Annex A constitute the main basis for the assessment of the progress accomplished in project implementation and determination of whether the project results are achieved or not. The monitoring-evaluation costs are also presented in the costed monitoring - evaluation plan and are fully integrated into the overall project budget. The monitoring - evaluation plan will be reviewed and revised as necessary during the project's launching workshop to ensure that the stakeholders understand their roles and responsibilities in the processes of monitoring and evaluation.

2. The implementation of the M&E plan will overall, be overseen by the GEF National Project Manager who will be supported by the M&E Officer, who will, in turn, be supported by the Office Assistant and Regional Field Support Officers (refer to the roles and responsibilities of the Project Management Unit in annex J). Regional Field Support Officers, while representing a decentralised level of project management, they will be critical in the implementation of the M&E at local level ? thus, ensuring efficiency and effectiveness in project delivery. The M&E Officer will also be part of the Project Steering Committee that will constitute important key stakeholders to provide oversight in the implementation of project activities. The M&E Officer will be an important link within the implementation of the M&E plan between community-level structures and project activities and national level structures to support the integration of the social and environmental standards and gender considerations in the project ? consistent with The Gambian national standards and IFAD?s SECAP modalities.

3. In this regard, the implementation of the project?s M&E plan will ensure that the project contributes to the country?s quest to improve institutional arrangement to support building of resilience and adaptation capacities of rural communities to climate change, as well as improving the management of community-based natural resources

4. For IFAD?s internal processes in support and alignment with the GEF operational modalities, a robust and user-friendly planning, monitoring, evaluation, learning and communication system (PM&E) will be established in line with the IFAD's ORMS and GRIPS. The main objectives of the PM&E are to: (i) assess the project?s achievements at the level of outcomes and impact, and compliance with the COSOP results management framework; (ii) provide timely and accurate information of project implementation progress, with an emphasis to monitor performance, based on outputs delivery; (iii) provide reliable and relevant information to all the stakeholders to improve transparency; (iv) define and assign tasks, manage workflow on a timely basis and track the various components and milestone deadlines; and (v) evaluate the performance of implementing agencies and service providers. This system will include citizen engagement/ Third Party Monitoring (TPM) in order to involve beneficiaries and frontline actors in data collection and validation. Impacts will be evaluated against a baseline study, a mid-term evaluation and an ex post evaluation, which will use key indicators in line with the ORMS. The PM&E system will be developed to verify targeting performance and reflect gender and youth perspectives of impact.

5. The proposed indicators and their means of verification will be reviewed and validated at the launching workshop. The project management team will manage the day-to-day monitoring of the project, but other project partners may be assigned to collect specific information, including engaging consultants where deemed necessary. The GEF National Project Manager will inform IFAD, as the GEF Agency, of any delays or difficulties encountered during implementation, so that appropriate support or corrective measures can be taken in a timely manner. The Project Steering Committee will review progress achieved, provide guidance and make recommendations to the project team and IFAD on the need to revise any aspects of the outcomes in the framework or the monitoring - evaluation plan. The GEF Project Manager will continuously monitor project implementation and review the quality of preliminary project results, provide feedback to project partners and establish peer review procedures to ensure adequate quality of the outputs and scientific and technical publications. IFAD will carry out annual project supervision missions to monitor project progress and the quality of outputs produced, as well as ensure the project?s compliance with IFAD and GEF policies and procedures.

6. Project supervision will adopt an adaptive management approach. The GEF National Project Manager will develop a project supervision plan at the beginning of the project, which will be communicated to the project partners during the launching workshop. The GEF Project Manager will focus on the monitoring project implementation, timely delivery of project inputs and outputs, and ensure sound financial management of the project. Progress made in achieving the overall environmental benefits of the project will be assessed and reported to the Steering Committee at agreed intervals. Risks and assumptions of the project will be regularly monitored by the project partners, and the IFAD. Risk assessment and rating will be fully integrated in the project implementation review (PIR). Key financial parameters will be monitored quarterly to ensure cost-effectiveness in the use of financial resources and reported to IFAD. A mid-term review will be carried out at the end of the second year of the project. Both the MTR will include all the parameters recommended by the GEF and IFAD Evaluation Offices.

7. Additionally, project adaptive management will be applied to the management of climate risks (such as floods and droughts) ? likely to call for the involvement of different scenarios (or impact pathways) than what is originally conceived in the project. This rationale will equally be extended to the peaks and lows of COVID-19 which is a potential threat to the overall implementation of the project.

8. The review will be conducted using a participatory approach. This will entail consulting the potential project beneficiaries or the parties affected by the project. These parties are identified during the review and mapping of stakeholders.

9. The project steering committee will be involved in the mid-term review and will prepare the management response to the recommendations of the evaluation as well as an implementation plan. Also, the GEF Project Manager at will have the responsibility to monitor the implementation of agreed recommendations.

10. An independent final evaluation will take place at the end of the project implementation. IFAD will oversee the final evaluation process. A report on the quality of the evaluation report will be made by the IFAD Independent Office of Evaluation (IOE) and submitted with the report to GEF Evaluation Office no later than six months after the end of the evaluation. GEF monitoring tools will be updated at mid-term and at the end of the project. These will be transmitted to GEF Secretariat along with the project's PIR report. As mentioned above, the mid-term review and the final evaluation will check the information provided by the monitoring tool.

Table of the budgeted M&E plan

Type of Monitoring & Evaluation activity	Responsible	Budget US$ (Excluding project staff?s time)	Frequency
Mid Term review	Ministry of Environment, Sanitation and Sustainable Development and the Ministry of Agriculture /IFAD/GEF/Project Team	10,000	Midway into the project implementation
Terminal Evaluation	Ministry of Environment, Sanitation and Sustainable Development and the Ministry of Agriculture /IFAD/GEF/Project Team	10,000	Once at the end of the project cycle

Type of Monitoring & Evaluation activity	Responsible	Budget US$ (Excluding project staff?s time)	Frequency
M&E Assistant	Project Team	45,000	During the entire life cycle of the project
Annual Progress Reports and Dissemination	Ministry of Environment, Sanitation and Sustainable Development and the Ministry of Agriculture /IFAD/GEF/Project Team	10,000	Annually
Steering Committee Meetings	Ministry of Environment, Sanitation and Sustainable Development and the Ministry of Agriculture /IFAD/GEF/Project Team	10,000	Every year, after reception of the annual progress report
	Total Indicative Costs	**85,000**	

10. Benefits

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

1. Please, refer to the section on 1a. 6. Incremental/additional cost reasoning and expected contributions from the baseline GEF LDCF, and co-financing. Specifically, section 1a.7. Adaptation benefits (LDCF) tabulates the LDFC benefits envisaged under this project. Overall, the project seeks to 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 practices. It will directly benefit 33,900 people, 50% of whom will be female. In most of the proposed activities, the gender dimension has been embedded to reflect and acknowledge the differential impacts that climate change and climate variation has on females and males. Another equally important aspect is the consideration of the youth in the project to bridge the generational gap in the adaptive capacities between adults and the youth.

2. Strategically, the project focuses on building and strengthening the production systems by supporting for example, climate resilient species, essences and seeds; local species with high commercial and medicinal value; and the implementation of concrete agro-ecological measures address the effects of drought, desertification and climate change ? critical challenges that weaken the socioecological and economic systems of particularly local communities with compromised ability to cope and adapt to climate change. These concrete actions are accompanied by building capacities to ensure sustainability of project socioeconomic benefits that will accrue to community members during the life of the project. To strengthen the delivery of environmental goods and services through institutional and technical support, the project will also support key government staff who will continue supporting communities beyond the life of the project.

