Part I: Project Information

GEF ID
10362

Project Type
FSP

Type of Trust Fund
MTF

CBIT/NGI
CBIT **No**
NGI **No**

Project Title
Resilient, productive and sustainable landscapes in Mali?s Kayes Region

Countries
Mali

Agency(ies)
FAO

Other Executing Partner(s)
Ministry of Agriculture; Ministry of Environment, Sanitation and Sustainable Development

Executing Partner Type
Government

GEF Focal Area
Multi Focal Area

Sector

Taxonomy
Biodiversity, Focal Areas, Mainstreaming, Agriculture and agrobiodiversity, Certification -National Standards, Protected Areas and Landscapes, Productive Landscapes, Land Degradation, Sustainable Land Management,

Sustainable Forest, Ecosystem Approach, Drought Mitigation, Sustainable Livelihoods, Income Generating Activities, Improved Soil and Water Management Techniques, Sustainable Pasture Management, Integrated and Cross-sectoral approach, Restoration and Rehabilitation of Degraded Lands, Community-Based Natural Resource Management, Sustainable Agriculture, Food Security, Climate Change, Climate Change Adaptation, Private sector, Mainstreaming adaptation, Community-based adaptation, Livelihoods, Least Developed Countries, Ecosystem-based Adaptation, National Adaptation Plan, Innovation, Climate finance, Climate resilience, Deploy innovative financial instruments, Influencing models, Strengthen institutional capacity and decision-making, Local Communities, Stakeholders, Private Sector, Individuals/Entrepreneurs, Financial intermediaries and market facilitators, SMEs, Type of Engagement, Information Dissemination, Participation, Partnership, Consultation, Beneficiaries, Civil Society, Community Based Organization, Non-Governmental Organization, Communications, Education, Awareness Raising, Strategic Communications, Behavior change, Gender results areas, Gender Equality, Knowledge Generation and Exchange, Access and control over natural resources, Participation and leadership, Access to benefits and services, Capacity Development, Gender Mainstreaming, Gender-sensitive indicators, Sex-disaggregated indicators, Women groups, Capacity, Knowledge and Research, Knowledge Generation, Training, Course, Workshop, Master Classes, Professional Development, Knowledge Exchange, Peer-to-Peer, Field Visit, Learning, Adaptive management, Theory of change, Indicators to measure change

Rio Markers

Climate Change Mitigation

No Contribution 0

Climate Change Adaptation

Principal Objective 2

Biodiversity

Significant Objective 1

Land Degradation

Significant Objective 1

Submission Date

9/30/2019

Expected Implementation Start

4/1/2023

Expected Completion Date

3/31/2027

Duration

60In Months

Agency Fee($)
649,036.00

A. FOCAL/NON-FOCAL AREA ELEMENTS

Objectives/Programs	Focal Area Outcomes	Trust Fund	GEF Amount($)	Co-Fin Amount($)
LD-1-1		GET	1,200,000.00	9,480,000.00
LD-1-4		GET	1,586,022.00	3,159,961.00
BD-1-1		GET	1,774,536.00	5,758,000.00
CCA-1		LDCF	2,271,406.00	9,477,739.00
		Total Project Cost($)	**6,831,964.00**	**27,875,700.00**

B. Project description summary

Project Objective

Project Objective: Through the implementation of an agroecological transition approach, promote innovations in governance, production and finance in order to reduce the vulnerability of the small-holder agro-sylvo-pastoral food systems and livelihoods, reversing land degradation and halting the loss of globally significant biodiversity in fragile landscapes of the Kayes region Indicators: (i) Characterisation of Agroecological Transition (CAET) score. Target: Average CAET score of a least 70% in the target circles (areas with a CAET score of 70% and above are deemed to be advanced in the agroecological transition) (ii) Area of production land under improved and climate-resilient management. Target: 160,000 ha under SLM, including: - 10,000 ha under climate-resilient management with efficient water management techniques implemented (e.g. zai) - 30,000 ha showing increased land productivity - 25,000 ha directly benefiting biodiversity (iii) Number of direct beneficiaries disaggregated by gender. Target: 200,120 (50% women) (iv) Household Dietary Diversity Score (DDS) disaggregated by commune and type of household (e.g. men-led vs. woman-led household for example). Target: At least 20% increase in average household DDS score in the target circles

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. Strengthened GOVERNANCE for climate-adapted agro-sylvo-pastoral food systems and sustainably managed productive landscapes	Technical Assistance	Outcome 1: Strengthened governance structures more effectively implement and monitor climate change adaptation in sustainable landscape management plans, resulting in sustainable production intensification, adoption of agroecological approaches, resilient livelihoods and improved use and restoration of land and ecosystems and conservation of biodiversity (i) Indicator: Number of multi-stakeholder committees supported to foster planning and investment into climate change adaptation and sustainable management of land and biodiversity at the landscape level (sex-disaggregated participation in meetings) (i) Target: At	1.1: Capacity of at least 22 local landscape committees (COFOs) strengthened to effectively integrate climate change adaptation and vulnerability considerations, as well as land resources use and biodiversity conservation into sustainable landscape management plans. 1.2: Five multi-stakeholder platforms established at the level of and around territorial markets, in order to effectively engage multiple stakeholders (private sector, CSOs, local administration etc.) involved in ASP food systems resilience and sustainable land and biodiversity use planning and investment. 1.3: At least	GET	140,005.00	1,268,111.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
Component 1. Strengthened GOVERNANCE for climate-adapted agro-sylvo-pastoral food systems and sustainably managed productive landscapes	Technical Assistance	Outcome 1: Strengthened governance structures more effectively implement and monitor climate change adaptation in sustainable landscape management plans, resulting in sustainable production intensification, adoption of agroecological approaches, resilient livelihoods and improved use and restoration of land and ecosystems and conservation of biodiversity (i) Indicator: Number of multi-stakeholder committees supported to foster planning and investment into climate change adaptation and sustainable management of land and biodiversity at the landscape level (sex-disaggregated participation in meetings) (i) Target: At	1.1: Capacity of at least 22 local landscape committees (COFOs) strengthened to effectively integrate climate change adaptation and vulnerability considerations, as well as land resources use and biodiversity conservation into sustainable landscape management plans. 1.2: Five multi-stakeholder platforms established at the level of and around territorial markets, in order to effectively engage multiple stakeholders (private sector, CSOs, local administration etc.) involved in ASP food systems resilience and sustainable land and biodiversity use planning and investment. 1.3: At least	LDCF	92,300.00	653,270.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
Component 2. Integrated sustainable landscape management plans developed and implemented and innovative PRODUCTION practices and approaches demonstrated	Investment	Outcome 2: In selected pilot sites, integrated sustainable landscape management plans are implemented, contributing to climate change resilient agro-sylvo-pastoral food systems, dissemination of agroecological approaches, sustainably intensified production, sustainable use and restoration of land and ecosystems and biodiversity conservation. (i) Indicator: Number of sustainable landscape management plans revised to better integrate climate change adaptation and vulnerability considerations, as well as land and biodiversity use and conservation (i) Target: At least 22 SCATs and 17 PDSECs reviewed and revised as (required), implemented and monitored	2.1 At least 22 integrated sustainable landscape management plans (SCATs) and 17 PDSECs developed by COFOs and relevant bodies for demonstration sites, addressing agro-sylvo-pastoral food system adaptation priorities, and facilitating the agroecological transition, sustainable production intensification, and sustainable use and conservation of land and biodiversity ? accompanied by at least 22 inter-communal and six inter-circle pastoral conventions reviewed, revised as required and supported for their implementation 2.2 In coordination with COFOs and supporting active engagement of multiple (and	GET	2,392,124.00	8,179,113.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
Component 2. Integrated sustainable landscape management plans developed and implemented and innovative PRODUCTION practices and approaches demonstrated	Investment	Outcome 2: In selected pilot sites, integrated sustainable landscape management plans are implemented, contributing to climate change resilient agro-sylvo-pastoral food systems, dissemination of agroecological approaches, sustainably intensified production, sustainable use and restoration of land and ecosystems and biodiversity conservation. (i) Indicator: Number of sustainable landscape management plans revised to better integrate climate change adaptation and vulnerability considerations, as well as land and biodiversity use and conservation (i) Target: At least 22 SCATs and 17 PDSECs reviewed and revised as (required), implemented and monitored	2.1 At least 22 integrated sustainable landscape management plans (SCATs) and 17 PDSECs developed by COFOs and relevant bodies for demonstration sites, addressing agro-sylvo-pastoral food system adaptation priorities, and facilitating the agroecological transition, sustainable production intensification, and sustainable use and conservation of land and biodiversity ? accompanied by at least 22 inter-communal and six inter-circle pastoral conventions reviewed, revised as required and supported for their implementation 2.2 In coordination with COFOs and supporting active engagement of multiple (and	LDCF	1,188,975.00	4,213,482.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
Component 3. Improved FINANCE for and investment into climate change adapted livelihoods and sources of income of vulnerable agro-sylvo-pastoral communities	Investment	Outcome 3: Selected mixed value chains are strengthened for improved and climate-resilient rural livelihoods of agro-sylvo-pastoral women and youth (i) Indicator: Number of products or services with strong potential in terms of women and youth empowerment, support to the agroecological transition and increased livelihood resilience, strengthened through the implementation of commercial plans (i) Target: At least five products or services (ii) Indicator: Number of additional projects benefitting from improved access to micro-finance (ii) Target: At least 200 projects benefitting from access to	3.1: Best practices developed and disseminated to support the agroecological transition of ASP communities, with a focus on women empowerment 3.2: In connection with the Centre d?Appui ? la Microfinance et au D?veloppement (CAMIDE), innovative financial mechanisms set up to leverage funding and facilitate investments in support of an agro-ecological transition 3.3: Participatory certification systems elaborated in partnership with the private sector, civil society and international sustainability certification initiatives to facilitate access to markets 3.4: The Junior Farmer	GET	1,344,109.00	7,470,860.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
Component 3. Improved FINANCE for and investment into climate change adapted livelihoods and sources of income of vulnerable agro-sylvo-pastoral communities	Investment	Outcome 3: Selected mixed value chains are strengthened for improved and climate-resilient rural livelihoods of agro-sylvo-pastoral women and youth (i) Indicator: Number of products or services with strong potential in terms of women and youth empowerment, support to the agroecological transition and increased livelihood resilience, strengthened through the implementation of commercial plans (i) Target: At least five products or services (ii) Indicator: Number of additional projects benefitting from improved access to micro-finance (ii) Target: At least 200 projects benefitting from access to	3.1: Best practices developed and disseminated to support the agroecological transition of ASP communities, with a focus on women empowerment 3.2: In connection with the Centre d?Appui ? la Microfinance et au D?veloppement (CAMIDE), innovative financial mechanisms set up to leverage funding and facilitate investments in support of an agro-ecological transition 3.3: Participatory certification systems elaborated in partnership with the private sector, civil society and international sustainability certification initiatives to facilitate access to markets 3.4: The Junior Farmer	LDCF	690,031.00	3,848,626.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
Component 4: Knowledge management and outscaling	Technical Assistance	Outcome 4: Project monitored, results captured and lessons learned widely disseminated. (i) Indicator: Existence and implementation of an M,E&L plan and a communication strategy (ii) Indicator: Existence of a functional partnership in support of the agroecological transition	4.1 Project Monitoring, Evaluation & Learning plan developed and implemented 4.2 A Learning, Outreach & Communication Strategy developed and implemented, including capitalisation of agroecological innovations, coordination and awareness-raising meetings with co-financing partners	GET	467,150.00	601,155.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
Component 4: Knowledge management and outscaling	Technical Assistance	Outcome 4: Project monitored, results captured and lessons learned widely disseminated. (i) Indicator: Existence and implementation of an M,E&L plan and a communication strategy (ii) Indicator: Existence of a functional partnership in support of the agroecological transition	4.1 Project Monitoring, Evaluation & Learning plan developed and implemented 4.2 A Learning, Outreach & Communication Strategy developed and implemented, including capitalisation of agroecological innovations, coordination and awareness-raising meetings with co-financing partners	LDCF	191,938.00	309,685.00
			Sub Total ($)		**6,506,632.00**	**26,544,302.00**

Project Management Cost (PMC)		
GET	217,170.00	878,722.00
LDCF	108,162.00	452,676.00
Sub Total($)	**325,332.00**	**1,331,398.00**
Total Project Cost($)	**6,831,964.00**	**27,875,700.00**

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($)
Recipient Country Government	Ministry of Agriculture, Livestock and Fisheries	Grant	Investment mobilized	23,731,000.00
GEF Agency	FAO	Grant	Investment mobilized	3,717,700.00
Other	CIRAD	Grant	Investment mobilized	427,000.00
			Total Co-Financing($)	**27,875,700.00**

Describe how any "Investment Mobilized" was identified

In accordance with the Cofinancing guidelines, the investment mobilised comprises all relevant investments by project partners in the Kayes Region that are not operating or operational costs. Details are provided below on the nature of the investments. MAEP (Ministry of Agriculture, Livestock and Fisheries) co-financing includes the following projects: - Inclusive financing of agricultural commodity chains (INCLUSIF) - USD 1,731,000 - Programme conjoint Sahel en r?ponse aux d?fis COVID-19, conflits et changements climatiques (SD3C) (Joint Sahel programme in response to Covid-19, conflicts and climat change challenges) - USD 2,921,700 - Gestion des conflits et renforcement de la re?silience agro-pastorale a? la frontie?re Mauritano-Malienne (Management of conflicts and strengthening of agro-pastoral resilience at the Mauritania-Mali border) - USD 716,000 - Projet d?Appui ? l?Initiative pour l?Irrigation dans le Sahel au Mali (PAIS) (Project to support irrigation in Sahel (Mali)) ? USD 4 m - Investment from the Land Development and Irrigation Water Supply Agency (Agence d?am?nagement des Terres et de fourniture de l?eau d?Irrigation, ATI) ? USD 18m CIRAD co-financing includes the following project Fostering an Agroecological Intensification to improve farmers? Resilience in Sahel (FAIR) Sahel - USD 427,000 FAO co-financing includes the following project Projet d?Appui aux Femmes Vuln?rables ? travers la Valorisation int?gr?e des Produits Forestiers non Ligneux coupl?e aux activit?s d?Agroforesterie dans les r?gions de S?gou, Sikasso et Kayes (Kita) (Support Project for Vulnerable Women through the Integrated Valorisation of Non-Timber Forest Products coupled with Agroforestry activities in the regions of S?gou, Sikasso and Kayes (Kita)) - USD 73,000

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($)
FAO	GET	Mali	Biodiversity	BD STAR Allocation	1,774,536	168,581	1,943,117.00
FAO	GET	Mali	Land Degradation	LD STAR Allocation	2,786,022	264,671	3,050,693.00
FAO	LDCF	Mali	Climate Change	NA	2,271,406	215,784	2,487,190.00
				Total Grant Resources($)	**6,831,964.00**	**649,036.00**	**7,481,000.00**

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 ($)

200,000

PPG Agency Fee ($)

19,000

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount($)	Fee($)	Total($)
FAO	GET	Mali	Land Degradation	LD STAR Allocation	81,558	7,748	**89,306.00**
FAO	GET	Mali	Biodiversity	BD STAR Allocation	51,948	4,935	**56,883.00**
FAO	LDCF	Mali	Climate Change	NA	66,494	6,317	**72,811.00**
				Total Project Costs($)	**200,000.00**	**19,000.00**	**219,000.00**

Core Indicators

Indicator 3 Area of land and ecosystems under restoration

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
0.00	10000.00	0.00	0.00

Indicator 3.1 Area of degraded agricultural lands under restoration

Disaggregation Type	Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
		4,000.00		

Indicator 3.2 Area of forest and forest land under restoration

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
	1,000.00		

Indicator 3.3 Area of natural grass and woodland under restoration

Disaggregation Type	Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
		5,000.00		

Indicator 3.4 Area of wetlands (including estuaries, mangroves) under restoration

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

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

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
20500.00	160000.00	0.00	0.00

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

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
5,000.00	25,000.00		

Indicator 4.2 Area of landscapes under third-party certification incorporating biodiversity considerations

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Type/Name of Third Party Certification

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

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
15,500.00	135,000.00		

Indicator 4.4 Area of High Conservation Value or other forest loss avoided

Disaggregation Type	Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Indicator 4.5 Terrestrial OECMs supported

Name of the OECMs	WDPA-ID	Total Ha (Expected at PIF)	Total Ha (Expected at CEO Endorsement)	Total Ha (Achieved at MTR)	Total Ha (Achieved at TE)

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

Title	Submitted

Indicator 6 Greenhouse Gas Emissions Mitigated

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO?e (direct)	0	2815829	0	0
Expected metric tons of CO?e (indirect)	0	4108059	0	0

Indicator 6.1 Carbon Sequestered or Emissions Avoided in the AFOLU (Agriculture, Forestry and Other Land Use) sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO?e (direct)		2,815,829		
Expected metric tons of CO?e (indirect)		4,108,059		
Anticipated start year of accounting		2023		
Duration of accounting		20		

Indicator 6.2 Emissions Avoided Outside AFOLU (Agriculture, Forestry and Other Land Use) Sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO?e (direct)				
Expected metric tons of CO?e (indirect)				
Anticipated start year of accounting				
Duration of accounting				

Indicator 6.3 Energy Saved (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Total Target Benefit	Energy (MJ) (At PIF)	Energy (MJ) (At CEO Endorsement)	Energy (MJ) (Achieved at MTR)	Energy (MJ) (Achieved at TE)
Target Energy Saved (MJ)				

Indicator 6.4 Increase in Installed Renewable Energy Capacity per Technology (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Technology	Capacity (MW) (Expected at PIF)	Capacity (MW) (Expected at CEO Endorsement)	Capacity (MW) (Achieved at MTR)	Capacity (MW) (Achieved at TE)

Indicator 11 People benefiting from GEF-financed investments

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
Female	10,000	100,060		
Male	10,000	100,060		
Total	20000	200120	0	0

Provide additional explanation on targets, other methodologies used, and other focal area specifics (i.e., Aichi targets in BD) including justification where core indicator targets are not provided
For carbon calculations, an explanation is attached as a separate document (calculations based on EXACT, assumptions clarified in full). LDCF core indicators in attached Metadata and CI document.

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	**50.00%**

Natural resources management	**50.00%**
Climate information services	**0.00%**
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	56,000	28,000	28,000	50.00%

CORE INDICATOR 2

Area of land managed for climate resilience (ha)	135,000.00

CORE INDICATOR 3	
Total no. of policies/plans that will mainstream climate resilience	39

CORE INDICATOR 4		Male	Female	% for Women
Total number of people trained	15,200	7,600	7,600	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	**40,000**	**20,000**	**20,000**

Ha of agriculture land	Ha of urban landscape	Ha of rural landscape	No. of residential houses
54,000.00		**81,000.00**	**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

		Male	Female
Total number of direct beneficiaries with diversified and strengthened livelihoods and sources of income	**16,000**	**8,000**	**8,000**

Livelihoods and sources of incomes strengthened / introduced			
Agriculture	Agro-Processing	Pastoralism/diary	Enhanced access to markets
true	**true**	**true**	**true**
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

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Types of natural ecosystem

Desert	Coastal	Mountainous	Grassland
false	**false**	**false**	**false**

Forest	Inland water	Other	Comments
false	**false**	**false**	

OUTPUT 1.2.1

Incubators and accelerators introduced

		Male	Female
Total no. of entrepreneurs supported	**0**	**60**	**60**

		Comments
No. of incubators and accelerators supported	**0**	

		Comments
No. of adaptation technologies supported	**0**	

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	**true**	**true**	**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**	**0**

Sectors

Agriculture **true**	Fishery **false**	Industry **false**	Urban **false**
Rural **true**	Health **false**	Water **true**	Other **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	**1**

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 **1**

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

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No. of mechanism(s)

Comments

OUTPUT 2.2.3

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

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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

Total no. of people trained	**15,200**	Male **7,600**	Female **7,600**
Of which total no. of people at line ministries	**100**	Male **50**	Female **50**
Of which total no. of community/association	**15,000**	Male **7,500**	Female **7,500**
Of which total no. of extension service officers	**100**	Male **50**	Female **50**
Of which total no. of hydromet and disaster risk management agency staff	**0**	Male **0**	Female **0**
Of which total no. of small private business owners	**0**	Male **0**	Female **0**

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

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

---

No. of national climate policies and plans

Comments

OUTPUT 3.1.2

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

---

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

---

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**
		Male	Female
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

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

Part II. Project Justification

1a. Project Description

1.a Project Description

1) The global environmental and/or adaptation problems, root causes and barriers that need to be addressed (systems description).