3. The combined effect of the project?s support towards expanding the socioeconomic opportunities of local communities and building their capacities will lead to improved management of natural resources, including the domestication of local species with high commercial and medicinal value domesticated on 2,500 ha of land and 800 ha managed for ecological resilience with essences and seeds produced.

4. Concretely, the project will invest in the socioecological system of Segou to contribute to the generation of environment benefits through:

? *800 ha of land under climate resilient practices*: Production systems related to climate resilience have potential to enhance productivity, building and strengthening resilience (in terms of reducing ?susceptibility to water scarcity, pests, and other climate-related adverse events, and improve the capacity of beneficiary communities to adapt and still produce in the face of unpredictable weather patterns) and reduce emissions associated with crop and pastoral production systems, including avoidance of further land and forest degradation. Climate resilient practices will include practices such as silvopastoral systems (crop-livestock) that, by incorporating trees into grazing land, enhance carbon storage above and below ground, improve soil fertility and natural fertilizers, and limit the expansion of weeds through periodical grazing, among other benefits. The focus of this project on climate resilient agricultural production systems will lead to the improvement of the socioeconomic wellbeing of 1,000 beneficiaries.

? *2,500 ha under local species with high commercial and medicinal value*: Landraces represent dynamic populations of cultivated plants with a historical origin, distinct identity, often genetically diverse and locally adapted, and associated with a set of farmers? practices of seed selection and field management as well as with farmers? knowledge bases.[1] Given the sahelian climatic conditions in Mali, landraces would play an important role in the genetic diversity of crops. This is because landraces are genetically heterogeneous and represent highly diverse populations and mixtures of genotype. The diversity of landraces is both in terms of sites/populations and within sites/populations. Overall, landraces are important genotypes for crop breeding owing to their high potential to adapt to specific environmental conditions and the large source of genetic variability that they provide. This project will therefore support the domestication of landraces to benefit 1,500 direct beneficiaries, including 10,000 indirect beneficiaries using agro- ecological horticultural practices to sustainably increase food security.

? *1,800 ha under concrete agro-ecological measures to address the effects of drought, desertification and climate change:* Agroecological systems are highly diverse, and from a biological perspective, agroecological systems optimize the diversity of species and genetic resources in different ways. It should be noted that agro-ecological measures are biodiversity-positive. In this regard, increasing biodiversity contributes to a range of production, socio-economic, nutrition and environmental benefits. By planning and managing diversity, agroecological approaches enhance the provisioning of ecosystem services, including pollination and soil health, upon which agricultural production depends. Diversification can increase productivity and resource-use efficiency by optimizing biomass and water harvesting.[2] The project?s support towards concrete agro-ecological measures will benefit 1,000 farmers through Farmers Field Schools.

5. Thus, combined, nearly 5,100 ha will be brought under some form of land use and land management regime that will contribute to the generation of global environmental benefits. It is important to note that the proposed avenues for the generation of global environmental benefits have direct positive impact on the socioeconomic opportunities of local communities, and hence, will contribute to building and enhancing their resilience to the vagaries of climate change and climate variability in Mali ? a country that is fragile

and grappling with high levels of social, economic and even cultural challenges, political and territorial insecurity and vulnerability to climate change. Climate change in Mali is perceived as a multiplier effect of conflict owing to the that it affects natural resources that underpin livelihoods of rural communities. In this regard, the contribution of this project to improved management of natural resources in the Mali socio-ecological context is also a contribution to peace building efforts in the country.

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[1] Musibau A et al. (2018) Landraces and Crop Genetic Improvement. DOI: 10.5772/intechopen.75944

[2] FAO (n.d). The 10 Elements of Agroecology Guiding the Transition to Sustainable Food and Agricultural Systems https://www.fao.org/3/i9037en/i9037en.pdf

11. Environmental and Social Safeguard (ESS) Risks

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

Overall Project/Program Risk Classification*

PIF	CEO Endorsement/Approval	MTR	TE
Medium/Moderate	Medium/Moderate		

Measures to address identified risks and impacts

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

1. The Project is assessed as high-risk In terms of climate. The target group is substantially dependent on climate-sensitive natural resources, especially as regards rain-fed 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. 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	Module	Submitted
IFAD_PIF_Mali_ SECAP IFAD MERIT Annex	**Project PIF ESS**	

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

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						
	Indicator	*Baseline*	*Mid term target*	*Project target*	*Verification sources*	*Risks and assumptions*
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						-Residual insecurity doesn?t spill over to the project area -COVID-19 won?t halt the project activities
Component 1: Institutional capacity building for enhancing resilience to climate change of rural communities						
Outcome 1.1. 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	*Number of people trained in integration of Climate Change resilience in land-use planning (50 % women)*	None within the project area	*250 people trained in integration of Climate Change resilience in land-use planning (50 % women)*	*500 people trained in integration of Climate Change resilience in land-use planning (50 % women)*	List of participants and project progress report	- Government as a key stakeholder maintain their interest and engagement in the project
	Number of communal plans that mainstream Climate Change	None within the project area	*1 communal plan that mainstream Climate* Change	*2 communal plans that mainstream Climate* Change	Project progress report and Evaluation report	

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						
	Indicator	*Baseline*	*Mid term target*	*Project target*	*Verification sources*	*Risks and assumptions*
strengthened.	*Number of comprehensive assessment conducted (impact, vulnerability and adaptation assessments, and socio-economic analysis) to support CC mainstreaming into Communal Investment Plan.*	None within the project area	*Assessment underway to support Climate Change mainstreaming into Communal Investment Plan*	*1 comprehensive assessment conducted*	Project progress report and Evaluation report	
Output 1.1.1: 500 staff from technical institutions are trained on the use of the Institutional Adaptation to Climate Change guide (IACC) (at least 50% women).						
Output 1.1.2: 2 Communal and land use plans that mainstreamed CC are developed for the target regions.						
Output 1.1.3: 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).						
Component 2: Development of integrated approaches to climate change adaptation and community-based natural resource management						
Outcome 2.1 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.	*Number of ha of land under climate resilient practices*	0 ha	*250 ha of land under climate resilient practices*	*500 ha of land under climate resilient practices*	Project progress report and Evaluation report	-The momentum and political will integrated approaches to climate change adaptation and community-based natural resource management in the country are maintained or even increased. -Local community members are fully sensitized, maintain their interest in the project
	Number of beneficiaries of climate resilient agricultural production systems	None within the project area	*750 beneficiaries*	*1,500 beneficiaries*	Project progress report, IMPs and evaluation report	
	Number of ha under local species with high commercial and medicinal value domesticated	None within the project area	*1,250 ha under local species with high commercial and medicinal value domesticated*	*2,500 ha under local species with high commercial and medicinal value domesticated*	List of participants and Project progress report	