? Global environmental and adaptation problem

a) Problem context & introduction

A country dominated by the agro-sylvo-pastoral sector, highly dependant on climate and natural resources.

1. Landlocked Mali ranks among the 25 poorest countries in the world[1] and qualifies as a Least Developed Country. Its population of 19.6 million[2] (growing at an average rate of 3% per annum) is highly dependent on natural resource-based sectors, namely agriculture, livestock, fisheries and mining ? economic activities that sometimes do not coincide with conservation objectives of the rich national biodiversity.

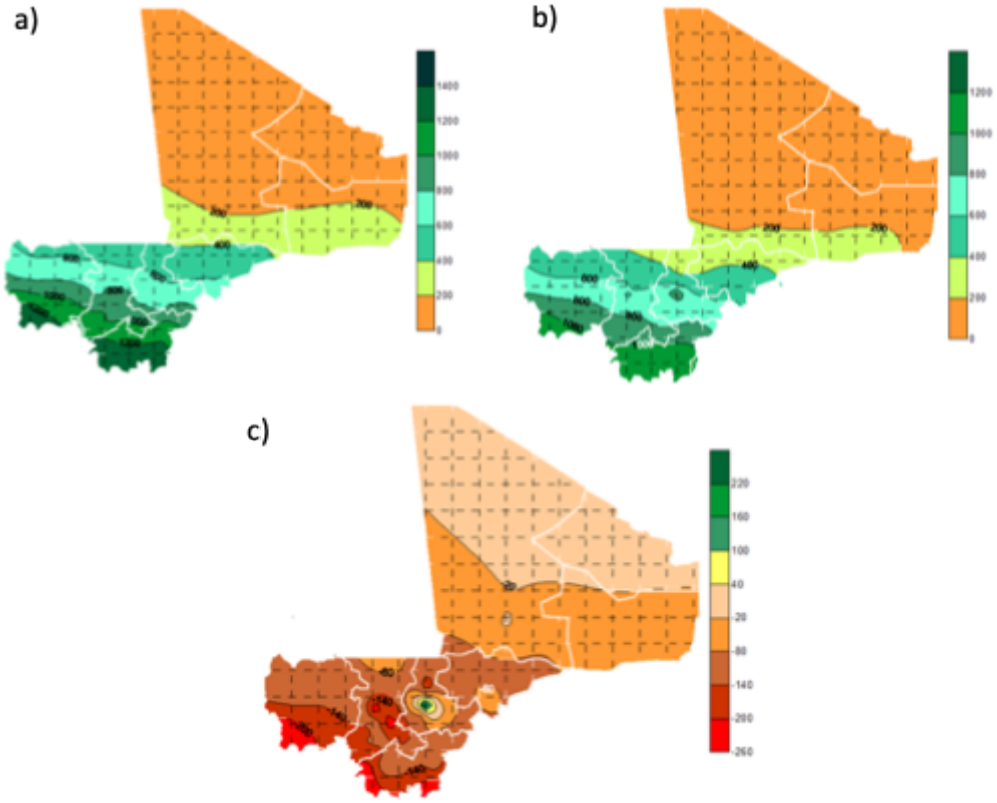
2. Across the country, average rainfall is low, at only 280 mm per year, although there is a strong North-South gradient, ranging from ~1,200 mm in the South to less than 200 mm in the North of the country. This gradient defines the four agro-climatic zones found in Mali: Guinean savanna, Sudanese savanna, Sahelian and Saharan. Average monthly temperatures range from 33?C in June to 21?C in January[3]. The thermal equator, defined by the set of locations having the highest mean daily annual temperature on the globe, crosses the country. Although the land suitable for agriculture represents only 14% of the total area, agriculture is the main activity, both in terms of employment and contribution to the economy of Mali. Indeed, about 75% of the Malian population live in rural areas and agriculture accounts for about 50% of the GDP. The Malian economy is therefore highly dependent on the performance of the agricultural sector, which is ? according to the 2007 NAPA ? particularly sensitive to climate variations, periods of long drought, and the southward expansion of the desert. In sum, the production and productivity of the agricultural sector (mostly rain-fed, small-scale family farming) is extremely vulnerable to climate conditions.

Fragility, conflict and migration exacerbated by climate change, push agro-sylvo-pastoral production systems beyond their carrying capacity.

3. Climate observations and predictions show several trends that already affect the agricultural and agro-sylvo-pastoral sector[4]: i) an increase in mean annual temperatures; ii) a decrease in total precipitation[5], with south-western Mali being the most affected in terms of absolute rainfall loss (Figure 1); iii) an increase in the number of days per year of prolonged heat[6] as well as dry days[7]; and iv) since 1992, an increase in the number of days per year of intense rainfall[8], with considerable interannual variability. As a result of these changes, the isohyetal

line (a line joining points of equal rainfall) has shifted 200 km southward in a few decades. This dynamic tends to foster Mali?s structural demographic and economic geographic polarisation, with the majority of economic activity, food production and human settlement concentrated in the more hospitable riverine areas in the South of the country.

Figure 1. Mean annual rainfall 1951-1980 (a), 1980-2010 (b) and difference (c)[9].



4. This demographic phenomenon has seen conflicts over land and natural resource use increase, in a context where the natural resource base has become highly vulnerable due to climate change. Furthermore, agricultural pressure on land resources has gradually increased. According to the National Directorate of Statistics and Informatics, the area of cultivated land increased from 1,967,000 ha in 1970/71 to 3,472,000 ha in 1994/95, which represents an increase of 15% in terms of clearing. The increase in cultivated area was not accompanied by an increase in food production. Crop production remained low, averaging 750kg/ha.

5. Lacking the adaptive capacity to withstand actual and future climate stimuli and their negative impacts ? with increased demographic pressure from a poor and vulnerable growing rural population, and increasing conflicts over scarcer natural resources ? the agriculture sector has reduced the fallow period, rapidly decreasing soil health and accelerating soil and land degradation, and has expanded into marginal land and/or forest land. This latter, an uncontrolled forest encroachment of the agricultural sectors, further impacts the habitat of plant and animal species, rapidly eroding the rich biodiversity.

6. Consequently, climate change adaptation of the agro-sylvo-pastoral food systems has been identified as a priority in the country?s National Adaptation Programme of Action (NAPA).

The adoption of innovations in governance, production and finance is key to reverse land degradation, halt habitat loss and conserve globally significant biodiversity, and lift rural agro-sylvo-pastoral populations out of poverty thanks to profitable and resilient livelihood options[10].

Focusing on vulnerable productive landscapes in northern and southern Kayes.

7. What can be observed (and has been described above) at the national level, is particularly true for the Kayes region, the area prioritized for GEF TF-LDCF project interventions.

8. The western region of Kayes[11] is about 12 million hectares, has a population of approx. 2 million (9.7% of the population of Mali), and the primary sector ? rain-fed agriculture, forestry, cattle breeding and fisheries ? employs 80% of the population. As a whole, the economy of the Kayes region is thus extremely dependent on climatic conditions. The northern landscapes of the Kayes region (target circles of Kayes, Y?liman?, Nioro du Sahel and Di?ma) are characterised by low-altitude plateaus, surrounded by hilly areas. The Sahelian steppe vegetation is dominated by acacias, *Balanites aegyptiaca* (desert date tree) and jujube. Annual rainfall[12] in the northern landscapes has been measured at 518 mm on average annually since 2000 in the Nioro circle and 628 mm in Kayes. The southern landscapes (target circles of Kita and Bafoulab?) benefit from a Sudanese climate with slightly higher annual rainfall (560 mm in Kita per annum on average since 2000; 753 mm in Bafoulab?). The vegetation is characterised by a diversity of shrubs and trees (including Borassus and raffia palms, baobab, shea tree, duguto and n?r? trees). The Senegal river flows across the Bafoulab? and Kayes circles, and the Manantali dam over the Bafing river provides irrigation water to approx. 76,000 hectares in the region, as well as 13% of the Malian electricity consumption[13]. Various ethnic groups (characterised by specialised activities, e.g. fishers, sedentary and transhumant farmers)live in the area, while others come from neighboring countries to graze their livestock during the dry season. Ethnic groups include Sarakol?, Khassonk?s and Peulhs in the northern landscapes, and Malink?s in the southern landscapes.

9. Households rely on farming (livestock, millet, sorghum, rice, cotton, sesame, fonio, Arabic gum) and on remittances sent by the diaspora (60% of which are directed to women); 53% of rural households under the poverty line (against 47% on average in Mali[14]). Women are particularly involved in rice cultivation and horticulture. Rain-fed agriculture is mostly extensive and relies on the expansion of arable land through deforestation to increase production ? in particular cereals. Combined with the impacts of climate change, this type of agriculture increases the risk of soil erosion (both wind and runoff-induced) and land degradation, with associated consequences such as a decline in land productivity (see Figure 6), a decrease in carbon sequestration potential and a loss in biological diversity.

10. As a result of degraded environmental and climatic conditions, population from the northern, drier areas have been migrating to the southern, more humid parts of the region ? in addition to transborder migrations from Mauritania. This has amplified the pressure on already-degraded natural resources, multiplying the risks of conflicts between competing uses of such resources (e.g. between herders and growers, agro-sylvo-pastoralists and gold seekers, loggers and harvesters of Non-Timber Forest Products ? NTFP ? such as Arabic gum).

11. Table 1 below summarises additional information on the northern and southern landscapes of the Kayes region.

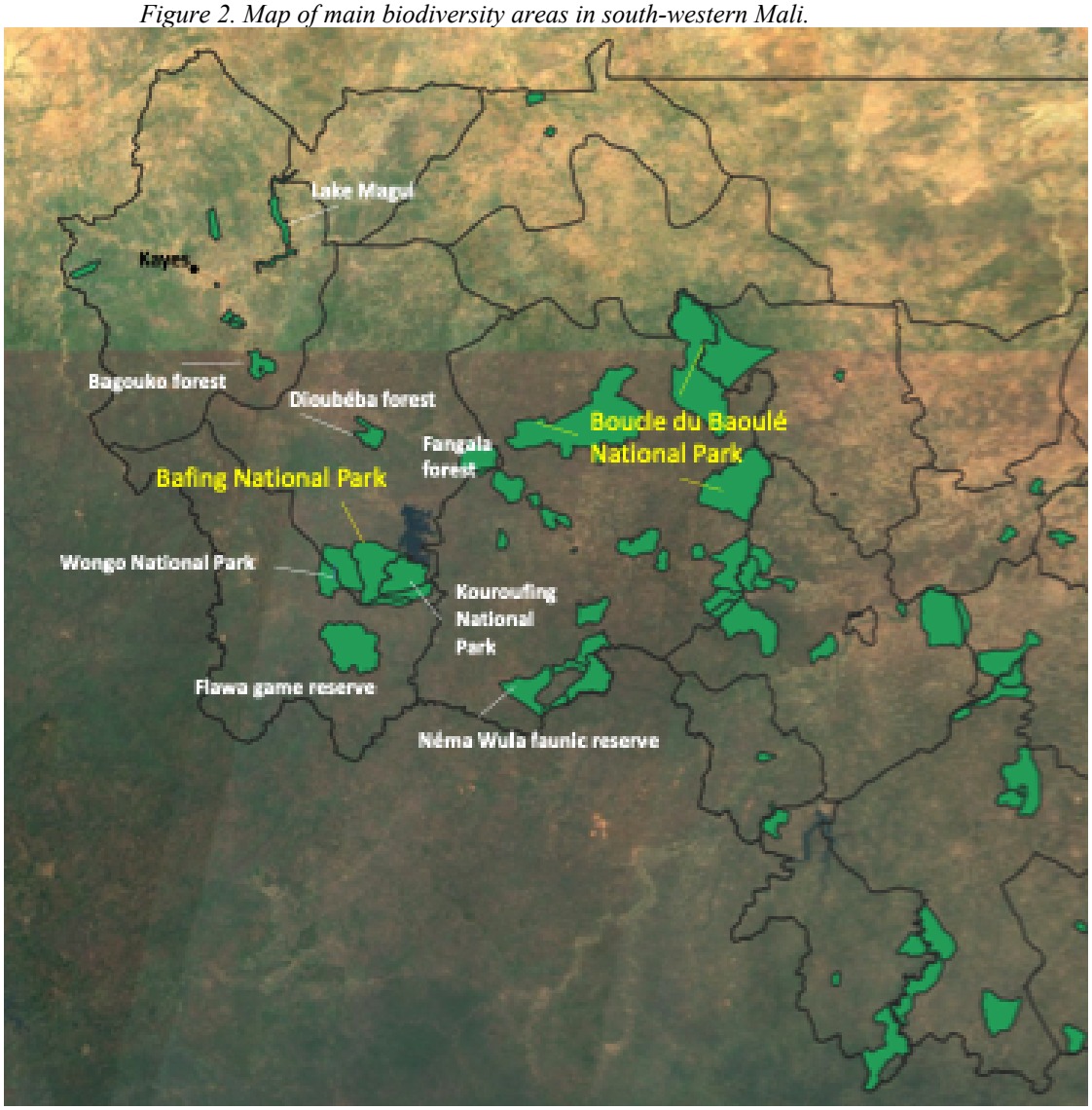
Table 1. Main characteristics of northern and southern landscapes.

	Northern landscapes	**Southern landscapes**
Circles	Kayes, Y?liman?, Nioro du Sahel and Di?ma (population of 1.97 million)	Kita and Bafoulab? (population of 841,000)
Climate	Sahelian (annual rainfall between 350 mm and 800 mm)	Sudanese (560 mm in Kita per annum on average since 2000; 753 mm in Bafoulab?)
Agriculture	? Mostly short- and ultra-short-cycle crops, dry cultures ? Average to medium agricultural potential ? Relative importance of flood-recession crops but erratic productivity ? Limited use of farm inputs compared with Southern landscapes ? Low to very low forage potential ? Length of the agricultural season: 45 to 90 days ? High cattle pressure (transhumance area)	? Longer-cycle crops such as cotton, rice ? Medium to high agricultural potential ? High to very high forage potential ? Length of the agricultural season: 90 to 120 days
Land degradation	? Strongly-degraded land, requiring more important resources for land rehabilitation ? Overgrazing, slash-and-burn agriculture, overharvesting of wood, bushfires	Degraded land with fragmented natural habitats
Biological diversity	Relatively limited biological diversity because of strong land degradation and destruction of natural habitats. The fauna is particularly threatened in northern landscapes.	Higher biological diversity, but decrease in forest species (e.g.guenou, lingu?, siri, tamarind, n?r?, sana). Some animal species have disappeared or are highly threatened (e.g. lions, elephants, giraffes, panthers, antelopes).
Migration influence and international cooperation	? High dependence on remittances from diaspora, with very active diaspora associations ? Important role of projects, Non-Governmental Organisations (NGO), technical committees etc. ? Limited international cooperation because of the difficulty to achieve significant results	? Important role of projects, NGOs, technical committees etc. ? Relatively strong presence of international cooperation, because of more favorable context to achieve significant results
Safety situation	Potential insecurity (isolated attacks, cattle thefts) but no sign of terrorist activity. The risk remains significant because of the proximity with the Mauritanian border though.	Potential insecurity (isolated attacks, cattle thefts) but no sign of terrorist activity.

12. The Kayes region is home to considerable biodiversity, with 21 forest reserves[15] for a total of 260,545 ha. Two IUCN[16] category II national parks (Kouroufing and Wango) are located in the region, as well as the Bafing sanctuary for endangered chimpanzees, a UNESCO Biosphere Reserve (Boucle du Baoul?) and a Ramsar site (Lake Magui). The Bafing catchment is characterised by the presence of numerous mammal species (31 species recorded

in 2002), including rare and endangered species of global significance, such as chimpanzees (*Pan troglodytes verus*), roan antelopes (*Hippotragus equinus*), giant elands (*Tragelaphus derbianus derbianus*), hippopotamuses and lions. Other mammals found in the Kayes region include jackals (*Canis aureus*), wild cats (*Felis silvestris lybica*), African civets (*Civettictis civetta*), bushbuck (*Tragelaphus scriptus*), porcupines (*Hystrix cristata*), dwarf forest buffaloes (*Syncerus Caffer Nanus*) and African wild dogs (*Lycaon pictus*). The region also hosts a significant diversity of bird species. In particular, Lake Magui constitutes a source of food and resting ground for several migrating birds with over 95 species identified, including garganey (*Anas querquedula*), northern pintail (*Anas acuta*), glossy ibis (*Plegadis falcinellus*) and the purple heron (*Ardea purpurea*). Significant flora in the Kayes region includes Borassus and raffia palms, baobab (*Adansonia digitata*), shea trees, duguto and n?r? trees. Endemic flora species include *Euphorbia sudanica*, *Vepris heterophylla* also called Kita quinqu?liba and *Gilletiodendron glandulosum.* The main biodiversity-rich areas in south-western Mali are shown on Figure 2. Key Biodiversity Areas (KBA) are indicated in yellow.

Figure 2. Map of main biodiversity areas in south-western Mali.



b) National framework for the management of productive landscapes

Institutional context

At the national level

13. Under the **Ministry of Agriculture, Livestock and Fisheries** (Minist?re de l?Agriculture, de l?Elevage et de la P?che, **MAEP**), the mission of the **National Directorate for Agriculture** (Direction Nationale de l?Agriculture, **DNA**) is to elaborate the elements of the national agricultural policy and to ensure the coordination and control of its implementation. To this end, it is in charge of:

? designing and monitoring the implementation of measures and actions aimed at increasing production and improving the quality of agricultural, food and non-food goods;

? ensuring the promotion and modernisation of the agricultural sector;

? designing and monitoring the implementation of training, advisory, extension and communication activities for farmers;

? elaborating and ensuring the application of regulations relating to phytosanitary control and packaging of agricultural products;

? drawing up and implementing measures to enhance the value and promotion of harvested products;

? contributing to the design and implementation of the human resources training policy in the agricultural sector;

? participating in the development and monitoring of quality standards for agricultural products and inputs; and

? ensuring the collection, processing and dissemination of data relevant to agriculture.

14. Also under the MAEP, the mission of the **National Directorate for Rural Engineering** (Direction Nationale du G?nie Rural, **DNGR**) is to draw up policy elements in terms of hydro-agricultural development, equipment and rural land use, as well as to monitor and coordinate the implementation of these policies. It ensures the following activities:

? the evaluation of the potential of developable resources and the elaboration of plans for the development of the territory as well as the support to the local authorities;

? the development of methodologies and systems for the rational and sustainable management of agricultural equipment;

? participation in the development and monitoring of the implementation of rural land policy; and

? the study and monitoring of the implementation of investment projects and programmes in the fields of agricultural resource development and rural equipment.