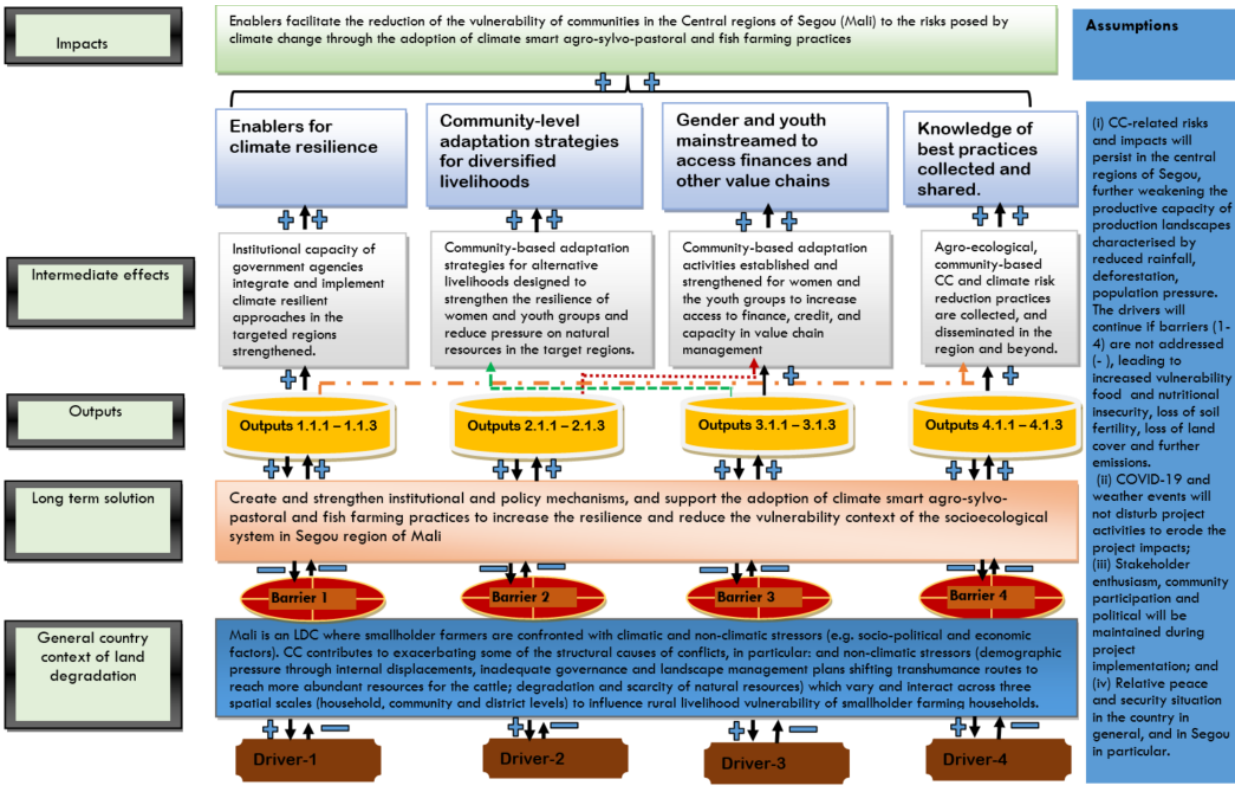
Project title : Strengthening integrated approaches to build climate resilience of vulnerable rural communities and agricultural production systems in the central region of Segou in the Republic of Mali						
	Indicator	*Baseline*	*Mid term target*	*Project target*	*Verification sources*	*Risks and assumptions*
	Number of female direct beneficiaries of *species with high commercial and medicinal value domesticated*	0	*750*	*1,500*	List of participants and Project progress report	activities. - COVID-19 waves do not disrupt the implementation of project activities -Impacts of insecurity leading to community displacement -Lack of sufficiently qualified partners
	Number of male direct beneficiaries of *species with high commercial and medicinal value domesticated*	0	*750*	*1,500*	List of participants and Project progress report	
	Number of ha under concrete agro-ecological measures to address the effects of drought, desertification and climate change	0 ha	*900 ha under concrete agro-ecological measures to address the effects of drought, desertification and climate change*	*1,800 ha under concrete agro-ecological measures to address the effects of drought, desertification and climate change*	Project progress report and Evaluation report	
	Number of beneficiaries of Farmers Field Schools	0	*500*	*1,000*	List of participants and Project progress report	
	Number of female beneficiaries of Farmers Field Schools	0	*250*	*500*	List of participants and Project progress report	
	Number of male beneficiaries of Farmers Field Schools	0	*250*	*500*	List of participants and Project progress report	
Output 2.1.1: 800 ha under climate resilient species, essences and seeds produced and distributed to 1,500 beneficiaries to support the climate resilience agricultural production systems by sustainably intensifying production.						
Output 2.1.2: Local species with high commercial and medicinal value domesticated on 2,500 ha by 1,500 direct beneficiaries and 10,000 indirect beneficiaries using agro- ecological horticultural practices to sustainably increase food security (at least 50% women).						

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						
	Indicator	*Baseline*	*Mid term target*	*Project target*	*Verification sources*	*Risks and assumptions*
Output 2.1.3: Concrete agro-ecological measures to address the effects of drought, desertification and climate change are promoted on 1,800 ha with 1,000 farmers through the FFS to support the climate resilience agro-ecological production systems by sustainably intensifying production (disaggregated by gender 50 % women).						
Component 3: Acquisition of systems, tools and instruments required to develop the resilience of vulnerable communities to climate change						
Outcome 3.1 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.	Number of beneficiaries receiving organizational capacity development.	0	*1,250*	*2,500*	List of trainees, Project progress report and Evaluation report	- Smallholder producers are willing to be trained, and COVID-19 does not prevent physical meetings - Impacts/effects of climate variation and change beyond predictions
	Number of female farmers receiving organisational capacity development	0	*625*	*1,250*	List of trainees, Project progress report and Evaluation report	Community continued engagement in the project
	Number of female farmers receiving organisational capacity development	0	*625*	*1,250*	List of trainees, Project progress report and Evaluation report	Community continued engagement in the project
	Number of beneficiaries adopting technical tools and integrated approaches	None in the project area	1,250 beneficiaries adopting technical tools and integrated approaches	2,500 beneficiaries adopting technical tools and integrated approaches	Project progress report and Evaluation report	Communities are willing to use and adopt technical tools and integrated approaches
	Number of female beneficiaries adopting technical tools and integrated approaches	0	625 female beneficiaries	1,250 female beneficiaries	List of trainees, Project progress report and Evaluation report	Community continued engagement in the project

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						
	Indicator	*Baseline*	*Mid term target*	*Project target*	*Verification sources*	*Risks and assumptions*
	Number of male beneficiaries adopting technical tools and integrated approaches	0	625 male beneficiaries	1,250 male beneficiaries	List of trainees, Project progress report and Evaluation report	Community continued engagement in the project
	Number of national institutions strengthened to produce and disseminate real-time climatological, and hydro-meteorological information and services including in accessible language.	None	5 national institutions strengthened	10 national institutions strengthened	Field visits, Project progress report and Evaluation report	- Engagement with key stakeholders is sustained throughout the implementation of the project. - Staff turnover is kept to the minimum to avoid capacity strengthening in the target institutions.
Output 3.1.1: Organizational capacities of 2,000 household beneficiaries of farmers (at least 50% women and 30% youth) from 50 communities are strengthened to address issues related to climate impacts on value chains development.						
Output 3.1.2 Appropriate technical tools and integrated approaches to climate change adaptation are adopted by 2,500 households (at least 50% women and 30% youth) household beneficiaries in 50 communities.						
Output 3.1.3: Capacities of 10 national institutions are strengthened to produce and disseminate real-time climatological, and hydro-meteorological information and services including in accessible language.						
Component 4: Knowledge management, monitoring and evaluation, and dissemination of results						
Outcome 4.1. Best agro-ecological, community-based climate change adaptation and climate risk reduction practices are collected, and disseminated in the region and beyond.	*Number of direct beneficiaries accessing endogenous and exogenous knowledge on best available technologies and climate resilient practices for production and post-harvest processing.*	None currently accessing knowledge within the project area.	1,250 direct beneficiaries	2,500 direct beneficiaries	Project progress report and Evaluation report	Communities are sensitized, buy into and participate in knowledge creation, use and adoption