15. Within the MAEP, the **National Directorate for Livestock and Animal Production** (Direction Nationale de la Production et Industrie Animale, **DNPIA**)[17] is responsible for the livestock sector, with the following functions:

? improvement of traditional livestock activities through training and extension for producers, including support for partnership and cooperation between producers and other actors in livestock value chains;

? development of pastoral areas, promotion of feed-processing industries and support to fodder production to spur intensive animal production;

? strengthening of animal health infrastructure and services;

? quality control improvement for livestock services and inputs, and animal products;

? support to processing industries for livestock byproducts (food, hides and skins, animal manure); and
? identification of stable and remunerative markets for livestock products.

16. The **Ministry of Environment, Water and Sanitation** (Minist?re de l?Environnement, de l?Assainissement et du D?veloppement Durable, **MEADD**) is the national authority in charge of environmental management. Under the MEADD, the **National Directorate for Water and Forests** (Direction National des Eaux et For?t, **DNEF**) is responsible for drawing up the bases for national policy on water, forests, hunting, soil conservation, national parks, protected areas and ecological monitoring. In particular, it is leading planning and oversight in the fields of combating desertification, sustainable development of forests and promotion and upgrading of forest products and wildlife.

17. An agency of the MEADD, the **Agency for Environment and Sustainable Development** (Agence de l?Environnement et de D?veloppement Durable, **AEDD**) ensures the coordination and implementation of the National Policy on Environmental Protection and the integration of environmental aspects into all policies. More specifically, the AEDD is in charge of:
? strengthening capacities of people involved in environmental management, combating desertification, climate change and sustainable development, through the elaboration of modules, information support tools, education and communication, information and awareness-raising trainings;
? monitoring financial mechanisms and mobilising funds;
? ensuring the coordination, monitoring and implementation of relevant conventions, agreements and international treaties ratified by Mali;
? contributing to the mainstreaming of environmental aspect in the design of projects, programmes and land-use plans through the development of guides on environmental action coherence and support to local governments;
? elaborating the National Report on the state of the environment;
? collecting data and producing statistics on the environment and sustainable development;
? disseminatig research results on biotechnology relevant to environmental protection, fight against desertification, climate change and sustainable development; and
? participating in the implementation of the Environmental Action Plan?s programmes.

18. Under the **Ministry of Energy and Water** (Minist?re de l?Energie et de l?Eau, **MEE**), the responsibilities of the **National Directorate for Water Resources** (Direction Nationale de l?Hydraulique, **DNH**) include:
? inventory and evaluation of the water resources development potential;
? oversight of studies for, and supervision of, the construction of hydraulic works and their proper operation and management; and
? participation in sub-regional initiatives to manage water resources.
The hydrological network has 140 stations, of which 103 stations are operational.

19. Part of the **Ministry of Security and Civil Protection**, the **Directorate General for Civil Protection** (Direction G?n?rale de la Protection Civile, **DGPC**) is the coordinating body for disaster risk management. The DGPC?s primary mission is to develop action plans under the National Civil Protection Policy and to ensure its implementation, while also ensuring inter-

ministerial coordination for mainstreaming disaster risk management and climate change adaptation among sector-specific activities.

20. Under the **Ministry of Equipment and Transport**, **MALI METEO** is an agency with the mandate to provide reliable and timely weather and climate information, as well as appropriate services to public and private users. Its network of meteorological observations includes 60 synoptic and automatic stations, 4 weather radars, 54 agro-meteorological stations, 214 rainfall observation stations, 2 systems to receive METEOSAT Second Generation satellite images.

21. In 2003, Mali created the **Food Security Commissariat** (Commissariat ? la S?curit? Alimentaire, **CSA**). Chaired by the Prime Minister, the CSA establishes food security policies, implements the national food security strategy, and provides coordination during food security crises. Food security and nutrition monitoring is carried out by the **Early Warning System** (Syst?me d?Alerte Pr?coce, **SAP**), under the Office of the President. The current mandate of SAP makes it responsible for the monitoring of food production, determining areas at risk and identifying vulnerable populations. SAP coordinates information obtained from over 20 members of its network, including NGOs, regional and international organisations.

22. The **Ministry of Solidarity and Humanitarian Action** (Minist?re de la Solidarit? et de l'Action Humanitaire, **MSAH**) draws up and implements national policy in the areas of poverty reduction, sustainable human development, social action and protection and the promotion of the elderly. As such, it is in charge of the elaboration and implementation of appropriate policies and strategies to reduce poverty, fight against social exclusion and contribute to sustainable human development.

23. Under the **Ministry for the Advancement of Women, Children and Family**, the **National Directorate for the Advancement of Women** (Direction Nationale de la Promotion de la Femme, **DNPF**) is in charge of elaborating the elements of the National Policy for the Advancement of Women as well as coordinating and monitoring the implementation of the said policy. As such, it is responsible for:

- elaborating programmes and action plans for the promotion of women;
- carrying out studies, research and surveys relating to the legal, economic, social and cultural status of women;
- conducting actions aimed at reducing disparities between men and women in all fields;
- coordinating, following up and monitoring activities for the promotion of women carried out by public services and organisations;
- ensuring that the gender dimension is taken into account in the formulation and implementation of development policies;
- monitoring and evaluating initiatives and actions for the advancement of women carried out in particular by associations and non-governmental organisations; and
- supporting actions aimed at reducing female poverty and ensuring effective participation of women in sustainable development.

At the decentralised level

24. Decentralisation has been a long-term process officially supported by the GoM since the independence of Mali in 1960. The first practical steps of the decentalisation process were taken in 1999, with the creation of an adequate legal framework, establishment of sub-national collectivities and intiation of transfers of competence and resources from the central government[18]. Mali is composed of four levels of government: the national administration, eight regions, 49 districts (cercles) and 703 communes. The latter three are local government authorities. The subnational governments have financial autonomy and legal personality. Although each local authority has autonomy over its management, *de facto* power is exercised under the control of the state and administrative law. The decentralisation process is guided by the Framework for the National Decentralisation Policy 2015-2024 (Document Cadre de Politique Nationale de D?centralisation).

25. The commune is the basic structure of decentralised authorities[19]. It is governed by a deliberative body (the communal council) elected for five years and by an executive body (the communal office) composed of the mayor and his deputies. The cercle is the intermediate level authority for ensuring coherence between the region and the commune. Its deliberating body is the cercle council composed of members elected by the communal councils. Its executive body is the bureau of the cercle council composed of the president and two vice-presidents. The region is made up of several circles and has the function of ensuring the coherence of development and spatial planning strategies. Its deliberative body is the regional assembly, which elects from among its members an executive body (the bureau) consisting of the president and two vice-presidents.

26. The various levels of government have shared and specific competences. Both the communal council and the district council or the regional assembly deliberate, among other things, on the following topics relevant to the proposed project: environmental protection, spatial planning operations of the community, state and land management, road and communication infrastructures classified in the area of the community and organisation of rural activities and agro-sylvo-pastoral production. Rural and urban hydraulics, as well as the elaboration of land-use plans and operations for the development of the communal space, fall within the competence of the communal council.

27. At the regional, cercle and communal levels, Committees for the Guidance, Coordination and Monitoring of Development Actions are established[20]:

- At the regional level, the CROCSAD (Comit? R?gional d?Orientation, de Coordination et de Suivi des Actions de D?veloppement) meets bi-annually and when required. It advises on the regional development programmes and ensures their coherence. It is also ensures the participation of all relevant parties in institutional reforms at the regional level.
- At the cercle level, the CLOCSAD (Comit? Local d?Orientation, de Coordination et de Suivi des Actions de D?veloppement) has similar missions as the CROCSAD. It meets every four months and when required, and sends its reports to the CROCSAD.
- At the communal level, the CCOCSAD (Comit? Communal d?Orientation, de Coordination et de Suivi des Actions de D?veloppement) has similar missions as the CROCSAD and the CLOCSAD. It meets quaterly and when required, and sends its reports to the CLOCSAD.

28. The mission of Regional Development Agencies (Agences de D?veloppement R?gional, ADR) is to assist local authorities within their territorial jurisdiction in the exercise of project management for regional and local development. This includes: i) planning of development operations in the areas of competence of local and regional authorities; ii) preparation and programming of development operations, in particular those relating to the improvement of infrastructure, equipment and/or public services to the population; iii) carrying out development operations; and iv) resource mobilisation for the financing of local and regional development. ADRs work on a demand basis: local authorities are entitled to approach their regional ADR and solicit assistance with their development planning and operations. Examples of activities conducted by the Kayes ADR over the last years include[21]:

- conducting training sessions on the identification of high-potential value chains (Di?ma circle, 2018);
- technical assistance for the design of local conventions on child protection on gold mining sites (K?n?i?ba circle, 2018);
- technical assistance for the design of communal Economic, Social and Cultural Development Programmes (5 communes, 2018);
- assistance in the procurement processes for the enhancement of livestock yards (2018);
- study on fiscal revenues available to fund communal Economic, Social and Cultural Development Programmes (28 communes, 2019); and
- support for the design of a three-year emergency plan to cope with the settlement of migrants (Souransan commune, 2019).

29. Locally, relevant bodies for the implementation and discussion of matters pertaining to landscape management are the Agriculture and Land Committees (Commissions Agricoles et Fonci?res, COFO) at the commune level. COFOs are responsible for[22]: i) reconciling the parties to an agricultural land dispute before it is referred to the competent courts; ii) contributing to the inventory of customs and usages in land matters; iii) participating in the establishment of the land register at the level of the community concerned; iv) participating in the elaboration and implementation of the land management policy of the community concerned; and v) giving an opinion on all land matters referred to them. COFOs are the bodies responsible for the implementation and surveillance of the Sch?mas Locaux d?Am?nagement (Local Land Management Plans, SLA). COFOs are composed of elected communal authorities, representatives of agricultural sub-sectors designated by the Regional Chamber of Agriculture and farmer?s associations and representatives of the communal women and youth associations.

30. Decentralised competences in the areas relevant to the present project are defined by four decrees:

? Decree N?2018-0079 from 29 January 2019 on the management of forests and animal resources;
? Decree N?2016-0273 from 29 April 2016 on agriculture and rural equipment;
? Decree N?2015-0543 from 6 August 2015 on livestock and fisheries; and
? Decree N?02-315 from 4 June 2002 on drinkable water.

31. However, the transfer of competence is an ongoing process and current practices do not always reflect the objectives described in the above-mentioned decrees. In addition, some decisions and their implementation are effectively managed at sub-commune levels (e.g. village, community) not formally recognised as collectivities. The table below provides an overview of decentralised competences for areas relevant to the proposed project.

32. A new administrative division was adopted since the approval of the PIF, with the original target cercles described in the PIF now belonging to three regions:
    - ? Kayes region: Kayes, Bafoulab? and Y?liman? cercles;
    - ? Nioro region: Nioro and Di?ma cercles; and
    - ? Kita region: Kita cercle.

Policy framework

33. With the Strategic Framework for Economic Recovery and Sustainable Development (Cadre Strat?gique pour la Relance Economique et le D?veloppement Durable, CREDD, 2019?2023), the government of Mali (GoM) has established a unique reference framework to integrate its economic, social, and institutional policies. The CREDD?s global objective is reaching the United Nations Sustainable Development Goals based on Mali?s potentialities and resilience capacity for an inclusive development aiming at reducing poverty and inequalities in a peaceful and unified Mali. CREDD objectives include : i) guaranteeing and improving food and nutritional security for all, but notably for the most vulnerable segments of the population; ii) expanding social protection and promoting a social and solidarity economy; and iii) promoting solidarity and reinforcing humanitarian actions.

34. National strategies and programs for sustainable development give due consideration to agriculture. As a complement to the 2006 Agriculture Orientation Law (Loi d?Orientation Agricole, LOA), the most recent and relevant policy documents and investment frameworks include the Agricultural Development Policy (Politique de D?veloppement Agricole, PDA), the National Agriculture Sector Investment Plan (Plan National d?Investissement du Secteur Agricole, PNISA), the Agricultural Land Tenure Policy (Politique Fonci?re Agricole, PFA), the Agricultural Land Tenure Law (Loi Fonci?re Agricole, LFA) and the National Seed Policy (Politique Nationale Semenci?re, PNS). For food and nutritional security, Mali has the Country Resilience Priorities (Priorit?s R?silience Pays, PRP, 2015-2035) and the National Food and Nutrition Security Policy (Politique Nationale de S?curit? Alimentaire et Nutritionelle, PoLSAN). In the livestock sector, Mali adopted a National Livestock Development Policy (Politique Nationale de D?velopment de l?Elevage, PNDE), a Charte Pastorale[23] (Pastoral Charter) and a five-year Pastoral Development Plan[24] 2019-2023. For irrigation, Mali has a National Irrigation Development Strategy (Strat?gie Nationale de D?veloppementde l?Irrigation, SNDI), a National Proximity Irrigation Program (Programme Nationale d?Irrigation de Proximit?, PNIP). In the following, a selection of these key policies are further described.

35. **Agriculture Orientation Law (Loi d?Orientation Agricole,** LOA), 2006, and **Agricultural Development Policy (Politique de D?veloppement Agricole**, PDA), 2013 : the LOA determines and conducts Mali's long-term agricultural development policy. It aims to promote sustainable, modern family farming and agricultural enterprise through the creation of an

environment conducive to the development of a structured agricultural sector. The LOA concerns all the economic activities of the agricultural and peri-agricultural sector (processing, transport, trade, distribution and other agricultural services) as well as their social and environmental functions; it is complemented by the PDA.

36. The **Politique de D?veloppement Agricole (PDA**) is in line with the LOA guidelines. Its goal is to "contribute to making Mali an emerging country where the agricultural sector is a driving force of the national economy and a guarantor of food sovereignty in a logic of sustainable development" and includes eight strategic orientations. The proposed project is of particular relevance to the second and fourth strategic orientations of the PDA.
    - ? The second strategic orientation aims to conserve natural resources and improve their management. This includes promoting equitable and secure access to land resources, and ensuring the sustainable use and conservation of natural resources (forests, fisheries, fauna, pastures etc.).
    - ? The fourth strategic orientation aims to improve the competitiveness of agricultural and agro-industrial products on domestic, sub-regional and international markets through: i) the establishment of competitive and efficient plant sectors and modernised and profitable animal sectors; ii) sustainably productive fisheries and aquaculture sectors; iii) forestry and wildlife sectors generating income and employment; iv) national products of recognised and certified quality through the generation of added value and the promotion of the consumption of Malian products.

37. **Agricultural Land Tenure Law (Loi Fonci?re Agricole**, LFA), 2017: promulgated in April 2017, the Agricultural Land Tenure Law includes important innovations in its content. In particular, it recognises the prevalence of customary rights and local land management (including customary land rights of families and village communities), and provides for a "cartography of customs and traditions" to be drawn up for each territory. The law establishes a system of local land management with the creation of agricultural and land commissions at the community and village levels (PSDR). It includes provisions to give legal force to the resolution of conflicts by land commissions. Local rules and rights of access to natural resources are guaranteed by local conventions. Finally, the use of 15% of agricultural land is reserved for so-called "vulnerable" groups, women and young people.

38. Mali completed its initial National Communication to the United Nations Framework Convention on Climate Change (UNFCCC) in 2000 and its National Adaptation Programme of Action (NAPA) in 2007. Mali?s plans and strategies relevant to its international commitments under the UNFCCC are further described in Section 7. In 2011, Mali completed additional components of its climate governance framework with the **National Climate Change Policy (Politique Nationale sur les Changements Climatiques, PNCC**), the **National Climate Change Strategy (Strat?gie Nationale Changements Climatiques, SNCC**) to operationalise the PNCC and a **National Climate Action Plan (Plan d?Action National Climat, PANC**) to translate the objectives of the SNCC into concrete actions.

39. The proposed project is of particular relevance to Strategic Axes VI and VII of the SNCC, namely mainstreaming climate change in sectoral policies (especially agriculture, livestock, water and forestry) and at the territorial scale, respectively. Exemples of actions quoted under these axes and supported by the project include:

- improving the management of agricultural water;
- combating the degradation of riparian forests;
- sharing information and raising awareness on climate-smart planning of agricultural activities;
- promoting the use of meteorological data for agricultural planning, including through the use of seasonal projections;
- promoting the use of climate-resilient crops;
- promoting the diversification of agricultural products;
- promoting sustainable land management practices (including reforestation and afforestation);
- increasing the value-added of agricultural products through adequate transformation processes;
- improving the participation of producers in decision-making processes pertaining to the sustainable management of agro-sylvo-pastoral resources; and
- enhancing the capacity of extenstion services to implement and monitor climate-relevant actions in their areas of competence.

40. The protection of the environment is rooted in the Constitution of Mali of 1992, which states that ?any person is entitled to a healthy environment. Protection, the defense of the environment and the promotion of the quality of the life are a duty for all and the State?[25]. In 1998, Mali adopted a **National Policy for Environmental Protection** (**Politique Nationale de Protection Environnementale, PNPE**) with the aim to: i) contribute to the economic and social sustainable development of the country; ii) to food security; and iii) fight against any form of pollution, the degradation of natural resources and desertification. The **National Biodiversity Strategy** (adopted in 2001, revised in 2014) was adopted in the context of Mali?s ratification of the United Nations Convention on Biological Diversity (UNCBD). It is further described in Section 7.

41. The **Vocational Training Policy (Politique de Formation Professionnelle**, 2009) aims to guide the intervention of the State, local authorities, the private sector and technical and financial partners in the field of vocational training. The right to vocational training is recognised for all citizens seeking employment or working. It is exercised within the limits of the means of the State, local authorities and private employers (Art.2). Public or private vocational training structures that meet the guidelines and objectives of the national vocational training policy and that comply with the organisational, operational and management standards laid down by decree may benefit from technical or financial support from the State (Art. 14).

42. Regions have planning tools such as the Regional Land Planning Scheme (Sch?ma R?gional d?Am?nagement du Territoire, SRAT) and the Strategic Regional Development Plan (Plan Strat?gique de D?veloppement R?gional, PSDR). In the Kayes region, the SRAT and PSDR were adopted in 2008 and 2019, respectively. The proposed project is fully aligned with the regional objectives laid out in the PSDR, especially in terms of management of pastures (e.g. supporting the production of fodder), increased integration between the livestock and agricultural sectors and development of access to finance for rural communities.

43. Districts and communes prepare **Economic, Social and Cultural Development Programmes (Programme de D?veloppement Social, Economique et Culturel**, PDSEC) reflecting their

development objectives and their own medium-term investment needs, including those for agriculture, in accordance with challenges and opportunities faced. Five-year PDSECs are designed at the communal level, with the support of the ARD. Developed through a participatory approach, they include synthetic analyses of development objectives, barriers and baseline per development area. These objectives are ranked by order of priority. Concrete activities are described in a draft operational framework, including cost estimates (shared between the commune and development partners) and tentative agendas. Some communes also have a Local Land Management Plan (Sch?mas Communal d?Am?nagement Territorial, SCAT), that can be complemented by intercommunal and inter-circle pastoral conventions (see Baseline section and Annexes R1 & R2).

c) Project intervention sites

General context: location, population, land use and status of natural resources

Figure 3. Location map of target communes in the northern and southern landscapes.