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						
	Indicator	*Baseline*	*Mid term target*	*Project target*	*Verification sources*	*Risks and assumptions*
	Number of female beneficiaries of project results scaling up	0	625	1.250	List of trainees, Project progress report and Evaluation report	Farming households willing to participate in the project activities and COVID-19 does not prevent physical meetings and access to knowledge and other benefits.
	Number of male beneficiaries of project results scaling up	0	250	500		
	Number of youth beneficiaries of project results scaling up.	0	375	750 (30%)		
	Number of beneficiaries of training in IACC approaches	0	*650*	*1,300*		*Journalists, community leaders and lead farmers* are willing to be *trained in IACC approaches*
	Number of journalists trained in IACC approaches	0	*50*	*100*		
	Number of community leaders trained in IACC approaches	0	*100*	*200*		
	Number of lead farmers trained in IACC approaches	0	*500*	*1,000*		
Output 4.1.1 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 2,500 direct beneficiaries for adoption (at least 50% women and 30% youth).						
Output 4.1.2 The results of the project are captured in an exit strategy for scaling with 1,800 direct beneficiaries and 3,000 indirect beneficiaries (at least 50% women-headed and 30% youth).						
Output 4.1.3. 100 journalist and 200 community leaders, 1,000 lead farmers trained on IACC approaches and resilience building and 10 Social and environmental safeguard measures are identified and managed.						

Annex A.2: Project Theory of Change



Key to the Theory of Change

Barriers:

o Weak institutional capacities to strengthen integrated climate resilience approach in agro forestry production systems

o Weak organizational capacities of farmers, local, national governments, and access to financing to foster integrated climate resilience into planning and production

o Limited knowledge of the practice of climate dependent or rain-fed agriculture

o Limited investments in community agro forestry and livestock management and climate-resilient agriculture

Drivers:

o Water and wind erosion (land degradation)

o Deforestation due to human (Removal of woody vegetation for use in the form of firewood, soil acidification) and animal (overgrazing)

o Population pressure on natural resources (short fallows) coupled with reduced rainfall

o Elevated levels of socioeconomic poverty

Outputs:

o **Component 1**

•Output 1.1.1: 500 staff from technical institutions are trained on the use of the Institutional Adaptation to Climate Change guide (IACC) (at least 50% women).

•Output 1.1.2: 2 Communal and land use plans that mainstreamed CC are developed for the target regions.

•Output 1.1.3: 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).

o **Component 2**

•Output 2.1.1: 800 ha under climate resilient species, essences and seeds produced and distributed to 1,500 beneficiaries to support the climate resilience agricultural production systems by sustainably intensifying production.

•Output 2.1.2: Local species with high commercial and medicinal value domesticated on 2,500 ha by 1,500 direct beneficiaries and 10,000 indirect beneficiaries using agro- ecological horticultural practices to sustainably increase food security (at least 50% women).

Output 2.1.3: Concrete agro-ecological measures to address the effects of drought, desertification and climate change are promoted on 1,800 ha with 1,000 farmers through the FFS to support the climate resilience agro-ecological production systems by sustainably intensifying production (disaggregated by gender 50 % women).

o **Component 3**

•Output 3.1.1: Organizational capacities of 2,000 household beneficiaries of farmers (at least 50% women and 30% youth) from 50 communities are strengthened to address issues related to climate impacts on value chains development.

•Output 3.1.2: 2 Appropriate technical tools and integrated approaches to climate change adaptation are adopted by 2,500 (at least 50% women and 30% youth) household beneficiaries in 50 communities.

o Output 3.1.3: Capacities of 10 national institutions are strengthened to produce and disseminate real-time climatological, and hydro-meteorological information and services including in accessible language**Component 4**

•Output 4.1.1: 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 2,500 direct beneficiaries for adoption (at least 50% women and 30% youth).

•Output 4.1.2: The results of the project are captured in an exit strategy for scaling with 1,800 direct household beneficiaries and 3,000 indirect beneficiaries (at least 50% women-headed and 30% youth).

Output 4.1.3: 100 journalist and 200 community leaders, 1,000 lead farmers trained on IACC approaches and resilience building and 10 Social and environmental safeguard measures are identified and managed.

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

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

	GEF Comments	IFAD Response

Part I ? Project Information **Focal area elements** 1. Is the project/program aligned with the relevant GEF focal area elements in Table A, as defined by the GEF 7 Programming Directions?	**GEFSEC 8Aug2021:** Yes	

Indicative project/program description summary 2. Are the components in Table B and as described in the PIF sound, appropriate, and sufficiently clear to achieve the project/program objectives and the core indicators?	**GEFSEC 8Aug2021:** 1-Regarding Output 2.1, will 1000 ha of climate resilient species, essences and seeds be produced and distributed "to" 1000 households, or "by" 1000 households? Please clarify. Similarly, should Output 2.2 read "50 ha "for" 500 direct beneficiaries, or "by" 500 direct beneficiaries; and should Output 2.3 read ""with" 500 farmers or "by" 500 farmers. These clarifications are sought with a view to ensuring local ownership and sustainability of the strategies and outcomes. 2 -Regarding Output 3.1 and 3.2, the number of farmers referenced (500 in output 3.1 and 250 in output 3.2) seem low. Please consider opportunities to increase ambition in this regard. 3-Regarding Output 3.1, please clarify if the general term of "organizational capacities" is referring to capacities to access finance and credit, or otherwise. 4 -Regarding Outputs 4,1, 4.2, and 4.2, the number of people engaged appears low. Please identify opportunities to increase ambition in this regard.	**Response 1.** It is **by** instead of **to** for output 2.1 and output 2.2. **:** ? **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 2,500 ha **by** 3,000 direct beneficiaries household 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 1,800 ha **with** 1000 farmers through the FFS to support the climate resilience agro-ecological production systems by sustainably intensifying production (disaggregated by Gender 50 % women) **Response 2.** Maintaining the ambition, but also remaining realistic, the number of farmers referenced have been marginally adjusted after consultations with the national partners ? **Output 3.1:** Organizational capacities of 500 Farmers (at least 50% women and 30% youth) from 30 communities are strengthened to address issues related to climate impacts on value chains development. ? **Output 3.2:** 2 Appropriate technical tools and integrated approaches to climate change adaptation are adopted by 600 (at least 50% women and 30% youth) beneficiaries in 30 communities. **Response 3**

	GEFSEC 11Oct2021: Cleared	
Co-financing 3. Are the indicative expected amounts, sources and types of co-financing adequately documented and consistent with the requirements of the Co-Financing Policy and Guidelines, with a description on how the breakdown of co-financing was identified and meets the definition of investment mobilized?	**GEFSEC 8Aug2021:** Yes	
	GEFSEC 5Nov2021: Please amend the following two entries: ●Green Climate Fund ? Source: change ?other? to ?Donor agency?. ●FAO ? Source: change ?GEF Agency? to ? Donor agency?**.**	Done
GEF Resource Availability 4. Is the proposed GEF financing in Table D (including the Agency fee) in line with GEF policies and guidelines? Are they within the resources available from (mark all that apply):	**GEFSEC 8Aug2021:** Yes	
The STAR allocation?	N/A	
The focal area allocation?	N/A	
The LDCF under the principle of equitable access	**GEFSEC 6Aug2021:** Yes	
The SCCF (Adaptation or Technology Transfer)?	N/A	
Focal area set-aside?	N/A	
Impact Program Incentive?	N/A	

Project Preparation Grant 5. Is PPG requested in Table E within the allowable cap? Has an exception (e.g. for regional projects) been sufficiently substantiated? (not applicable to PFD)	**GEFSEC 8Aug2021:** Cleared	
Core indicators 6. Are the identified core indicators in Table F calculated using the methodology included in the correspondent Guidelines? (GEF/C.54/11/Rev.01)	**GEFSEC 8Aug21:** Please consider opportunity to increase the total number of people trained. Further, please consider and seek to identify opportunities for the number of policies AND/OR plans, including at the community level, that will contribute to mainstreaming climate resilience to be greater than 3.	The proposed number of people to be trained reflect realistic level of ambition that reflects the prevailing socioeconomic context in the country: 100 journalist and 200 community leaders and 1,000 lead farmers trained on IACC approaches , and resilience building and 10 Social and environmental safeguard measures are identified and managed.
	GEFSEC 11Oct2021: Thank you for the modest increases in number of people trained. However, the number of people trained seems quite low, particularly considering the significantly higher number of people with increased resilience. Will there be training involved associated with the activities to increase resilience of people (as captured by core indicator 1 on number of people). If so, please reflect this in the indicator for the number of people trained.	As per your recommendations and after consultations, we have included 1,000 lead farmers to be trained. The targeted people to be trained are the leaders in the communities and they will influence the rest of the communities as per standards practices. This explain why you have the 200 community leaders and 1,000 leader farmers. These lead farmers and community leaders serve as relays in their communities and villages . As per the 100 journalists to be trained, the number is correct and we are talking about a project that on one region which is Segou not national. Topic on resilience is included as part of the training The activity has been updated as follow: Output 4.3: 100 journalist and 200 community leaders trained, 1,000 lead farmers on IACC approaches, and resilience building and 10 Social and environmental safeguard measures are identified and managed.

	GEFSEC 21 OCT 2021: CLEARED	
	GEFSEC 5Nov2021: Part I, Table ?Core Indicators ? CDCF?, Core Indicator 2 ? please change target from 55.00 ha to 55,000 ha	Done
Project/Program taxonomy 7. Is the project/ program properly tagged with the appropriate keywords as requested in Table G	**GEFSEC 8Aug2021:** Yes	

Part II ? Project Justification 1. Has the project/program described the global environmental / adaptation problems, including the root causes and barriers that need to be addressed?	**GEFSEC 8Aug2021:** 1- Please clarify and specify the geographic scope of the project. The title and several sections suggest it is the Segou Region while other sections suggest it includes other regions. Please clarify and ensure consistency throughout the PIF. In doing so, please explain why this region or regions were selected, and provide a clearer description of the climate, economic and development context in this particular part of the country. In doing so, please provide a sense of the total population size and number of hectares in the focus region(s). 2-Section II, "Project Description" para 6 references figures associated with anticipated climate hazards. Please clarify which RCP scenario these are referring to. We encourage referring to at least 2, and ideally 3 RCP scenarios (pessimistic, optimistic, and ideal one in between as well). Further, paras 7-8 on "Projected Climate Change and Impacts" seems on only consider RCP4.5. Please consider a range, and the different impacts this may have. 3-Paragraphs 7 to 17 (and particularly paras 7-9) seem to be considering impacts on regions throughout the country, although the project is focused on the Central Region of Segou. Please clarify if this is the case, or if all the regions listed are located within Segou, and focus the analysis of climate hazards and impacts as directly on p[possible based on best available climate data for the specific region the project is focused on. 4-We note the barrier 4 of Limited investments in community agroforestry and livestock management and climate resilient agriculture. However, it is not sufficiently clear if the outcomes and outputs of the project are substantively designed to address this barrier. For example, how will the project ensure that small holder farmers have access to capital to invest in the transition to more sustainable agricultural practices? This is important for success during project implementation as well as sustainability after the project ends. As one example, is there potential to engage with microlenders and microfinance institutions to develop accessible lending products for climate adaptation and resilience activities? Or are other approaches being considered to address the challenge of access to capital to make the transitions needed. This is especially crucial when transitioning food production options, such as from land based agriculture to fish farming, which will require capital? Please	**Part II** **Response 1** The project concerned Segou region. Reference to other region to compare Segou to other regions has been deleted . An entire section only on SEGOU has been included including the population, the area, etc. (see para 7 to 10) **Response 2**. Noted. **Response 3**. Para 7-10 with associated map focus only on SEGOU region **Response 4.** 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 financers 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. The IFAD main project which the GEF is complementing is fully dedicated on rural finance and already engaging microlenders and microfinance institutions to develop accessible lending products for climate adaptation and resilience activities

	GEFSEC 11Oct2021: Its appears that the following comment from 8Aug2021 has not been fully addressed yet: "Section II, "Project Description" para 6 references figures associated with anticipated climate hazards. Please clarify which RCP scenario these are referring to. We encourage referring to at least 2, and ideally 3 RCP scenarios (pessimistic, optimistic, and ideal one in between as well). Further, paras 7-8 on 'Projected Climate Change and Impacts' seems on only consider RCP4.5. Please consider a range, and the different impacts this may have." Please fully address this comment with revisions and additions to in the CER, and indicate the specific locations of revised text within the review sheet.	A range 'Projected Climate Change and Impacts' , and the different impacts this may have been included under para 6 with maps . These RCP 2.6; RCP 4.5, RCP 6.0 and RCP8.5,
	GEFSEC 21Oct2021: Cleared as adequate at this stage. However, please note that aspects of climate rationale with a particular focus on future scenarios and how the project will address them will be required at CEO Approval stage.	This is well noted. The design team will produce the all aspects of the climate rational with projections at design stage prior to CEO endorsement

2. Is the baseline scenario or any associated baseline projects appropriately described?	**GEF 8August2021:** 1-There seems to be an incomplete sentence or title between paragraphs 26 and 27. Please clarify. 2-It appears the GCF funded projects "Africa Hydromet Program ? Strengthening Climate Resilience in Sub-Saharan Africa: Mali Country Project" is not considered. Please consider. 3-Several other GCF supported multi country projects benefitting Mali also focus on areas that seem to complement and potentially overlap with outputs of this project. Please consider and explain. See here for a list of projects the GCF is supported in Mali: https://www.greenclimate.fund/countries/mali 4-Two GEF supported projects in Mali appear especially relevant to this project, but seem to not be considered. Please articulate hoe this project maximizes complementarity and ensures no overlap with the following projects "Climate security and sustainable management of natural resources in the central regions of Mali for peacebuilding and "Resilient, productive and sustainable landscapes in Mali's Kaye's Region	Noted. Noted. It is already in Table 1 (see the line after INCLUSIF) Noted with thanks and included During the preparation of the PIF, we organized various meetings with UNDP colleagues in charge of this project on climate security. This project is taken into account in table 1
	GEF 11Oct2021: Cleared	
3. Does the proposed alternative scenario describe the expected outcomes and components of the project/program?	**GEFSEC 8August2021:** Please note the comments above in comment 1 of part II on address the challenge of access to finance.	
4. Is the project/program aligned with focal area and/or Impact Program strategies?	**GEFSEC 8August2021:** Yes	
5. Is the incremental / additional cost reasoning properly described as per the Guidelines provided in GEF/C.31/12?	**GEFSEC 8August2021:** Yes	