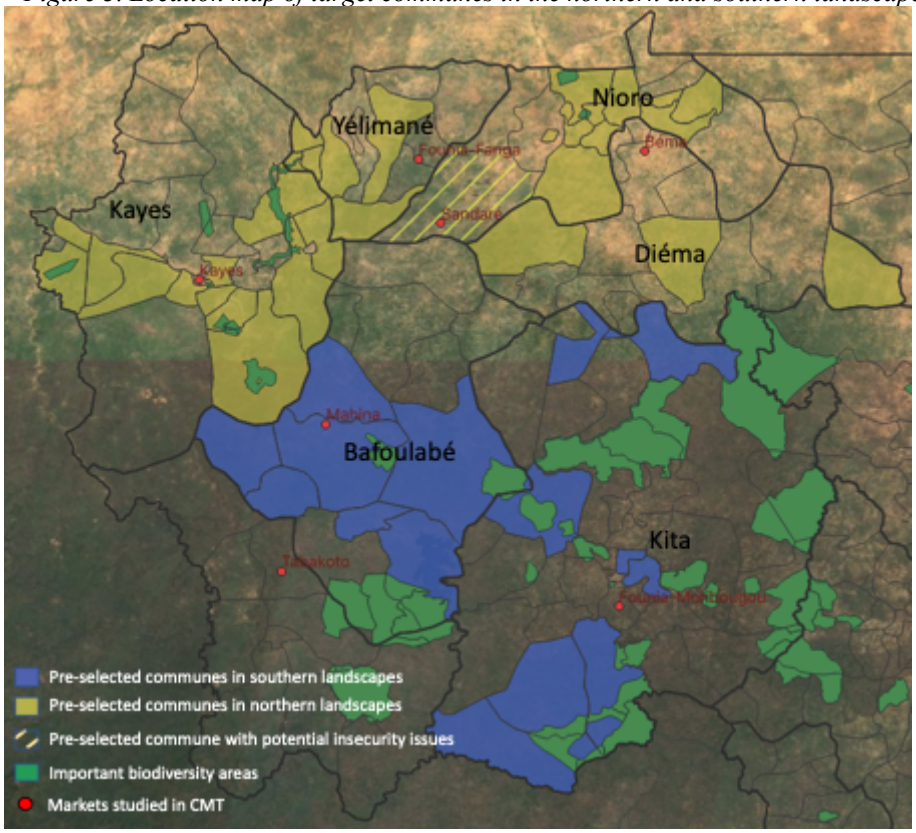


Table 2. Surface and population of the target communes within each circle.

Circle	Surface (ha)	Population
Di?ma	345,409	52,907
Kayes	684,621	145,151
Nioro	371,531	111,974
Y?liman?	594,763	216,483
Bafoulab?	1 637,754	261,177
Kita	801,325	115,463

Total	*4,435,402*	*903,156*

44. The topography of the Kayes Region is dominated by the Tambaoura cliff which covers a large part of the Kayes circle. The highest point is in the vicinity of Balearic in the former district of Sagabary, with an altitude of 806 meters, and the lowest point is in Kotera in the former district of Ambidedi at 27 meters above sea level.

45. Climate-wise, the region covers a Sahelian zone in the North and a Pre-Guinean zone in the South. Between these two zones lies the Sudanian zone. The characteristics are a function of the rainfall of the seasons and the ecological zones varying from one climatic zone to another. The Land Resources Inventory Project characterises the region's climates as shown below.

Table 3. Climatic zones in the Kayes region[26].

Climate zones	Approximative area	Geographical frontiers		Synoptic stations
		North	South	
Humid or North Guinean	17,719 km?	Kassama to Sirakoro	Guinean border	Kenieba
Humid Sudanian or South Sudanian	46,195 km?	Diamou to Koloka	Kassama to Sirak	Kita
Semi-arid or North Sudanian	39,395 km?	Yeliman? to Simbi	Diamou to Kolokan	Kayes
Arid or Sahelian	17,451 km?	Mauritanian border	Y?liman? to Simbi	Nioro

Climate projections

46. While a fully-developed Climate Risk Assessment will be produced at the inception stage of project implementation, Figures 4 and 5 below provide projections for two key climate variables ? namely, monthly temperature and precipitation ? for three climate scenarios and four time horizons.

Figure 4. Projected change in monthly temperature in the Kayes region (baseline period 1986-2005) for four time horizons and three Representative Concentration Pathways (RCP) scenarios[27].

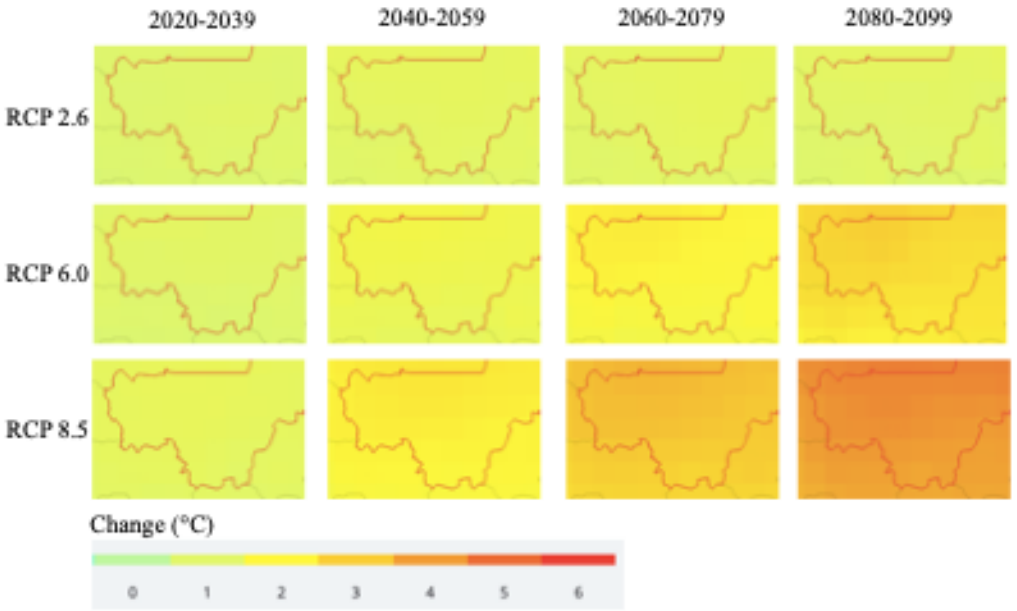
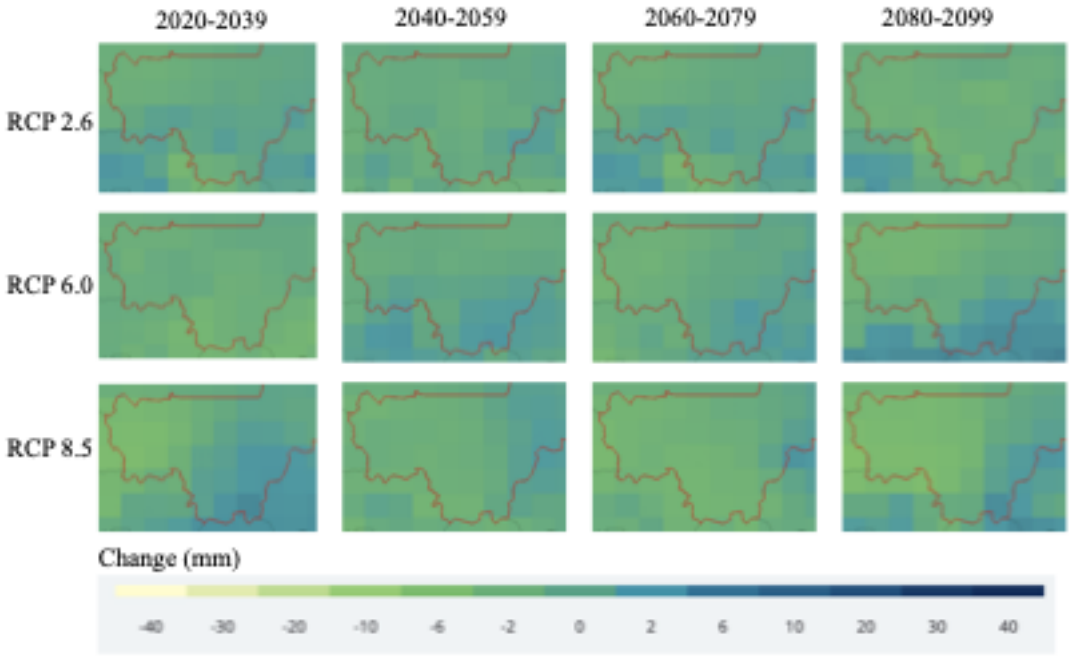


Figure 5. Projected change in monthly precipitations in the Kayes region (baseline period 1986-2005) for four time horizons and three RCP scenarios[28].



47. Mean annual temperatures across Mali are projected (RCP 2.6 and RCP 8.5) to increase by 1.2 to 3.6?C by the 2060s, and by 1.8 to 5.9?C by the 2090s, and this rate of warming is projected to be similar across all seasons. The number of hot days and hot nights are projected to increase across the country by 18 to 38% and 23 to 40% by 2060, with a more rapid rate of increase in the south.

48. In terms of precipitations, more frequent El Ni?o events could increase the frequency and intensity of droughts across Mali. Although significant changes in the duration of the dry spells are projected, particularly between November and March, there is uncertainty as to the direction of change, with some models indicating increases in the duration of the dry spells while others suggest decreases. As yet, there are thus no univocal precipitation change projections for Mali under a future climate. However, projections used by the GoM to analyse adaptation strategies for the agricultural sector[29] conclude that precipitations are generally likely to decrease across Mali, with decreases ranging from 5 to 10% by 2050 and up to 22% by 2100. This would translate in a southward migration of precipitation isohyets.

49. According to these projections (source : Institut d??conomie Rurale. 2020. Adaptation de l?Agriculture et de l??levage au Changement Climatique au Mali - R?sultats et le?ons apprises au Sahel) ? to be further corroborated by the Climate Risk Assessment to be conducted at the start up of the implementation phase ? future climate impacts are likely to include:

? a 35% decrease in water resources by 2025 for surface water and 13% for renewable aquifers, compared with the 1961-1990 average;

? an increase in the frequency of floodings and extreme weather events with negative impacts on the living conditions of populations, especially in terms of access to drinking water, health and food security; and

? more frequent droughts in the first half of the rainy season, from May to July.

50. In terms of projected yield changes, model results indicate a negative trend for maize, millet, sorghum and groundnuts[30]. Over the last 60 years, the northern limit for rainfed millet and sorghum ? key household subsistence crops ? has shifted southward by approximately 50km. This trend is likely to continueas temperature increases reduce soil moisture[31].

51. While maize is sensitive to temperatures above 35?C, millet, sorghum and groundnuts are more tolerant to high temperatures and dry spells[32]. Compared to the year 2000, yields are projected to decline by 13% for maize, 12% for millet and sorghum and 7% for groundnuts by 2080 under RCP 6.0. Under RCP 2.6, yields are projected to decline by 8% for maize, millet and sorghum, and by 14% for groundnuts. In contrast, rice yields could benefit from climate change. Under RCP 6.0, yields are projected to increase by 29% by 2080 compared to the year 2000. One reason for the positive results under RCP6.0 is that rice is a so-called C3 plant, which has a different metabolic process than maize, millet and sorghum (C4 plants), and benefits more from CO_2 fertilisation when the concentration increases. Cowpea yields are expected to decrease under RCP 2.6 and remain unchanged under RCP 6.0.

52. Droughts have been particularly studied in the Malian context, as they are recognised as one of the most distressing phenomenon for the agricultural sector. However, most available studies focus on a historical analysis of droughts and their impacts[33], with few studies providing detailed projections of drought occurrence and impacts depending on time horizons and emission scenarios (one of the most referenced projection studies[34] is from 2005). Gassroot perception of droughts points to a clear reognition of aggravating impacts[35], and local communities often report being powerless in the face of impacts on agricultural productivity and degradation of natural resources[36]. A more site-specific analysis of the impacts of climate change ? including drought ? is required to inform land-use planning and the choice of best agricultural pratices to be disseminated under Component 2 of the proposed

project. This will be the objective of the Climate Risk Assessment to be conducted at inception (Activity 2.1.5). Overall, while some climate impacts are still uncertain, several adverse effects of anticipated climate change are documented with a strong level of confidence and legitimise investments into adaptation strategies and actions.

In conclusion, most available studies on drought focus on past or current droughts and associated coping mechanisms. When it comes to anticipated risks, detailed analyses on drought exposure (measured through a drought index based on soil moisture projections) are mostly available at the national level and show heterogeneity of results across models. For example, the Postdam Institue for Climate Impact Research conducted a meta-analysis of four Global Climate Models (IPSL-CM5A-LR, GFDL-ESM2M, MIROC5, HadGEM2-ES) and six Global Hydrological Models (CLM45, H08, LPJmL, MPI-HM, PCR-GLOBWB, WaterGAP2) to assess projections of the area of cropland exposed to at least one drought per year . While, under RCP 6.0, the median of all models indicates that the indicator will remain virtually unchanged in response to global warming by 2060, the variance around the median is substantial across models. Indeed, some models predict a large increase in drought exposure. The range of probability of annual cropland exposure to drought would widen from 0.2-4.5% in 2000 to 0.03-15.0% in 2080. The range of high probability also widens from 0.1-13.6% in 2000 to 0.02-29.4% in 2080. This means that, according to some models, the risk of exposure to drought would increase threefold under an intermediate (RCP 6.0) emission scenario, while other models predict no change at all. This uncertainty at the national level is confirmed by a review of the new generation CIMP6 models.

Zooming in on the project target areas and looking at projections of annual Standardised Precipitation-Evapotranspiration Index (SPEI) through various CIMP6 individual models (under a mid-range scenario SSP2-4.5 and by 2060) indicate that westernmost and northernmost target circles could become more drought-prone than southernmost circles. This is the prediction of models CNRM-ESM2-1 and GFDL-ESM4; conversely, models FGOALS-G3 and MIROC6, MRI ESM2-0 do not predict a significant difference across target circles (all would be affected by increased droughts).

Other characteristics

53. The Senegal River is the most important river in the region. It is formed in Bafoulab? by the Bakoye and the Bafing rivers. The Diama and Manataly dams allow to regulate the flow of the Senegal River and provide irrigation water in the nearby agricultural lands.

54. The subsoil of the Kayes region has significant underground water reserves in the form of cracked water tables, particularly at the level of faults and fractures. Two thirds of the water reserves are located between 20 and 60m deep with potential characterised as favourable in the north and very favourable in the south. Underground water reserves are fairly well distributed throughout the region.

55. Four types of soil dominate in the Kayes region:

? silty soils of alluvial origin, located along the Senegal River, in the great plains and around the marigots; these fertile, deep soils are partly exploited for the needs of agriculture and horticulture;

? vertisols: located in the large depressions (Doro and Goumbogo ponds), they are fertile but difficult to work; these lowlands are suitable for rice cultivation;
? ferruginous soils are located in dry farming areas; and
? sandy soils, poor overall, occupy most of the Kaarta area (circles of Nioro, Di?ma and part of Kita).

56. Woody resources: the vegetation of the region comprises open formations (savannas, steppes, gallery forests, mosaics of open forests) and more or less closed formations (gallery forests) which dominate in the pre-Guinean zone. These formations are divided into two types.

? The steppes concern the Sahelian zone and cover most of the region (circles of Di?ma, Nioro, Y?liman? and Kayes). They are thorny formations with a predominance of acacias, balanites and zizyphus. Herbaceous consist mainly of grasses. In the Sahelian zone, the majority of woody and grassy species are used for cattle feed.
? Wooded savannas are located in the southern landscapes. In the Upper Bafing and Bakoye zones, rainforest species occur thanks to the prevailing microclimate in forest galleries along the watercourses. There are relics of pre-Guinean vegetation dominated by large trees such as *Parkia biglobosa*, *Vitellaria paradoxa*, *Khaya senegalensis*, *Cola cordifolia*, *Seiba pentadra*, *Bombax costatum*, *Cordila pinata*, *Pterocarpus erinaceus* and other legumes.

57. The total area of classified forests and wildlife reserves in the Kayes region reaches 870,025 ha (out of approx. 12 million ha of total area and a total of 1,300,000 ha of tree-covered areas in the target circles).[37] Classified forests are mostly distributed in the following circles: i) Kita (10 forests for 156,341 ha); ii) Bafoulab? (two forests for 48,000 ha); iii) Kayes (five forests for 39,435 ha); and iv) Nioro (two forests for 9,463 ha). As mentioned previously, two IUCN[38] category II national parks (Kouroufing and Wango) are located in the region, the Bafing sanctuary for endangered chimpanzees, a UNESCO Biosphere Reserve (Boucle du Baoul?) and a Ramsar site (Lake Magui; see Figure 2). The Bafing and Boucle du Baoul? National Parks are Key Biodiversity Areas. Globally-significant biodiversity that the proposed project will contribute to preserve is detailed in paragraph 12; it includes chimpanzees (*Pan troglodytes verus*), roan antelopes (*Hippotragus equinus*), giant elands (*Tragelaphus derbianus derbianus*), hippopotamuses and lions.

58. Land cover in the Kayes region (as of 2019) and land cover change (2000-2019) are summarised in Table 4 below.

Table 4. Land cover (2019) and land cover change in the Kayes region (2000-2019)[39].

	Year 2000 (sq. km)	**Year 2019 (sq. km)**	**Change in area (sq. km)**	**Change in area (percent)**
Tree-covered areas	13,019.43	14,121.78	1,102.36	8.47%
Grasslands	59,879.20	58,019.52	-1,859.68	-3.11%
Croplands	48,145.77	48,900.54	754.77	1.57%
Wetlands	21.02	29.48	8.46	40.26%
Artificial areas	20.16	30.35	10.19	50.53%
Other lands	19.18	18.22	-0.96	-5.00%
Water bodies	712.62	697.48	-15.13	-2.12%

Local economy

59. Cereal growing is a key sector in the Kayes region given the important place it occupies in the regional rural economy, with over 65% of cultivated areas devoted to cereal crops. Cereal production mostly consists of dry cereals (millet, sorghum, maize, fonio) and rice.

60. Cash crops, particularly groundnuts and cotton, have strong agro-climatic potential in the Kayes region. The area of Kita and its surroundings used to be dominated by groundnut cultivation. After the crisis that shook the groundnut sector in the 1970s and 1980s and the devaluations of the CFA franc in the early 1990s however, the cotton company CMDT[40] decided to enlarge the cotton production area to new suitable land, including Kita and the surrounding areas.

61. Groundnut is the second ?industrial? crop in the Kayes region after cotton, with Kita and Bafoulab? being the top two production circles. Several development opportunities can be identified in this sector, including the installation of semi-industrial peanut paste and oil processing units, the use of peanut oil in soap manufacturing, the marketing of shelled peanuts and the improvement of primary processing (sorting, grading, shelling)[41].

62. Horticulture is dominated by potato, tomato, okra, onion, melon, watermelon and mango. Women often play a key role in these sectors, especially for marketing: according to the study on territorial markets conducted during the PPG phase (Annex P), it is the sector in which women are most represented as vendors on surveyed territorial markets (approx. 40% of vendors), along with cereals.

63. Livestock farming is one of the main activities of the populations of the Kayes region, repesenting15% of the overall national livestock production?. It is an important source of income for many rural households through the sale of animals or co-products such as milk, meat, eggs, butter, cheese, hides and skins, etc. Livestock-based value chains exist and have been identified as growth drivers. These include the livestock/meat, leather/hides and milk sectors.