6. Are the project?s/program?s indicative targeted contributions to global environmental benefits (measured through core indicators) reasonable and achievable? Or for adaptation benefits?	**GEFSEC 8August2021:** Please note and address the comments above on increasing impact ambition.	After consultations with the national authorities, the indicators have been revised
	GEF 11Oct2021: Please note the further comment above on the core indicator related to number of people trained.	The number of people trained has been adjusted with additional 1,000 lead farmers included. The selected number of people (200 community leaders, 1,000 lead farmers) are relays within the different communities and the training will include resilience building . See log frame
	GEFSEC 21Oct2021: Cleared.	
7. Is there potential for innovation, sustainability and scaling up in this project?	**GEFSEC 8August2021:** Please note the comments above on addressing access to capital for small holder farmers and SMEs to make the investments encouraged by the this project to more sustainable food production systems, as a way to contribute to the sustainability of the project interventions.	
	GEF 11Oct2021: Please respond to the comment below provided on 8 August 2021.	All comments addressed under Para 29

	GEFSEC21Oct2021: In the Agency reply to this question, please indicate specifically where/how this comment has been addressed within the PIF document.	The comments are addressed under paragraph 29. The project will help build strong bankable sub projects and initiatives under component 3 and 4 and demonstrate the profitability of the sector to financers 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 is also 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 is expected to be approved at the next GCF Board meeting in February 2022. With this facility being set up and ongoing investment provided by the INCLUSIF project , the barrier related Limited investments in community agro forestry and livestock management and climate-resilient agriculture will be addressed, GEF resources will be used to address the other barriers to avoid duplication. Synergies will be built at the PPG level.

	GEFSEC 29Oct2021: Cleared	
Project/Program Map and Coordinates Is there a preliminary geo-reference to the project?s/program?s intended location?	GEFSEC 8August2021: The map in section 1b of Part II provides a general circle for the region of Segou. Please provide a map that clearer specified the Segou region Further, as indicated above, please clarify the geographic scope of the project, and whether it is just for Segou as indicated in the title or also Mopti as suggested in the table just above the project map.	The map has been updated with the location (Segou) and climate trend in Segou (temperature and Precipitations), latest source from climate analytics , 2021
	GEF 11Oct2021: Cleared	
Stakeholders Does the PIF/PFD include indicative information on Stakeholders engagement to date? If not, is the justification provided appropriate? Does the PIF/PFD include information about the proposed means of future engagement?	GEFSEC 8August2021: 1-We note the list of individuals in table 3 that were listed as having been met. Please provide an explanation of the nature and method of the discussions held. Further, please provide the full name (not just the anonym) of teach organization met with, and to the extent possible a brief description of who they are and why they are relevant to the project. 2-Please indicate if any gender or women's organizations or government departments were met with in designing the PIF. 3-We note the substantial list of project stakeholders indicated in table 4. Please clarify how the "project stakeholders" in table 4 differ from the "List of Stakeholders" in table 3. Please clarify or combine. Please also clarify if all the stakeholders listed in table 4 have been met with in designing this project, and if so what the nature of the consultations have been?	The list of people met are under table 3 . Their names and functions are in the table 3. See page 37. Meetings were organized on site in Banjul with key government officials through public consultations, focus groups, bilateral meetings with key stakeholders **Response 2**: Women's cooperatives for market gardening and rice cultivation, women Fisherfolk cooperatives, women cattle cooperatives have met during the PIF (some of them have been added in Table 3) Table 3: list of stakeholders met during the pif design Table 4: potential project stakeholders identified during the PIF design and involved in the PPG. Meetings were organized on site in Bamako with key government officials through public consultations, focus groups, bilateral meetings with key stakeholders

	GEF 11Oct2021: Cleared	
Gender Equality and Women?s Empowerment Is the articulation of gender context and indicative information on the importance and need to promote gender equality and the empowerment of women, adequate?	**GEFSEC 8August2021:** 1-Please note and address the comment above on the extent to which women's' organizations and/or relevant government agencies have been engaged in the design of this project. 2-We note with appreciation the indication in paragraph 6 of the section on gender that "...the project will contribution to ensuring that women access to capacities, resources for production, markets, and that their voices are heard and taken into accecnunt within decision making institutions." However, we do not see the articulation of ways to ensure this is the case included in the project description and relevant outputs. Please address.	Women's cooperatives for market gardening and rice cultivation, women Fisherfolk cooperatives, women cattle cooperatives have met during the PIF Done. See para 3-43- 60, in addition to indicators included in the logical framework
	GEF 11Oct2021: The response to the second comment below is unclear. What does "para 3-43- 60" mean?	Under the log frame. See Output 1.1.. Output 2.2., Output 2.3; Output 3.1; and 3.2 and outputs 4.1.4.2 and 4.3. All Outputs included a specific disaggregation on the percentage of women included which provide indication on how women beyond the activities on capacity building will be targeted . Setting such quota will allow the women to be included in the targeted activities per outputs In the main document , it is reflected under paragraph 3, paragraph 43, paragraph 60 Additionally, a section on gender equality and women empowerment is under page 42-44 describe the ways to ensure this is the case included in the project description and relevant outputs
	GEF 21Octo2021: Cleared at this stage.	

Private Sector Engagement Is the case made for private sector engagement consistent with the proposed approach?	**GEFSEC 8August2021:** We note the statement that "...parallel private investments with full involvement of the private sector will be secured through Piveli and CNPV, ANPE." Please expand on this. For example, how will this occur?; who are these actors and how will they be involved; in what way will their investment be parallel to the project; etc.? Please also expand on MSMEs and small holder farmers will be engaged in financing transitions to more climate resilient practices.	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 agri-preneurs , 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.
	GEF 11Oct2021: As for all comments, please include the relevant text provided in the response t the GEFSEC comment directly in the the CER, and in the response below please indicate where this new text can be found in the CER.	All the text is highlighted in yellow and paragraph mentioned
	GEFSEC 21Oct2021: Cleared	

Risks to Achieving Project Objectives Does the project/program consider potential major risks, including the consequences of climate change, that might prevent the project objectives from being achieved or may be resulting from project/program implementation, and propose measures that address these risks to be further developed during the project design?	**GEFSEC 8August2021:** We note paragraph 8 of the risks section indicates "The LDCF Project will help IFAD projects to mainstream climate change into the agro-forestry...". Is the intention to help IFAD projects. or to help national and subnational stakeholders and beneficiaries? This is a crucial distinction. Please clarify.	Indeed, it is to help national and subnational stakeholders and beneficiaries through IFAD funded project. The sentence has been corrected accordingly in the document.
	GEF 11Oct2021: Cleared	
Coordination Is the institutional arrangement for project/program coordination including management, monitoring and evaluation outlined? Is there a description of possible coordination with relevant GEF-financed projects/programs and other bilateral/multilateral initiatives in the project/program area?	**GEFSEC 8August2021:** In this section, please clarify if the intended primary project "executing partner" is the Agency for Environment and Sustainable Development. Please also clarify if IFAD is proposing for any component of the project to be self executed directly by IFAD.	The Agency for Environment and Sustainable Development will be the executing partner and the sentence was added.
	GEF 11Oct2021: Thank you for clarifying that the Agency for Environment and Sustainable Development will be the Executing Partner. Please also reply to the second part of the question, which is whether IFAD is proposing for any component of the project to be self executed directly by IFAD.	IFAD is not going to implement any activity Activities are implemented by Agency for Environment and Sustainable Development will be the Executing Partner in collaboration with sector ministries such as the ministry of agriculture. Further specific arrangement will be defined at PPG

	GEFSEC 212021: Please clarify the Agency comment below, which was confusing in its articulation of who is the implementing vs executing partner. We understand IFAD will be the "GEF Implementing Agency partner", and the Agency for Environment for Sustainable Development will be the Executing partner for all activities.	Yes that is correct. IFAD: GEF Implementing Agency Partner Agency for Environment for Sustainable Development: Project Executing Entity for all activities. IFAD will not implement any activities, but will monitor implementation, and provide technical assistance where necessary and manage the identified risks as best possible. This sentence has been further clarified in the PIF under the section coordination
	GEFSEC 5Nov2021: Executing Partner in Portal (*Agency for Environment and Sustainable Development*) is not exactly the same as in the LoE ? actually, in the LoE there are two (instead of one) Executing Institutions (*Ministry of Environment, Sanitation and Sustainable Development and the Ministry of Agriculture*) ? please include in Portal the institutions included in LoE, as well as in section 6 - Coordination.	The Institutions included in the LoE are now also in the portal. IFAD is not going to implement any project activities, but will serve as the GEF Agency only. Activities will be implemented by the Agency for Environment and Sustainable Development, in close collaboration with the Ministry of Agriculture and other partners. Detailed implementation arrangements will be elaborated during project preparation. A few editorial amendments have been made in Section 6 to clarify IFAD?s role.
Consistency with National Priorities Has the project/program cited alignment with any of the recipient country?s national strategies and plans or reports and assessments under relevant conventions?	**GEFSEC 8August2021:** Cleared as sufficient at this stage.	

Knowledge Management Is the proposed ?knowledge management (KM) approach? in line with GEF requirements to foster learning and sharing from relevant projects/programs, initiatives and evaluations; and contribute to the project?s/program?s overall impact and sustainability?	**GEFSEC 8August2021:** Cleared	
Environmental and Social Safeguard (ESS) Are environmental and social risks, impacts and management measures adequately documented at this stage and consistent with requirements set out in SD/PL/03?	**GEFSEC 8August2021:** Cleared at this stage.	
	GEFSEC 5Nov2021: The project overall ESS risk is classified as moderate, and IFAD attached the Social Environmental and Climate Assessment Review Note (SECAP) in Annex 5. However, SECAP is available only in French. Please provide some additional detailed summary about type of risks for the CEO Approval stage.	A summary of the type of risks will be provided at the CEO approval stage <u>June 2022</u> As indicated, the section has additional information on the risks and a Climate Screening Form for Sub-Projects is included as annex 4
Part III ? Country Endorsements Has the project/program been endorsed by the country?s GEF Operational Focal Point and has the name and position been checked against the GEF data base?	**GEFSEC 8August2021:** Yes	

Termsheet, reflow table and agency capacity in NGI Projects Does the project provide sufficient detail in Annex A (indicative termsheet) to take a decision on the following selection criteria: co-financing ratios, financial terms and conditions, and financial additionality? If not, please provide comments. Does the project provide a detailed reflow table in Annex B to assess the project capacity of generating reflows? If not, please provide comments. After reading the questionnaire in Annex C, is the Partner Agency eligible to administer concessional finance? If not, please provide comments.		
GEFSEC DECISION RECOMMENDATION Is the PIF/PFD recommended for technical clearance? Is the PPG (if requested) being recommended for clearance?	**GEFSEC 8August2021:** Please address the indicated comments.	
	GEFSEC 11Oct2021: Please address the further comments.	All comments addressed above
	GEFSEC 21Oct2021: Please address the couple of final specific comments with clear responses.	See answers above
	GEFSEC 29Oct2021: All remaining comments have been addressed and this project is technically cleared, pending any further policy related comments from PPO.	

	GEFSEC 5Nov2021: Please address further policy oriented comments.	
ADDITIONAL COMMENTS Additional recommendations to be considered by Agency at the time of CEO endorsement/approval.	GEFSEC 21Oct2021: Aspects of climate rationale with a particular focus on future scenarios and how the project will address them will be required at CEO Approval stage.	June 2022 As indicated, this aspect has been addressed

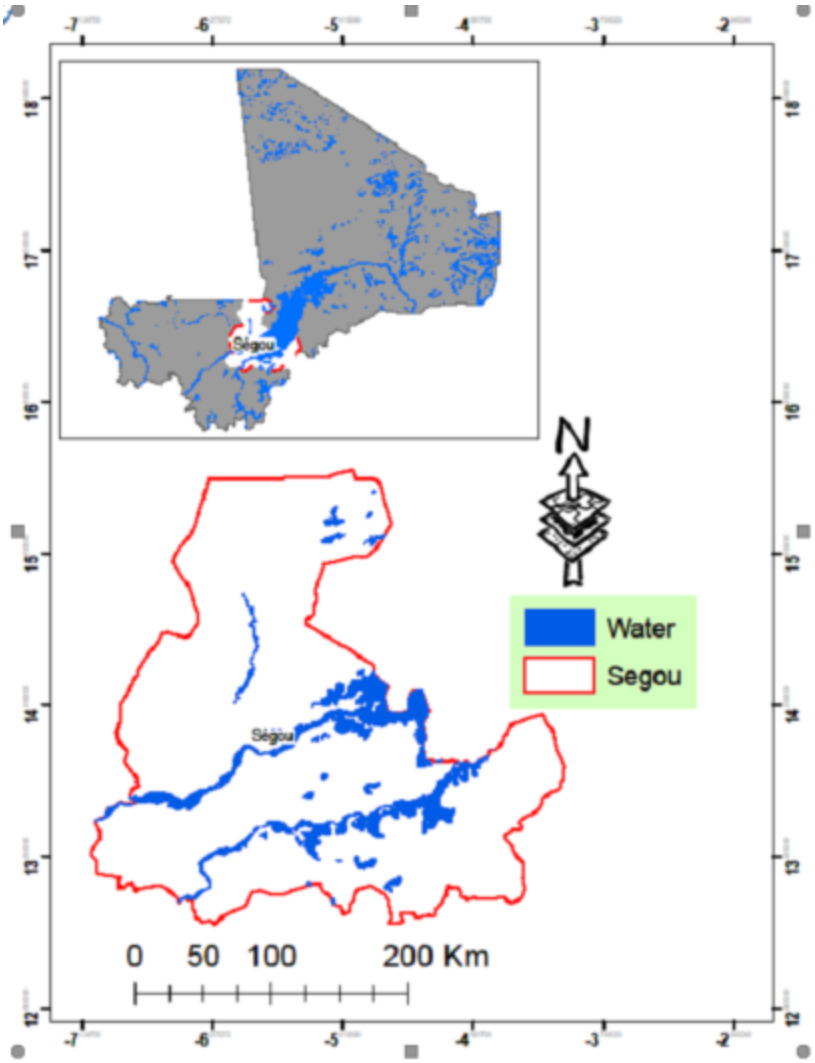
Annex C: Status of Utilization of Project Preparation Grant (PPG)