64. In the target circles, livestock farming is typically extensive, with pastureland being the main source of feed for a large proportion of the animals. There are two farming systems: transhumance and sedentary farming. Transhumant livestock rearing, extensive in capital and labour, concerns a minority of herders. The herds, often mixed, can easily count 50 heads and move along a north-south axis according to the availability of water and pasture. Typically, transhumant livestock grazes in Sahelian pastures during the growing season (wintering) and in southern agricultural areas after the harvests[42]. Agro-pastoralists of the region entrust part of their herds to transhumants (e.g. Peulh herders) but, at the same time, they themselves practice more intensive systems: fattening (sale for festivals), ?sedentary? breeding for milk collection or to finance exceptional expenses.

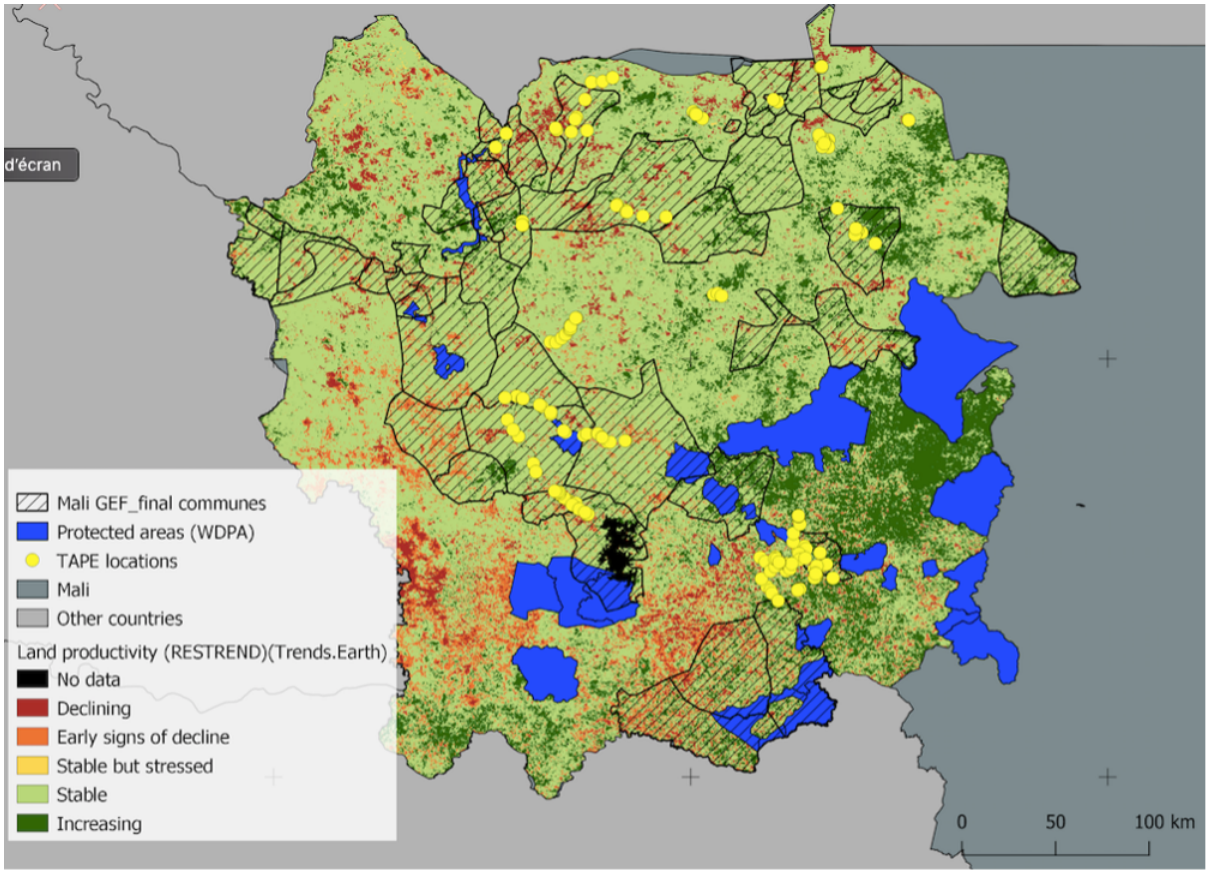
65. Rangelands form the basis of ruminant feeding. During the rainy season, the animals graze fallow land and uncultivated areas unsuitable for agriculture, intensively exploiting areas around villages within a radius of 4 to 5 km, leaving remote areas under-exploited. After harvesting, grazing becomes continuous and the animals take advantage of the grazing land and crop residues. The edges of watercourses and places of regrowth regenerated by early bush fires are the preferred grazing areas.

? Threats, root causes, drivers and barriers

a) Main threats, root causes and drivers

66. Figure 4 below summarises the adverse land productivity dynamics at play in the northern and southern landscapes of the Kayes region.

Figure 6. Land productivity dynamics in the Kayes region (2000-2019)[43].



67. The vast majority of target communes in both northern and southern landscapes have areas showing land productivity decline or stress, an issue further aggravated by climate-induced challenges including increased incidence of crop pest infestations, increased intensity of heat stress on crops and decreased water availability and quality. In total, 13.1% of land in the Kayes region have shown stressed, moderately declining or declining productivity over the 2000-2019 period[44]. Limited agricultural productivity combined with mounting demographic pressure has resulted in accelerated land conversion[45]. Over the past three decades, there has been an expansion of agriculture through the cultivation of marginal lands, shortened fallow periods and the clearing of natural habitats for crops, including woodlands and wetlands. Such trends have contributed to declining soil fertility and the expansion of degraded areas. For example, it was estimated that wind erosion on degraded land generates the formation of sand dunes, leading to a reduction of agricultural productivity in over 20,000 ha in the Kayes region[46].

68. The degradation of soil ? acidification, salinisation ? is caused by both natural processes (such as wind and water erosion) and inappropriate agricultural practices, including misuse of chemical fertilisers, monoculture and overgrazing. Consequences include a threat to biodiversity, conflicts over the use of natural resources, poverty and strong rural emigration.

69. Biodiversity in the Kayes region is threatened by several factors: i) climate change; ii) natural habitat degradation and fragmentation; iii) bushfires; iv) the introduction of exotic species; v) the erosion of genetic resources; and vi) a lack of institutional capacity to foster conservation. Climate change, especially changes in rainfall patterns and prolonged dry spells, affects some animal and plant species, such as specific rice cultivars[47]. Habitat fragmentation is mostly due to land-use practices, such as slash-and-burn agriculture in shallows as well as on steep hillslopes. Another trend fostering habitat fragmentation is the growing importance of the cotton culture, which leads to increasing forest clearing. Forests are also under pressure from unsustainable fuelwood harvesting. Some species are particularly targeted because of the high calorific potential of their wood. Such species include *Combretum glutinosum*, *Pterocarpus erinaceus*, *Pterocarpus lucens* and *Acacia nilotica*. Other tree species ? *Prosopis africana* (Gu?l?) and *Burkea africana* (Siri) ? are particularly sought after for their wood used in local crafts.

70. Bushfires are a major factor affecting biological diversity as well as soil quality. The density and diversity of woody species has been shown to be lower in areas more often affected by fires[48]. Soil organic matter is generally lower in fire-prone areas. Some species ? such as *Gilletiodendron glandulosum*, *Guibourtia copallifera* and *Vepris heterophylla* ? have seen their population decrease as a result of fires, and their ranges limited to areas with lower fire occurrence.

71. Overgrazing is a phenomenon affecting both biological diversity and soil quality. It is mostly the result of unsustainable pasture management, with limited implementation of best pasture management practices such as pasture rotation and the use of fodder. Besides its impact on the herbaceous cover, overgrazing affects the natural regeneration of trees and shrubs. Delimbing by cattle of species such as *Acacia seyal*, *Acacia senegal* and *Balanites aegyptiaca* increases the exposure of tree populations to bushfires and termites. As a result of overgrazing, soil erosion tends to intensify, contributing to the siltation of streams and ultimately degrading water quality and the habitat of aquatic fauna.

72. Although the erosion of genetic diversity is not consistently monitored in Mali, several studies have shown such a phenomenon in agricultural species, mostly cereals. For example, the number of sorgho cultivars found in the Sudano-Guinean zone of Mali has decreased by 60% in ten years[49] under the combined effect of the expansion of cotton culture, the development of maize and the saturation of the agricultural space. Species such as glaberrima rice, voandzou, melon and pennisetum are also threatened[50]. In addition to the factors above, the emigration of local population is sometimes said to contribute to a loss of traditional knowledge on the use of local species.

73. The impacts of anticipated climate changes ? e.g. increase in potential evapotranspiration[51], more frequent and prolonged droughts ? will compound the adverse effects of the non-climate drivers mentioned above. Unsustainable resource management ? which already exacerbates

land degradation processes, decreases the yields of most major crops (cf. paragraph 50) and threatens livestock yields ? will have even more detrimental consequences as future climate change brings more frequent and intense dry spells, shifts in rainfall patterns etc. The result of this process is a vicious circle between lack of income-generating options, degradation of natural resources and low agricultural productivity. Ecosystems that support rural livelihoods ? e.g. pastureland ? are being degraded (deforestation and eolian & water erosion) because of the extension of cropland made necessary to make up for low yields induced by increasing climate impacts and low adaptive capacity. There is thus a need to: i) restore and sustainably manage supporting ecosystems to recover the flow of ecosystem services necessary for climate-resilient, resource-based livelihoods (cf. Component 1 & Output 2.3); and ii) increase the adaptive capacity of local communities so that they can derive a climate-resilient income without encroaching on and degrading natural ecosystems (via agroecological practices to be promoted through APFS & income-generating activities supported under Component 3)

b) Barriers

74. Under the current baseline scenario, ongoing degradation processes and population vulnerability in the northern and southern landscapes of the Kayes region will continue to be addressed in isolation by different sectors and associated investments, despite a strong commitment from the GoM and development partners towards supporting resilience building, SLM and biodiversity conservation activities. The risk of overlap and use of maladapted practices will remain, with limited opportunities for knowledge sharing, synergy and complementarity. Without a comprehensive approach that pushes an integrated vision of the agroecology transition, efforts to reduce climate vulnerability and halt land degradation will not succeed, food insecurity is likely to increase and rural livelihoods will be threatened.

75. Seven main barriers stand in the way of realising the objective of the project, namely to promote innovations in governance, production and finance in order to reduce the vulnerability of the small-holder agro-sylvo-pastoral food systems and livelihoods, reversing land degradation and halting the loss of globally significant biodiversity in fragile landscapes of the Kayes region.

Component 1

BARRIER 1: Limited effectiveness of existing institutions tasked with landscape planning and the promotion of agroecology at the region and commune levels

76. At the local level, while Local Land Management Plans (SLAs) are still under development in some communes (Table 6), difficulties to effectively implement them have already been experienced in the communes where they have been adopted. In particular, COFO members report two obstacles to fulfil their mandate: i) a difficulty to meet between members living in different villages to coordinate their action; and ii) a difficulty to exert an efficient control over land use without appropriate means of transportation. The latter obstacle is particularly relevant for the surveillance of protected areas ? including forests ? for which patrolling with motorbikes would be necessary.

77. At the regional level, there is a lack of regional, multi-stakeholder platforms to facilitate the coordination across sectors and from diverse organisations, including: i) regional and circle-level authorities; ii) farmers? associations; iii) private companies; iv) international sustainability bodies (e.g. IFOAM[52] Organics International, Fairtrade International); v) retailers; vi) Non-Governmental Organisations (NGO); vii) Civil Society Organisations (CSO); and viii) research institutions (e.g. Agricultural Economics Institute - IER, Katibougou Polytechnic Institute for Rural Training and Applied Research - IPR/IFRA). Although the Kayes region benefits from an emerging ecosystem of actors dedicated to the promotion of agroecological practices ? with organisations such as R?seau des Horticulteurs de Kayes (Network of Kayes Horticulturists, RHK) and Association des Organisations Professionnelles Paysannes (Association of Professional Farmers? Organisations, AOPP) ?, these organisations are often sector-specific. This generally prevents them from acting across the many and integrated aspects of agroecology ? unless the participation can be structured and shared through a dedicated, cross-sectoral platform[53]. In addition, the lack of such a platform does not help remedy the relatively low level of involvement and consideration of the alliances of organisations in society by decision-makers on the ground[54]. This limits the dissemination of the agroecological approach, which is the prioritised, integrated approach to be supported by the proposed project to address key aspects of land degradation and climate vulnerability in particular.

BARRIER 2: Limited knowledge, tools and capacity for institutions and extension services to prioritise, plan, implement and assess agroecological approaches, SLM and biodiversity conservation interventions across relevant sectors and scales

78. At the national level, there is a lack of capacity to conduct environmental and social impact assessments (EIAs) that take biodiversity and land conservation into account in the feasibility study phase for rural infrastructure projects. In addition, the capacity to effectively follow standard monitoring processes for resilient, productive and sustainable landscape management interventions ? especially in a mutli-disciplinary perspective ? is impeding the ability to document lessons learned from these initiatives, capitalize on innovations developed during project implementation, and ultimately inform new initiatives by drawing on past experiences. Key national institutions to be targeted by capacity-building interventions on these topics include the MAEP and MEADD.

Component 2

BARRIER 3: Inadequate mainstreaming of climate change adaptation, biodiversity conservation and sustainability into landscape management plans

79. SCATs have been developed for some communes of the Kayes region since the early 2000s. However, not all communes are covered (cf. baseline situation with respect to SCATs, Section 1.a.2). Furthermore, climate change adaptation and vulnerability considerations as well as biodiversity and land conservation are not adequately mainstreamed into some of the older SCATs. There is therefore a need to develop and /or revise SCATs with a focus on integrating these key dimensions into landscape management planning. This should be done in parallel with efforts to build the capacity of communal COFOs.

80. Local development planning is organised through the Programme de D?veloppement Social, Economique et Culturel (Economic, Social and Cultural Development Programmes, PDSEC). Although all communes in the Kayes region have developed five-year PDSECs ? usually with the support of the ADR or development projects ? the degree of mainstreaming of landscape management and biodiversity conservation is quite heterogenous. Among the nine PDSECs reviewed during the PPG phase[55], some plans are featured with relatively specific and prioritised lists of water-related and environmental issues to be addressed, with proposed actions and associated budgets. However, other PDSECs only contain generic and allusive mentions to the same issues and thus do not provide a solid planning basis for the funding and implementation of concrete actions. Several PDSECs also mention that SCATs are not enforced because of a lack of visibility ? local stakeholders are not aware that a SCAT even exists ? and / or because of gaps in human and material resources to enforce them. Finally, a large number of PDSECs expire in 2021 or 2022.

81. Key to land use planning in areas where pastoralists and settled farmers interact are the local pastoral conventions. Such conventions organise land use in areas shared by farmers, pastoralists and other stakeholders with potentially conflicting interests. Even though a growing number of conventions are being established ? including with the support of GEF-FAO project #4822 in the Kita circle ? a number of areas where the coexistence between pastoralists, farmers and other stakeholders generate conflicts over the access to and use of natural resources are still not covered by pastoral conventions. In addition, where conventions exist, their enforcement is conditional on the capacity of local stakeholders entrusted with this role, which is not always adequate. For example, enforcement organisations were set up under the PADEPA-KS[56] project in Bafoulab? (Bafoulab?-Koundian and Diakon-Kont?la tracks) and Kayes (Diadi?ya-Wassangara and Bagougo-Bafoulab? tracks); however, these would need to be revitalised to fulfil their mandate.

82. It should be noted that while some of the institutional barriers to climate change adaptation planning will be addressed as part of the National Adaptation Plan (NAP) process, support received from the GCF under the Readiness programme[57] mostly focuses on strengthening national-level institutions and accessing multilateral funding. There are therefore still barriers to access adaptation funding at the local level and set up adequate local governance structures to address climate-related conflicts and land-use planning issues.

BARRIER 4: Insufficient effectiveness of local conflict resolution mechanisms

83. The Pastoral Charter passed in 2001 recognises the farmers? rights to both move their animals and have access to resources to maintain their livestock. The Charter also states that local authorities are responsible for resolving land use disputes. In practice, however, mechanisms to resolve conflict in Mali vary depending on local norms, the nature of the conflict, and the parties involved. In a conflict between a farmer and herder, the parties will commonly attempt to agree on a settlement for the damage. If this approach fails, the parties may take the matter to customary authorities such as the chief and the village elders. The local council may get involved if the dispute cannot be resolved, or if the parties choose to go directly to local government instead of traditional authorities.

84. Decentralisation reforms have put more power into the hands of local officials to resolve conflicts related to land and natural resources, and the incongruence between statutory and customary legal systems has made dispute resolution confusing. Many local authorities are settled farmers themselves, or are seen as representing farmers (because of their ethnicity or otherwise) by herders who claim that they are biased towards farmers and give them preference[58].

85. The main local bodies for the resolution of conflicts over the use of and access to natural resources are the Clubs d?Ecoute Communautaire (Clubs for Community Discussion, CEC) set up through projects at the village level. However, CECs are often unable to facilitate the solving of an increasing number of resource-based conflicts. This situation has been aggravated by climate changes as crucial resources ? water, pastures, arable land ? are becoming scarcer. There is therefore a need to strengthen existing CECs and create similar ones where they do not exist yet.

86. The traditional ways of managing confits are based on : i) orality; ii) the ritual dimension; iii) reference to history and founding myths of the communities; iv) the overriding concern to safeguard social cohesion; and v) sacredness and the interweaving of the spiritual and the temporal, which is materialised by the prevalence of magic-religious beliefs.

87. Traditional actors involved in the mobilisation of these mechanisms include: i) charismatic figures such as traditional chiefs on the one hand, and sovereigns on the other (village chieftaincies/village notability/elected officials; ii) village elders; iii) some socio-professional categories, first and foremost among which are the so-called 'caste' people such as griots and blacksmiths; iv) resource managers; v) initiating societies; and vi) religious leaders[59].

88. At all levels, the conflict management mechanism is based on the construction of fairer relations which consist of listening to both parties before drawing a conclusion, making a development in case of repetition of the conflict and the reaffirmation of the law for the legal conduct to be followed. The scheme is: prevention, mediation, judgement, negotiation, arbitration and coercion.

89. The main types of conflict encountered can be classified as follows:

? Conflicts of practical needs, which take place around specific objects. They are simpler to manage because the object is often more quickly identified and if the need is met the conflict is resolved ;

? Conflicts of interest, which are related to issues of power, feelings and belonging. Their management requires further analysis (e.g. competition over a woman, a piece of land, marital conflicts, theft, adultery, slavery, etc.);

90. For these first two types, CECs are the best-suited mechanisms for conflict resolution.

? Conflicts of values, which are based on belief systems and identity. They are the deepest because they are linked to the being itself and can quickly become bloody and therefore must be studied taking into account the complexity and specificity of each situation and are more difficult to manage than the first two (e.g. intra- or inter-community disputes over economic resources (land between farmers, between farmers and herders, etc.).

91. For these types of conflict, the Participatory, Negotiated Territotial Diagnostic (D?veloppement Territorial participatif N?goci?**,** DTPN) approach should be favoured (cf. Annex V) and CECs could be one of the levers.

92. Even though the target circles are mostly free from jihad terrorism, recent studies in central and northern Mali have shown complex social mechanisms through which jihadists can take over the control of pasture management in areas where legitimate traditional and official institutions fail to exercise this function[60]. Taking progressively over such a crucial role as organisers of pastoral landscapes allows terrorists to legitimise their social existence and establish themselves in a *de facto* position of power. In this context, strengthening legitimate landscape management can only help prevent such dynamics to ever come to play in the target circles.

BARRIER 5: Insufficient dissemination and uptake of agroecological and restorative approaches in the northern and southern landscapes

93. Baseline information gathered through the TAPE assessment (cf. Section 1.a.2) exhibit several specific limits with respect to the adoption of agroecological approaches. Some of these limits are described below.

94. Recycling is the one of the weakest components of agroecology assessed in the target circles. The recycling index includes biomass and nutrient recycling, water preservation and conservation, seed and animal genetic resource management as well as renewable energy (use & production). The data collected shows that crop residues and by-products are only rarely used as fertilisers on most farms. These residues and by-products are either burnt or dumped. This equates to low on-farm recycling, in terms of low integration of different components of the farm system, that lead to lost opportunities to improve the efficiency and sustainability of farms. Conversely, given the co-presence of animals, trees and crops on farm and within communities, there is high potential for reconfiguring systems to increase agroecological performance. The preservation and conservation of water also remain a barrier to build resilient rural livelihoods: although some farmers use water collection facilities, water conservation and adequate practices to increase on-farm water recycling (including the choice of crops that require less water) are still insufficient. Finally, with regards to seed management and animal genetic resources, most producers combine self-production, exchange and purchase of seeds in markets. Half of the animal breeding is organised with neighbouring farms and the rest comes from the market. Depending on the farms, up to 50% of the farm income can be spent on inputs[61].

95. Thanks to past capacity-building efforts in the region, a good share of farmers is aware of the theoretical benefits of using organic manure as fertiliser. However, many justify using a combination of organic and mineral fertilisers by the difficulties of accessing sufficient organic manure. Similarly, while some farms ? principally family farms ? use integrated and biological pest management techniques, surveys show these strategies and methods are applied sporadically and in a limited context.

96. Overall, agroecological practices are perceived difficult and cumbersome to implement because of the amount of effort they require. The labour intensity of agroecological practices compared to more conventional high-input practices is a common barrier to adoption of agroecological practices, especially by women. This is in contrast with high potential interest that women have in the improved quality of agroecological products. This is particularly the case of manual zai, the value of which is recognised by communities, but which is too often too labour-intensive and strenuous, especially for women, to be supported. There is therefore a need to promote innovation and test techniques and tools that reduce the labour burden of agroecological practices (including by setting up collective solutions to reduce individual burden, e.g. collective harvesting/weeding, bulk preparation of bio-inputs). A number of agroecological principles are known to producers and locally-adapted agroecological practices are already used y some farmers. There is thus a good basis to facilitate knowledge sharing within and amongst communities, further promote innovation involving local farmers and research, and involve younger generations in leading local transformation of farming practices. Results of the TAPE show that producers ? including women ? are generally well networked within their local community and often participate in the events of local organisations.

97. Any attempt at facilitating the use of agroecological practices in the target circles needs to take into account the diversity of local contexts, or it faces the risk of failure. For example, the Bafoulab? circle benefits from a micro-dam for water retention, perimeter arrangements and lowland facilities. The geo-climatic conditions in this circle make crop diversification easier. On the contrary, the soils of the Di?ma circle are dominated by less fertile sandy-silt soils (60%); in Nioro, the topsoil is scarce and fragilised by the combined actions of water, sun, wind and man; in Y?liman?, the soils are of clay, clayey-sandy, sandy and Katamangu? types. Although the first two types are generally suitable for cereal cultivation in terms of nutrient content, they are vulnerable to wind and water erosion. Katamangu? soils, on the contrary, are characterised by low nutrient contents, and are largely unsuitable for any agricultural exploitation. As such, approaches that promote on-farm and across farm experimentation with promising locally-adapted agroecological practices and systems will be crucial to the uptake and upscaling of agroecological transitions amongst local farms.

Component 3

98. In the Kayes region, promising sectors around baskets of selected goods are not developed to their full potential. This is because coordination between actors involved in value chains (VC) is limited, agri-business skills are scarce and certification opportunities have not been explored. In addition, access to credit is constrained by difficulties to abide by repaying schedules and a lack of credit counterparties (e.g. valuables, cattle). This is especially true for women-led households that have lower access to skills, advice, and resources (such as credit, land).

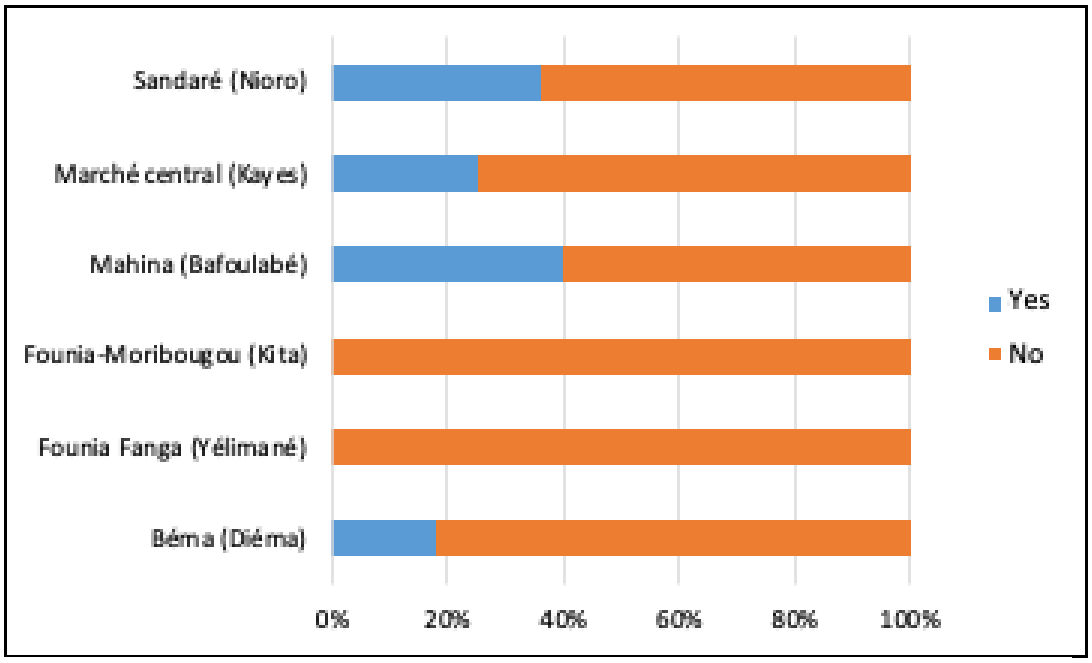
BARRIER 6: Lack of organisation of local producers and territorial markets

Lack of coordination of stakeholders around territorial markets and within key value chains

99. A number of market opportunities are not seized by stakeholders involved in territorial markets ? i.e. producers, intermediaries, consumers, regulating authorities ? because of a lack of coordination between them. The level of organisation membership amongst producers has

been found to vary significantly across the territorial markets studied during the PPG phase, with a low average of 26% of surveyed producers enrolled within a professional organisation (e.g. producers? organisations, unions).

Figure 7. Membership in organisations per territorial market[62].



100. An example of market opportunity not seized because of a lack of organisation is the simultaneous surplus of fruit and vegetables in the Kayes circle in the harvesting season and shortage thereof in northern circles of Nioro and Y?liman?. As a result, unsold fruit and vegetable are left rotting in Kayes and prices are too low to provide farmers with decent remuneration, while prices are too high in Nioro and Y?liman? for many families to afford fresh produce, with negative dietary consequences (including for children). Should producers in Kayes organise themselves for collection, aggregation and transportation, they could sell their surplus in Nioro and Y?liman?, yielding a mutually advantageous outcome for all parties with increased resilience of local livelihoods and improved dietary diversity as well as global environmental benefits in the form of improved provision of agro-ecosystem goods and services. The organisation of farmers in small groups is especially important when seeking to promote uptake of innovative practices and systems, which might encounter several barriers to upscaling. Especially in the case of women, the peer-support and mutual help networks promoted through groups are essential in allowing interested farmers to progress along the agroecological transition potential and go beyond input substitution.

Limited development of market infrastructures and services

101. The level of services and infrastructures available at territorial markets also varies quite significantly across surveyed markets (Figure 6). Such services and infrastructures may include health and sanitation (human and animal pharmacies, livestock vaccination facilities), trade (wharehouse, cold storage, shops, banks, transformation facilities), communication (post office / phone booth), safety (police station) and others (schools, kindergarten, toilets, water points). This especially contributes to exclude women (for which the absence of toilet facilities

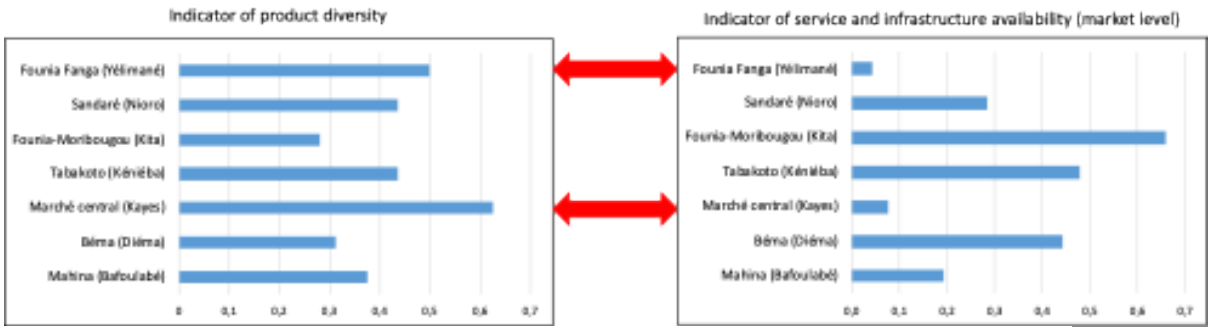
has been described as a genuine barrier to sell their production on local markets), youths and more vulnerable producers.

102. Significantly, the MTM study shows that more product diversity is associated with stronger linkages to local markets (share of production sold on local markets). These linkages to territorial markets are facilitated when: i) territorial markets are more inclusive, with improved infrastructure and services; and ii) producers are better organised and can derive more benefits from their participation in markets. Addressing the latter two barriers would thus foster a more diverse agricultural production, with associated benefits in terms of resilience and agrobiodiversity.

103. As shown on Figure 8, there is a generally negative correlation between product diversity and availability of market services and infrastructures. An interpretation is that:

- ? 1) products traditionally managed by men (cattle and groundnuts) are the ones that generate more income. The most important markets for these products are Founia-Moribourgou (cattle), Sandar? (cattle), Tabakoto (groundnuts) and Mahina (peanuts). These markets tend to be more specialised in these income-generating products and are therefore less diversified.
- ? 2) it is likely that more political attention has been given to these revenue-generating markets ? which are also important marketplaces for trade outside the region. As a result, these markets have been benefiting from a comparatively higher availability of services and infrastructures. Conversely, smaller and more diversified markets have received less political and administrative attention and are thus less endowed with supporting services and infrastructures.

Figure 8. Negative correlation between product diversity on a market and availability of service & infrastructure[63].



104. Finally, insufficient investment in some markets can generate tensions. While municipal authorities ? responsible for the management of markets ? levy taxes in the markets as per national laws and regulations, sellers can become reluctant to pay taxes when they consider the level of infrastructure provision to be insufficient. This has led to conflicts that undermine the roles of the market as a space for more equitable accumulation and redistribution of wealth and for balancing the local economy with job creation.

Insufficient development of product certification processes to facilitate market access

105. Market access for agricultural commodities produced through agroecological practices can be facilitated by product certification. However, the dissemination of organic or agroecological certifications faces a number of challenges, including:

- ? certification processes often remain unknown to producers unless information is shared by extension services, rural development organisations or NGOs working with buyers;
- ? certification processes can be time-consuming and knowledge-intense and, in the case of participatory guarantee systems, require effort (by producers, consumers and other actors) to develop a truly participatory mechanism;
- ? certification for export is extremely expensive, as third-party audits are conducted yearly, and requires a strong producer cooperative or organized outgrower scheme that works closely with an exporter; and
- ? significant technical support is required to train farmers on the requirements for certification, update them on technologies and foster certification acceptance.

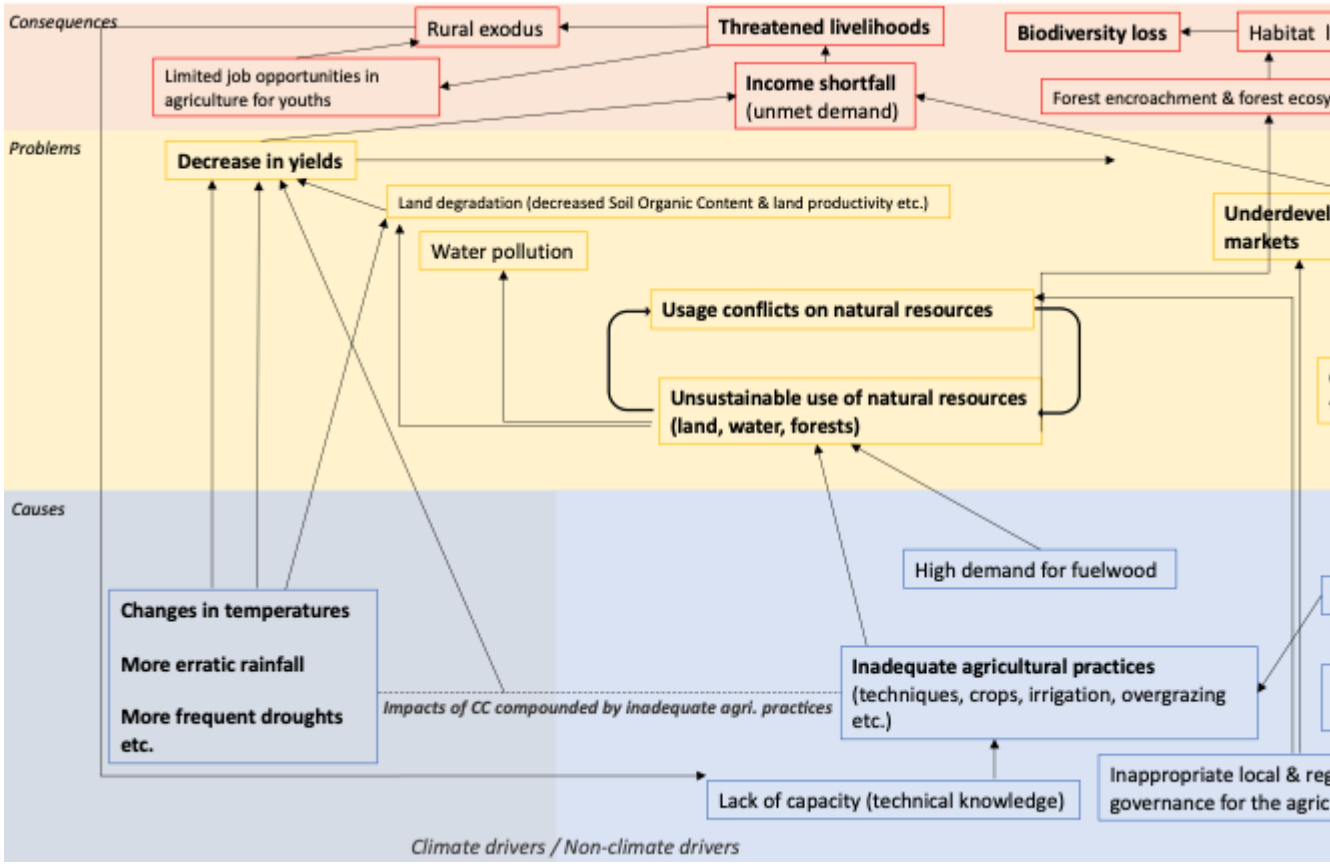
BARRIER 7: Limited availability and access to funding, including micro-credit, in particular for women and youth

106. Because private investment tends to be attracted by export-oriented agriculture, smallholders struggle to access the funding they would need to move beyond subsistence farming. In 2014, loans allocated to family farms only constituted 2% of all agricultural credit granted in West Africa; furthermore, these were mainly limited to short-term loans[64]. Access to credit is even more constrained for specific groups such as pastoralists, young farmers and women. This is because of a lack of funding availability, financial literacy and counterparty. These major constraints in accessing credit have detrimental consequences on long-term investment and associatd socio-economic development. For example, without appropriate funding, women are bound to limit their activities to domestic work and home life. Discrepancies in access to funding thus reinforce socio-economic inequalities and hamper opportunities to build on youth and women?s skills, networks, and knowledge, as well as to understand their needs and priorities when engaging in food system activities[65].

107. Past and ongoing experiments with AVECs in the Kita circle have shown promising results. However, there is a need for AVECs to be more structured and trained to promote effective and efficient governance of resources in order to ensure their sustainability[66]. In particular, some members need to be trained in simplified bookkeeping and financial statements, with a view to streamline the management of AVECs.

108. A Problem Tree summarising the overall barrier analysis is presented below.

Figure 9. Problem tree for the proposed project.



2) The baseline scenario and any associated baseline projects.

Baseline situation related to planning and governance for sustainable landscape management

109. At the national level, policies and strategies in place generally create favorable conditions for rural development and sustainable landscape management. This body of policies and strategies include the Charte Pastorale[67] (Pastoral Charter), Agricultural Development Plan, the National Adaptation Program of Action (NAPA), the National Agricultural Sector Investment Program, the National Reforestation Strategy, the land tenure law[68], the Sustainable Land Management Strategic Investment Framework and the National Climate Chance Strategy (SNCC). At the regional level, strategies and policies are also generally adequate to support sustainable landscape management. In particular, a Regional Scheme for Land Use (Sch?ma R?gional pour l?Am?nagement des Terres, SRAT) was adopted for the Kayes region. This platform will facilitate the development and the implementation of landscape-related policies, by providing a structured forum for the participatory elaboration and discussion of relevant decisions.

110. The Kayes SRAT has not been updated since 2009. It is mostly a descriptive document, but also encompasses three scenarios for the development of the region, namely a business-as-usual scenario, catastrophic scenario and balanced development scenario. A number of recommendations are formulated to put the region on track for the latter scenario. Among these recommendations are the development of an agro-industrial complex around Kita, the sustainable management of agro-sylvo-pastoral landscapes in the Kayes-Y?liman? axis (e.g. upgrading of irrigation infrastructure to enhance farmland, with a focus on biodiversity conservation and promotion of floodplain recession agriculture), the optimisation of biomass and management of water resources along pastoral corridors in the eastern part of the region (Nioro, Di?ma, northern Bafoulab?, northern Kita) and the upgrading of market facilities for animal products (including dairy). Overall, the Kayes SRAT does not appear as a fully operational planning document, insofar as it is outdated and does not provide specific directions for territorial planning. As of early 2021, it is not clear whether the newly-created administrative regions of Kita and Nioro will develop SRATs of their own.

111. At the commune level, relevant landscape management and development planning documents are the Local Land Management Plans (Sch?mas Communaux d?Am?nagement Territorial, SCAT) and Economic, Social and Cultural Development Programmes (Programme de D?veloppement Social, Economique et Culturel, PDSEC), respectively. Table 6 presents the baseline situation in terms of local planning documents in the target circles.

Table 5. Baseline situation with respect to local plans[69].