PPG Grant Approved at PIF: 54,750			
Project Preparation Activities Implemented	***GETF/LDCF/SCCF Amount ($)***		
	Budgeted Amount	***Amount Committed***	***Amount Spent To date***
International Project Document Drafter 1	21,500	0	21,500
Document Drafter 2	12,000	0	12,000
Validation workshop including information regarding GEF purposes and procedures	21,250	21,250	0
Total	54,750	21,250	33,500

ANNEX D: Project Map(s) and Coordinates

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

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



ANNEX E: Project Budget Table

Please attach a project budget table.

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

Appendix A: Indicative Project Budget Template

Expenditure Category	Detailed description	Component (USDeq.)							Responsible Entity (Executing Entity receiving funds from the GEF Agency)[80]
		Component 1	Component 2	Component 3	Component 4	Sub- Total	P M C	Total (USDeq.)	
		Outcome 1.1	Outcome 2.1	Outcome 3.1	Outcome 4.1				
Works									
						0			
Goods									
	Communication equipment to facilitate information collection and dissemination, computers, printers etc	10 000				10 000		10 000	Project Implementation Unit
Grants/ Sub- grants									
Sub-contract to Ministry of Environment, Sanitation and Sustainable Development	Mainstreaming of 2 Communal Plans into Local communal Investment Plan to support the implementation of the national climate related agenda	60 000				60 000		60 000	Ministry of Environment, Sanitation and Sustainable Development
Sub-contract to Ministry of Agriculture	1000 ha of Climate resilient species, essences and seeds are produced and distributed by 1000 households to support the climate resilience		150 000			150 000		150 000	Ministry of Agriculture
Sub-contract to Ministry of Agriculture	Local species with high commercial and medicinal value domesticated on 3,000 ha by 3,000 direct beneficiaries household		185 000			185 000		185 000	Ministry of Agriculture
Sub-contract to Ministry of Agriculture	21,000 indirect beneficiaries using agro-ecological horticultural practices to sustainably increase food security		75 000			75 000		75 000	Ministry of Agriculture
Sub-contract to Ministry of Agriculture	Organisational Capabilities of 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.			150 000		150 000		150 000	Ministry of Agriculture
Sub-contract to Ministry of Agriculture	Acquisition of Appropriate Technical Tools for Climate Change			180 000		180 000		180 000	Ministry of Agriculture
Sub-contract to Ministry of Agriculture	2,500 ha of land with 1000 farmers under climate resilience practices through promotion of Concrete agro-ecological measures		170 000			170 000		170 000	Ministry of Agriculture
Contractual Services – Individual	2. Community trainer - Organizational Capacities of 2500 farmers			50 000		50 000		50 000	Project Implementation Unit
Contractual Services – Individual	2. Community trainer -Integrated approaches to climate changes and appropriate tools use			65 000		65 000		65 000	Project Implementation Unit
International Consultants									
	Development of 2 Communal and land use plans that mainstreamed Climate Change	90 000				90 000		90 000	Project Implementation Unit
	Identification of best available technologies and climate resilient practices for production and post-harvest processing are identified				40 000	40 000		40 000	Project Implementation Unit
Local Consultants								0	
	Development of Integrated approaches to Climate Change			75 000		75 000		75 000	Project Implementation Unit
	an exit strategy for scaling with 3,000 direct beneficiaries and 21,000 indirect beneficiaries				25 000	25 000		25 000	Project Implementation Unit
	Mid Term review				10 000	10 000		10 000	Project Implementation Unit
	Terminal Evaluation				10 000	10 000		10 000	Project Implementation Unit
Salary and benefits / Staff costs									
	Project Assistant						45 000	45 000	
	M&E Officer	45 000				45 000		45 000	Project Implementation Unit
	Project Finance Assistant						45 000	45 000	Project Implementation Unit
Trainings, Workshops, Meetings									
	500 staff from technical institutions are trained on the use of the Institutional Adaptation to Climate Change guide (IACC	90 000				90 000		90 000	Project Implementation Unit
	Capacities of 10 national institutions are strengthened to produce and disseminate real-time climatological, and hydro-meteorological information and services including in accessible language			30 000		30 000		30 000	Project Implementation Unit
	Dissemination of Best available technologies and climate resileince practices to at least 3,000 direct beneficiaries for adoption (at least 50% women and 30% youth)				75 000	75 000		75 000	Project Implementation Unit
	Capacity development of 100 journalist and 200 community leaders, 1500 lead farmers on IACC approaches and resilience building and 10 Social and environmental safeguard measures are identified and managed.				30 000	30 000		30 000	Project Implementation Unit
	10 Social and environmental safeguard measures are identified and managed.				20 000	20 000		20 000	Project Implementation Unit
								0	Project Implementation Unit
	Annual Progress Reports and Dissemination		10 000			10 000		10 000	Project Implementation Unit
	Steering Committee Meeting		10 000			10 000		10 000	
Travel						0			
	Travel					0	12 000	12 000	Project Implementation Unit
Office Supplies						0			
Office supplies, computers, other equipement..						0	10 484	10 484	Project Implementation Unit
Operating Costs									
	Audit						9 000	9 000	Project Implementation Unit
Grand Total		295 000	600 000	550 000	210 000	1 655 000	121 484	1 776 484	

ANNEX F: (For NGI only) Termsheet

Instructions. Please submit an finalized termsheet in this section. The NGI Program Call for Proposals provided a template in Annex A of the Call for Proposals that can be used by the Agency. Agencies can use their own termsheets but must add sections on Currency Risk, Co-financing Ratio and Financial Additionality as defined in the template provided in Annex A of the Call for proposals. Termsheets submitted at CEO endorsement stage should include final terms and conditions of the financing.

ANNEX G: (For NGI only) Reflows

Instructions. Please submit a reflows table as provided in Annex B of the NGI Program Call for Proposals and the Trustee excel sheet for reflows (as provided by the Secretariat or the Trustee) in the Document Section of the CEO endorsement. The Agencys is required to quantify any expected financial return/gains/interests earned on non-grant instruments that will be transferred to the GEF Trust Fund as noted in the Guidelines on the Project and Program Cycle Policy. Partner Agencies will be required to comply with the reflows procedures established in their respective Financial Procedures Agreement with the GEF Trustee. Agencies are welcomed to provide assumptions that explain expected financial reflow schedules.

ANNEX H: (For NGI only) Agency Capacity to generate reflows

Instructions. The GEF Agency submitting the CEO endorsement request is required to respond to any questions raised as part of the PIF review process that required clarifications on the Agency Capacity to manage reflows. This Annex seeks to demonstrate Agencies? capacity and eligibility to administer NGI resources as established in the Guidelines on the Project and Program Cycle Policy, GEF/C.52/Inf.06/Rev.01, June 9, 2017 (Annex 5).