Circles	Communes
Di?ma	All communes have a SCAT
	All communes have a SCAT
Kayes	All communes have a SCAT
	All communes have a SCAT
Nioro	Most communes have a SCAT

	Most communes have a SCAT
Y?liman?	Only the neighbouring commune of Guidim? is covered by planning documents for the city of Y?liman? : ? Sch?ma Directeur d?Am?nagement d?Urbanisme de la ville de Y?liman? et environs ? Plan Strat?gique d?Assainissement de la ville de Y?liman?
Bafoulab?	Bafoulab?, Mahina and Oualia have SCATs
	SCATs exist in five communes
	Communal Adaptation Plans (Plans Communaux d?Adaptation au Changement Climatique, PCAs) exist in 10 communes[70]

112. Locally, relevant bodies for the implementation and discussion of matters pertaining to landscape management are the Comit?s Fonciers (Landscape Committees, COFO) at the commune level and the Club d?Ecoute Communautaire (Clubs for Community Discussion, CEC) at the village level[71]. COFOs are the bodies responsible for the implementation and surveillance of the SLAs. Despite having their role officially described in a decree published over a decade ago[72], not all COFOs have been created in the target circles (Table 7); moreover, existing COFOs are often not functionning and effective.

Table 6. Baseline situation of COFOs in the Kayes region[73].

Circle	Circle COFOs	Communal COFOs	Village COFOs
Di?ma	1	All 15 communes have a COFO	0
Kayes	0	27 COFOs for 28 communes	6
Nioro	1	All 16 communes have a COFO	0
Y?liman?	0	All 12 communes have a COFO	1
Bafoulab?	0	4 COFOs for 13 communes	2
Kita	1	All 33 communes have a COFO	1
Total	*4 COFOs for 7 circles*	*112 COFOs for 129 communes*	*10 COFOs for over 1,000 villages*

113. Besides COFOs, specific commissions are mandated to plan for development at the regional, circle and commune levels; they are the CROCSADs, CLOCSADs et CCOCSADs, respectively. These institutions are supposed to guide, coordinate and monitor development actions. At the regional level, the CROCSAD for the Kayes region is operational; however, the two newly-established regions of Nioro and Kita are still in the process of setting up their institutions, including their CROCSADs. There is thus a strong opportunity for the proposed project to support the establishment of these two CROCSADs and facilitate the mainstreaming of sustainable landscape planning ? including biodiversity conservation ? into their terms of reference. As of early 2021, a tentative agenda for institutional deployment was only available for the Kita region. The establishment of the Kita CROCSAD is planned for in the second semester of 2021, with an initial three-year activity plan that will cover 2022 to 2024.

114. At the circle level, CLOCSADs have an official existence but do not play an active role in development planning and coordination. One exception is in Di?ma, where the CLOCSAD meets regularly thanks to the technical support of the GIZ-funded project PADRE (Projet d?Appui ? la D?centralisation et ? la R?gionalisation[74]). Finally, none of the commissions created at the commune level (CCOCSADs) is actually operational[75].

115. In terms of the executive enforcement of landscape management, sectoral ministries have offices and human resources stationed across the region. Within the MAEP, the DRA (Direction R?gionale de l?Agriculture, Regional Directorate for Agriculture) has the most human resources at the levels of circles, communes and villages. The DRPIA (Direction R?gionale de la Production et l?Industrie Animales, Regional Directorate of Livestock & Animal Production) and the DRP (Direction R?gionale de la P?che, Regional Directorate of Fisheries) are represented at the regional level, but not in all communes. Under the MAEDD, the DREF (Direction R?gionale des Eaux et For?ts, Regional Directorate of Water and Forestry) is mostly staffed at the regional, circle and district (cluster of communes) levels. The AEDD is based in Bamako and is not represented in the field.

Table 7. Officers in relevant regional Directorates in the Kayes region[76].

	Circle	Communes	# officers			
			DRA[77] (Regional Directorate of Agriculture)	**DRPIA[78] (Regional Directorate of Livestock & Animal Production)**	**DRP[79] (Regional Directorate of Fisheries)**	**DREF[80] (Regional Directorate of Water and Forestry)**
Northern landscape	Di?ma	15	9	5	1	9
	Kayes	28	15	5	3	15
	Nioro	16	7	4	0	8
	Y?liman?	12	6	3	0	7
Southern landscape	Bafoulab?	13	10	3	3	15
	Kita	33	23	5	1	25
Total		**117**	**70**	**26**	**8**	**80**

116. Through past and ongoing intiatives to promote sustainable land management in the Kayes region, a number of farmer field school facilitators have been trained in the target circles (Table 8). This pool of trained facilitators constitutes a valuable baseline resource that the project will tap into. However, most facilitators have been trained with a focus on sustainable agricultural techniques, with a limited mainstreaming of biodiversity conservation matters into training curricula. Additional training modules will thus be implemented to promote an integrated understanding and practice of land management as well as specific elements on agroecology, innovative business models as well as gender dimensions.

Table 8. Statistics on trained facilitators in the Kayes region[81].

Circle / status	Number of trained facilitators
Di?ma	**9**
Officer	6
Managing officer	1
Producer	2
Kayes	**26**
Officer	9
Producer	17

Nioro	**7**
Officer	6
Producer	1
Y?liman?	**6**
Officer	4
Producer	2
Bafoulab?	**11**
Officer	9
Producer	2
Kita	**38**
Officer	17
Managing officer	1
Producer	20
Total	*97*

117. Remarkably, out of 97 trained facilitators in the target circles, only eight are women ? including six in the Kayes circle alone. An extra effort will be made to redress this imbalance during the project implementation phase.

Baseline situation with respect to agroecology

118. The PPG phase was built around the need to gather relevant relevant information about the various dimensions of agroecology, with a view to describe the baseline situation, inform the project design and lay the bases to measure progress of key impact indicators during the implementation phase. The choice of tools was therefore guided by these objectives. As a result, it was decided to implement the innovative Tool for Agroecology Performance Evaluation (TAPE) and Mapping of Territorial Markets (MTM) to provide adequate analyses on, respectively, the status of the agroecological transition in the northern and southern landscapes, and the role of territorial markets to support the same transition (see boxes and analyses below). Because of the pandemic situation, constrained national capacity and ongoing development of some tools, it was not possible to deliver on other analyses that were initially planned for, namely a Climate Risk Assessment and assessments of the economic impact of biodiversity conservation investments (B-INTACT tool, cf. Component 2). However, these analyses will be conducted during the implementation phase of the proposed project.

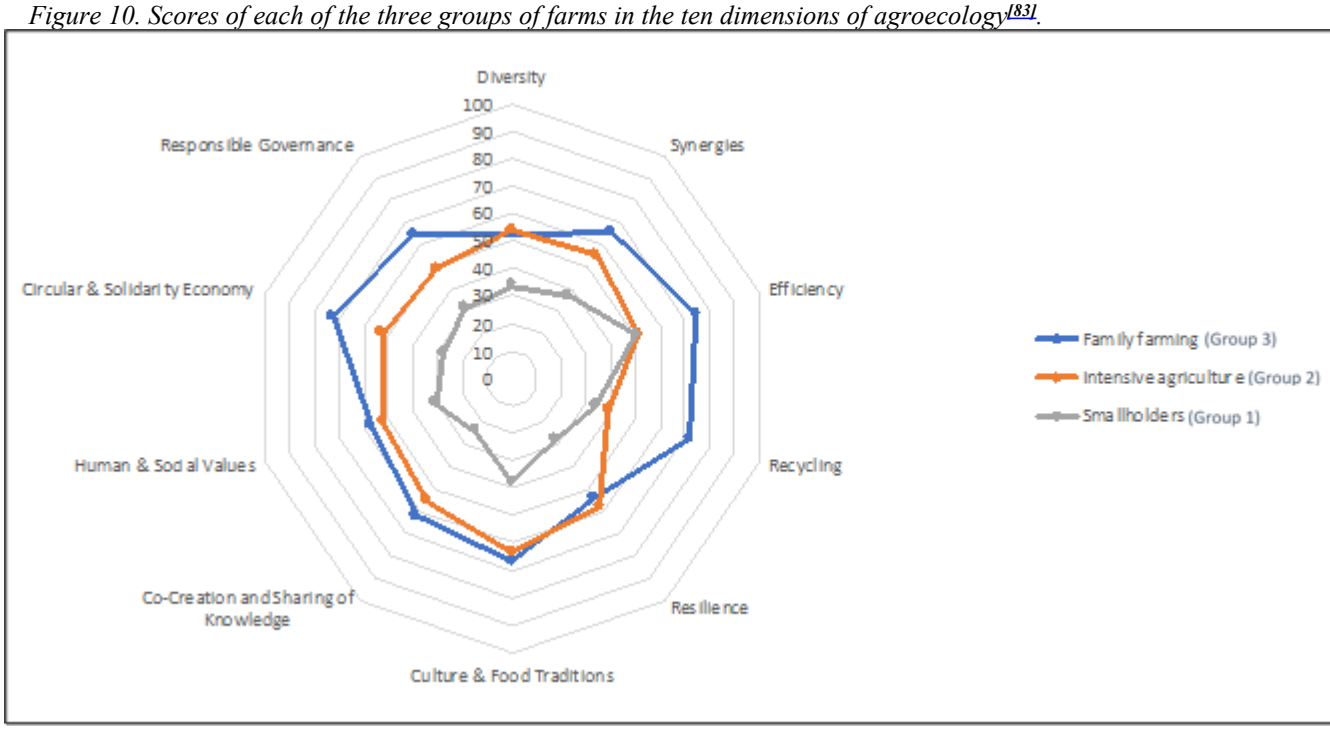
Tool for Agroecology Performance Evaluation (TAPE)[82]

Based on various existing assessment frameworks, TAPE is a comprehensive tool developed by FAO and a large number of partners, that aims to measure the multi-dimensional performance of agroecological systems across the different dimensions of sustainability (summarised through the Characterisation of Agroecological Transition indicator, CAET). It applies a stepwise approach at the household/farm level but also collects information and provides results at a community and territorial scale. As part of the TAPE process, ten dimensions of agroecology are assessed, namely recycling, responsible governance, synergies, diversity, co-creation & sharing of knowledge, resilience, human & social values, culture & food tradition, efficiency, circular & solidarity economy.

In addition, ten dimensions of multidimensional performance are evaluated, namely secure land tenure (or secure mobility for pastoralists), productivity, income, added value, exposure to pesticides, dietary diversity, women?s empowerment, youth employment opportunities, agricultural biodiversity and soil health. This allows to generate typologies of farms and territories according to these criteria, and constitutes an innovative and flexible decision-making tool to prioritise territories and types of farms for project interventions. Kayes is one of the first regions globally to benefit from the TAPE assessment, with 242 farms surveyed. Detailed methodological information can be found here; the TAPE report developed by IRPAD and FAO during the PPG phase is available in French.

119. The TAPE analysis performed on 242 farms across the Kayes region concludes on the existence of three well-defined groups of farms, ranked according to their overall score in terms of agroecology. 10 below illustrates the results of the TAPE assessment.

Figure 10. Scores of each of the three groups of farms in the ten dimensions of agroecology[83].



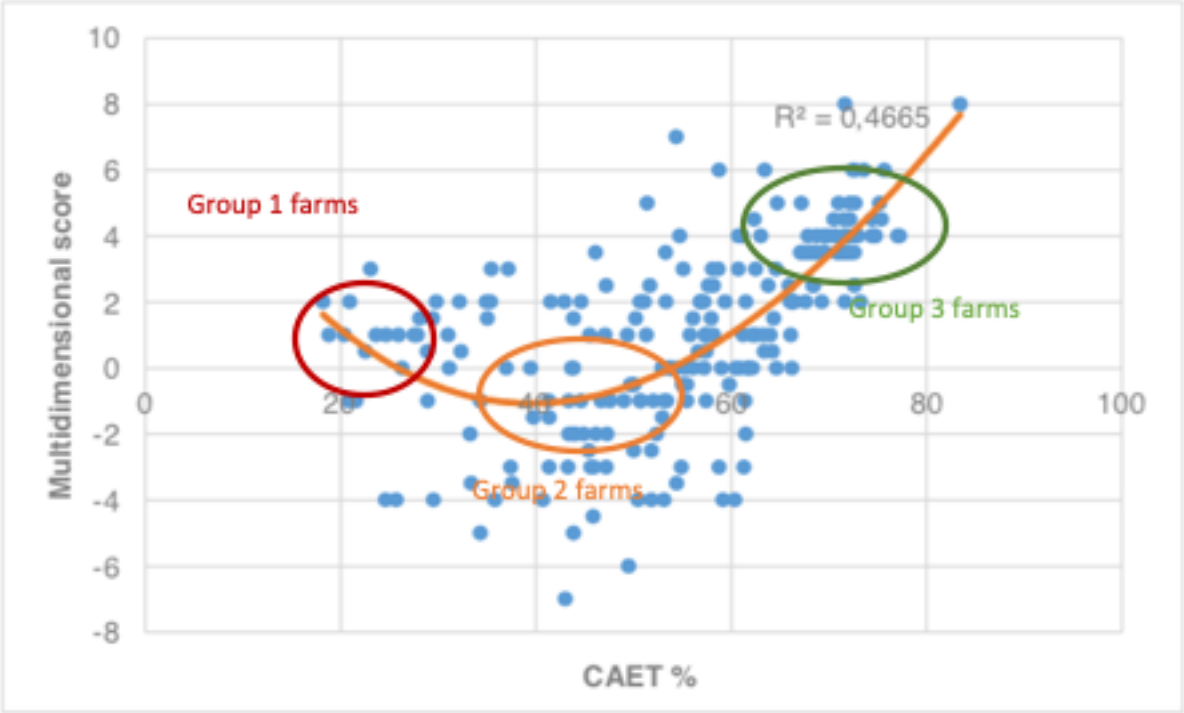
120. Remarkably, the hierarchy amongst the three types of farms is almost homogenous across the ten dimensions of agroecology (Figure 10). In other words, farms that perform best overall in terms of agroecology generally score best in all ten categories. Likewise, farms that show the lowest overall score rank lowest against almost all ten criteria. This allows to sketch the profile of the typical farm in each of these three groups.

Table 9. Typology of farms according to their degree of advancement in the agroecological transition[84].

Criterion	Group 1	Group 2	Group 3
	Smallholders specialised in cereals and nuts	**Intensive farming (mechanised; large-scale livestock farming)**	**Diversified, family-operated farms**
Agroecological status	Weak	Average	Medium-Advanced
Characterisation of agroecological transition (%)	33.40%	53%	64.10%
Most represented circles	Nioro, Y?liman?	Kita, Di?ma	Bafoulab?, Kita, Di?ma
Typical farm size	3.6 ha (+1.34 ha of pastures and 0.54 ha of woodlot)	10 ha (+9 ha of pastures and 15 ha of woodlot)	9 ha (+4 ha of pastures and 5 ha of woodlot)

121. Besides the characterisation of the agroecological transition, the TAPE tool provides an analysis of core performance criteria, defined to assess the performance of systems (e.g. farms, households, territories) on the key dimensions considered relevant to sustainable food and agriculture and to achieve the SDGs. The multidimensional performance is a compound indicator that combines these core performances. Plotting sampled farms in a space defined by the agroecological status and multidimensional criteria yields a highly-remarkable U-shape curve (Figure 11).

Figure 11. Relationship between agroecological status and multidimensional performance for sampled farms[85].



122. This U-shaped curve suggests that graduating from a weak (Group 1) to an average agroecological performance (Group 2) can take a toll on at least some components of multidimensional performance. However, past this crossing point, farms that rank highest in terms of agroecological performance also do very well in terms of multidimensional performance. One should be wary of not misinterpreting this snapshot in a teleological perspective (not all farmers spontaneously wish to move up groups, and Group 3 farms have not necessarily been though Group 1 and Group 2 phases in their individual trajectories); however, this analysis helps understand the baseline agroecological situation in the Kayes region, and allows to single out the dimensions of agroecology to focus on for each group in order to collectively advance the agroecological transition. Below are brief descriptions of the three types of farms.

123. Group 1: these are small-scale farms, often specialised in cereal or groundnut production. They are poor (or impoverished) producers concentrated in the northern circles (Nioro and Y?liman?), with a low or very low all-around agroecological level. Their multidimensional performance is weak, as they rank poorly on almost all performance criteria except productivity and value added per hectare (they manage to produce enough even with only small plots), exposure to pesticides (they do not use them because they cannot afford them) and soil health. These producers spend a very large part of their income on food, and most of the youth have already migrated or would migrate if they had the opportunity to do so. The agrobiodiversity of their farms is very low, with few crops and animals, but these make up more than one third of their low income (the highest percentage among the three groups).

124. These producers lack as much knowledge as they lack material opportunities to make progress through the agroecological transition. They need support to diversify their agricultural production, to implement agroecological practices on their farms, to improve their nutrition and nutritional awareness, and to become self-sufficient in external inputs (e.g. high expenses on seeds).

125. Group 2: these are intensive farms. Rather concentrated in the Kita circle, this is a non-homogeneous category that includes producers with larger areas (10 ha of farmland, 9 ha permanent pastures and 15 ha woodland on average) and with a high use of external inputs (pesticides, fertilisers, but also fuel and generally inputs linked to mechanisation). This category can include large livestock farmers, but also very diversified producers who can also be quite advanced in certain elements of agroecology, especially social aspects. These producers may have satisfying income levels, but they also often spend significant resources in productive inputs; they should be supported in the implementation of agroecological practices to make their production more profitable and sustainable.

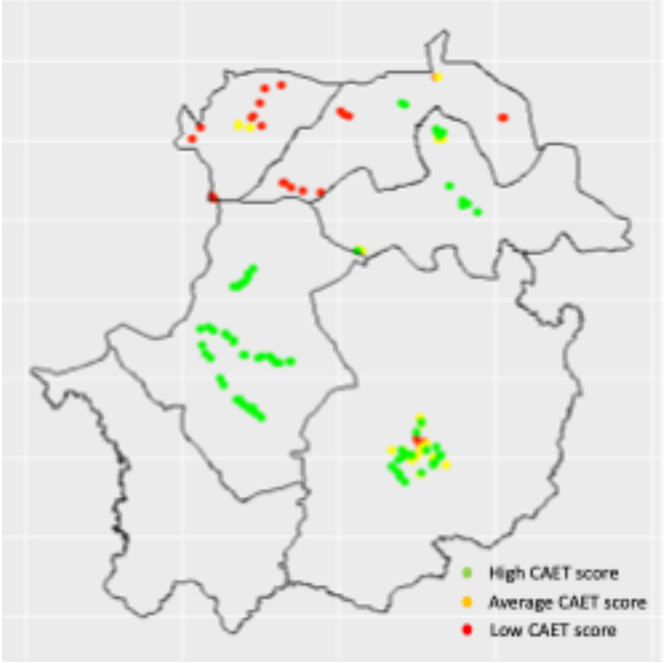
126. Group 3: diversified, family farms include producers well advanced in the agroecological transition. On average, they are performing well in terms of agroecology and performance criteria. They can exploit a rather large agricultural area (9 ha on average, plus 4 ha of permanent pasture and 5 ha of woodland) which gives them leeway to experiment with new productions and modes of production. It is the category with the highest percentage of family workers in agricultural production (84%), with the highest level of net income per person, the lowest level of expenditure on food, the best diversified diet, the best added value, the best agrobiodiversity and the healthiest soils. Importantly, it is the only category where large

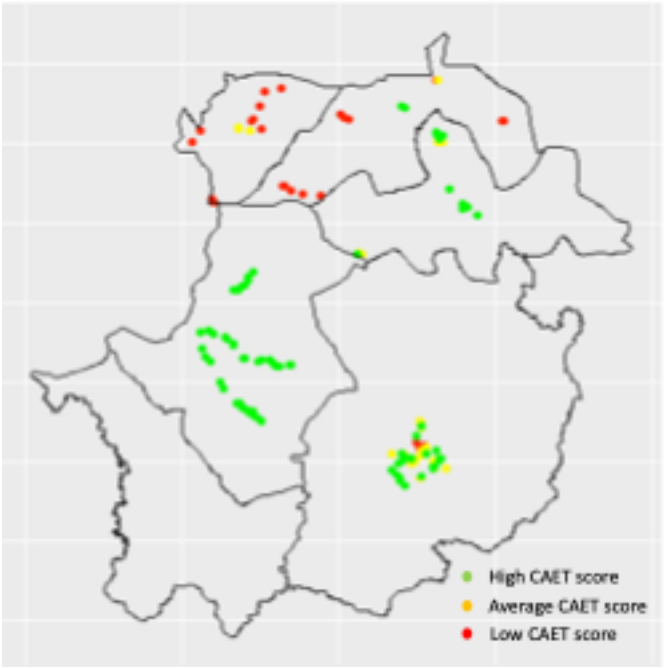
migration of youth has not occurred, and where young people do not intend to emigrate. Some producers in this category can be seen as regional champions of agroecology and should be taken as an example to inspire other producers.

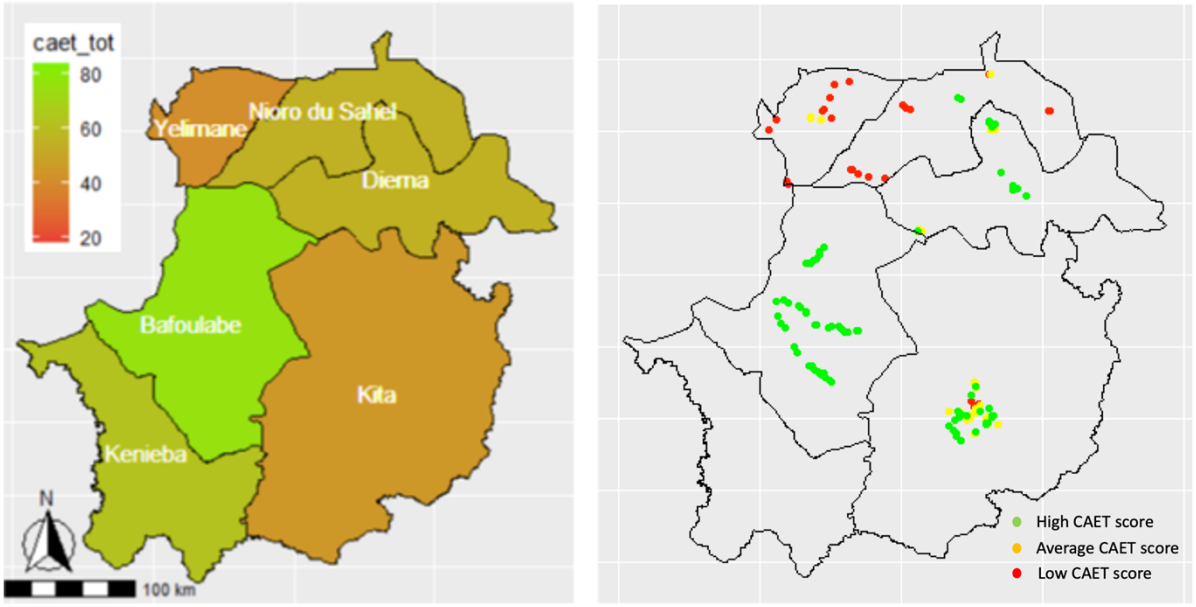
127. During the PPG phase, the TAPE assessment was used to inform the intervention strategy in terms of target groups and activities. It was collectively decided to focus on supporting especially Groups 1 and 2, with a view to help these farms transition towards agroecological farms more systematically. Agroecological practices to be tested and disseminated through agro-pastoral field schools under Component 2 will thus be tailored to the specific needs of these groups. For example, the development of locally adapted integrated pest management will be a response to both the lack of access to chemical pesticides for Group 1 farms and, on the contrary, the overexposure to such pesticides among Group 2 farmers. TAPE results also informed other interventions, such as the choice to focus on supporting rural youths in the Kita and Di?ma circles, found to be the most hit by the emigration (actual or intended) of rural youths.

128. The geographical distribution of the three groups is depicted on figure 12 below. Circles in the northern landscapes generally do worse than circles in the southern landscapes. However, there is some degree of heterogeneity in the spatialisation of these results (igure 12, right)

Figure 12. Geographical distribution of agroecological scores in the Kayes region at the circle (left) and farm levels (right)[86].


High CAET score
Average CAET score
Low CAET score


High CAET score
Average CAET score
Low CAET score



129. The TAPE tool allows to assess the level of co-creation and sharing of knowledge, through an indicator that reflects: i) the existence of platforms for the horizontal creation and transfer of knowledge and good practices; ii) access to agroecological knowledge and interest of producers in agroecology; and iii) participation of producers in networks and grassroot organisations. Three studied circles (Bafoulab?, Kita, Y?liman?) out of five have a co-creation index exceeding 50%. The circles of Nioro (33%) and Di?ma (16%) have the lowest index. However, even in Di?ma and Nioro, a number of a development organisations working hand in hand to foster socio-economic development through knowledge and experience sharing. In Di?ma, development associations are very numerous and diverse; they include local associations and professional organisations (69 cooperatives, 207 associations and three economic interest groupings[87]). The Nioro circle is a member of the Syndicat des Collectivit?s Territoriales de Nioro du Sahel (SYCOTEN). The objective of SYCOTEN is to promote the sustainable development of the territorial collectivities. It brings together all territorial authorities within the circle. Platforms to promote agroecology are emerging in the Kayes region; they include the the Kayes Horticulturists Network (R?seau des Horticulteurs de Kayes, RHK) and the Association of Professional Peasant Organisations (Association des Organisations Professionnelles Paysannes, AOPP).

Baseline situation with regards to pastoral conventions and organisation of transhumance corridors

130. The objectives of these conventions are to ensure that: i) animal tracks, grazing areas and resting places are cleared; ii) the dates for the animals' ascent and descent are respected by the agro-pastoralists to reduce conflicts between farmers and herders linked to field damage caused by passing animals; and iii) the watering of animals by the installation of pastoral wells to maintain animals in the areas of concentration. Conventions can be established at the commune, circle, inter-commune and inter-circle levels, depending on the relevant animal tracks. These tracks are increasingly organised and marked to facilitate the coexistence of pastoralists and other stakeholders. Table 10 below shows the baseline situation of organised tracks in the target circles.

Table 10. Baseline situation of transhumance tracks in target circles[88].

Circles	Communes	Villages / sites	Transhumance tracks (km)	Creation date	Funding source
Kayes	Diamou	Diamou	100	2014	PADEPA-KS[89]
	Djelebou	Djelebou	20	2019	CSPEEDA[90]
	Koussan?	Koussan?	20	2019	CSPEEDA
	Sahel	Sahel	20	2019	CSPEEDA
	Koussan?	Koussan?-Touba, El-Am?r?	23	2020	WHH[91]
	Koussan?	Yil?-El Kabra	20	2020	WHH
Nioro	Koriga-Kaniara	Western track	98	2016	ICD/BRACED [92]
	D?b?kourouba-Marcourta (Sandar?)	Central track	93	2016	ICD/BRACED
	Bin?ou-Fissourou, Kr?ma (Kor?raKor?)	Eastern track	76	2016	ICD/BRACED
Y?liman?	Guidim?	Yaguin? banda-Kodi?	27	2014	ICD/BRACED
Bafoulab?	Bafoulab?	Bafoulab?-Koundian	125	2014	PADEPA-KS
Kita	Kassama	Kassama	35	2014	PADEPA-KS
	Madina	Madina-Makono	217	2014	PADEPA-KS
	Madina	Koutouba-Madina	65	2014	PADEPA-KS

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Baseline situation related to territorial markets

Mapping of Territorial Markets (MTM)

Territorial markets are defined by the fact that they cater food that is produced, processed, sold or distributed and consumed within a given ?territory?. These markets are usually supplied by local producers ? most often smallholders ? and serve local customers. As such, they show a diversity of valuable characteristics, in particular in the context of resilience building:

? they are inclusive and diversified;
? they perform multiple economic, social, cultural and ecological functions;
? they are most remunerative for smallholders since they provide them with more control over conditions of access and prices;
? they provide incentives to transition towards sustainable and agroecological agricultural systems;
? they contribute to structuring the territorial economy; and
? they are places where political, social and cultural relations play out, with a set of governance rules and organisational structures.

Increasing the knowledge about territorial markets is key to understand how best to support their positive role in resilience building and driving the agroecological transition of farms in the region. The MTM data collection tool provides crucial information on territorial markets within a set sample, such as status of the markets and their geographical scope (formal, informal, local, national, transboundary, daily, weekly, etc.), product supply, product demand, infrastructures and basic services supporting the markets, as well as the role of women and youth in the market. The MTM tool was implemented on seven local markets in synergy with the TAPE tool by IRPAD and FAO during the PPG phase.

131. Markets in the Kayes region include local and regional/cross-border markets.

? The influence of local markets is limited to nearby villages and surrounding areas. They are generally held weekly and the products sold are those of basic necessity, especially cereals and livestock.

? The influence of regional markets reaches other neighbouring regions or countries (Mauritania, Senegal, Guinea). The products sold are generally more diversified. Examples include the Kayes market, which supplies everyday consumer products, construction materials, spare parts, household appliances, hydrocarbons and the Nioro market which supplies livestock, spices, textiles, everyday consumer products.

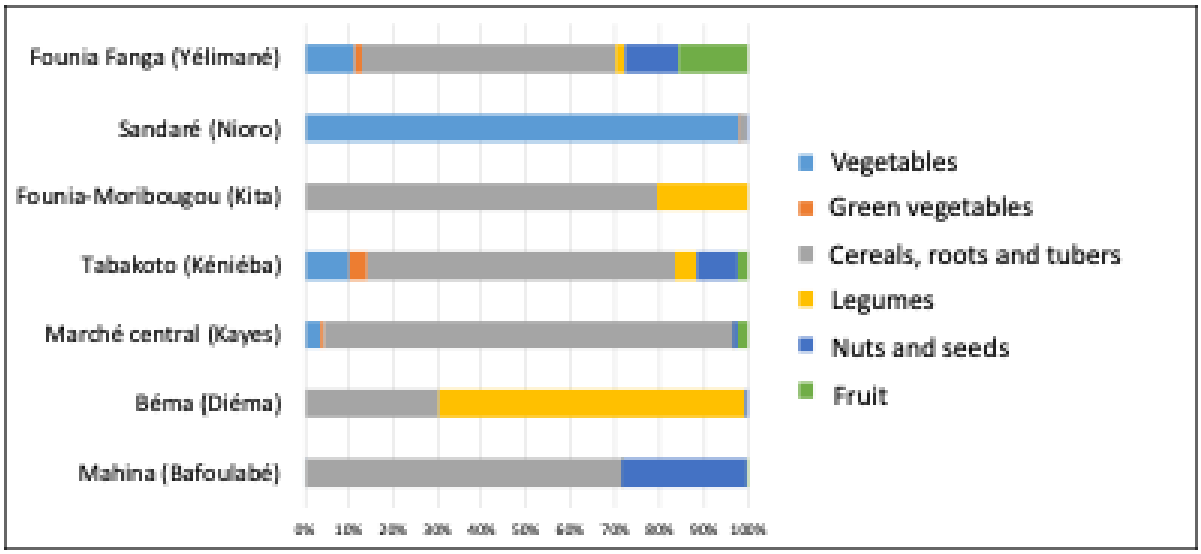
132. Trade between the Kayes region and other Malian regions mainly concerns in agro-pastoral products (cattle, hides and skins, potatoes, onions, potatoes, yams), fruit and vegetables. Exports from the Kayes region are mainly composed of agro-pastoral products (livestock, maize, cake, gum arabic, baobab etc.) to neighbouring countries (Senegal, Mauritania and Guinea). The value of exports is dominated by livestock. Imports include petroleum products, manufactured products (e.g. flour, oil, sweet drinks, as well as hardware and building materials...) and agricultural products (rice, potatoes, onions) from the same countries.

133. The MTM tool was used to study seven territorial markets in the Kayes region; some of the key results regarding baseline situation with regards to these markets are presented below.

134. Firstly, the diversity of products sold on territorial markets is uneven, with some markets showing a much larger choice of products than others (Figure 13). Remarkably, dairy products are totally absent on surveyed markets (although they could be sold outside markets), while fruit and green vegetables are only available on half the markets. There is also a strong correlation between diversity of products in farms and product destination: farms that produce

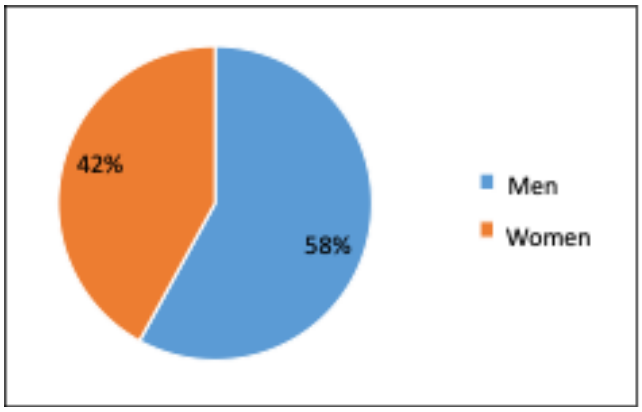
a higher diversity of agricultural commodities tend to sell these commodities on local markets[93] (as opposed to larger or distant markets). In addition, the survey shows that markets in the circles of Kita, Y?liman? and Bafoulab? provide relatively more opportunities for local trade than markets in other circles[94].

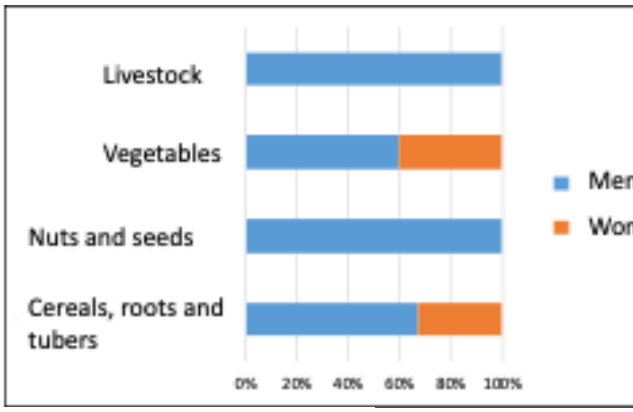
Figure 13. Diversity of products found on territorial markets.



135. Figure 14 below shows a relatively balanced participation of men and women in surveyed territorial markets. Although men?s participation rate (58%) is higher than that of women (42%), all markets are frequented by both women and men. However, while women attend territorial markets on the similar basis as men, their practices in these markets reflect the way societies are organised in the region. The activities carried out by men and women vary according to products and by-products. For example, the livestock and nut markets, which are those generating the highest revenues, are dominated by men. It is rare for women to come to markets to sell their animals directly: even if they own livestock, men are entrusted with marketing operations. These products are also those for which longer distances are covered between the farm and the market. On the opposite, women are relatively more involved in the marketing of vegetables, fruit and cereals, which are more often sold locally. In addition, women dominate the marketing of processed agricultural commodities and agricultural by-products; they are also overrepresented in the purchase of agricultural products.

Figure 14. Gender distribution in surveyed territorial markets, overall (left) and per type of product sold (right).





136. Additional observations on the organisation of producers on territorial markets as well as the linkages between product diversity and availability of market services and infrastructures are explored in the Barriers section (cf. also Figures 5 & 6).

Baseline situation with respect to access to local finance

137. There are currently a number of mechanisms through which local communities can access finance to acquire equipment and invest to increase their productivity and production. Such mechanisms include: i) micro-finance structures; ii) banks; and iii) the Associations Villageoises d?Epargne et de Cr?dit (Village Associations for Savings and Credits, AVEC).

138. AVECs have been set up and supported by a number of initiatives, including the GEF-funded project #4822. Through this project, 42 AVECs have been established, including 11 in the target circle of Kita. Training was provided on the following topics: i) overall explanation of the functioning of AVECs; ii) roles within the Management Committee; iii) definition of internal rules; and iv) monitoring tools. The presentation of each theme was followed by practical exercises (simulation cases) to enhance participants' understanding.

139. On average, these AVECs are composed of approx. 30 members (with two thirds of women); they had leveraged savings of CFA 397,000 within three months of their creation[95]. These funds are used in the form of loans repayable with interest, solidarity funds or for the purchase of seeds for the group. Each AVECs had granted loans of CFA 132,000 on average (as of September 2020). According to APFS members, this has enabled a significant mobilisation of credit funds to finance development activities for both women and men. In addition, it was reported that AVECs are being created in villages in the vicinity of those supported by GEF project #4822.

Baseline scenario related to climate change adaptation

140. As mentioned above, degrading environmental and climate conditions have caused people to migrate from the northern, drier areas to the southern, more humid parts in the country. This has amplified the pressure on already degraded natural resources, multiplying the risks of conflicts between competing NR uses (e.g. between herders and growers, and between agro-sylvo-pastoralists and gold seekers, loggers and harvesters of Non-Timber Forest Products ? NTFP ? such as Arabic gum).

141. Changing climate conditions have been affecting agricultural productivity in the Kayes region, both directly through a decrease in mean annual rainfall and prolonged dry spells, and indirectly by compounding land degradation dynamics induced by non-climate drivers (such as inadequate land management practices). For example, a drier climate tends to foster desertification processes, which are themselves fostered by deforestation practices. Furthermore, changes in rainfall patterns and prolonged dry spells affect some animal and plant species, such as specific rice cultivars[96]. To complement information available in the recent literature on climate change impact in Mali[97], a climate risk assessment will be conducted in the inception phase of project implementation.

142. The result is a complex socio-economic context in which fragility, conflict and migration are intertwined with climate change and environmental degradation. These interlinkages are poorly understood and have not been addressed holistically. Past and current investments in climate change adaptation of the rural sectors have focused on climate change adapted production practices (e.g. introduction of climate-resilient varieties in agriculture) and infrastructure development, mostly to manage water shortages and excess (drought and floods). Though these investments are fundamental in order to transition towards climate resilient, productive and sustainable agro-pastoral food systems, they are insufficient. The LDCF financing will catalyse the baseline investments with targeted support for governance, practices and finance innovations.

Associated baseline projects

143. The following baseline projects, identified as mobilised investment complementing the GEF investment, are considered.

Please, do note that during the extended PPG phase, the baseline projects (IDB?s IRDPK, CPEAP and FAO?s TCP) tabled in the approved PIF were nearing closure, and therefore expired as potential co-financing for the GEF/LDCF investment. A renewed dialogue with project partners was undertaken. From this dialogue, a number of priority investments were identified, and negotiations with co-financiers engaged.

The baseline projects tabled in the PIF delivered on improved income and livelihoods of people in project sites, on water infrastructure, increased agricultural productivity, and infrastructure. These elements remain relevant in all confirmed baseline investments, as illustrated below, and throughout the project document.

The confirmed partnership with co-financiers in the project document is different, but the relevance of the co-financing is maintained. Together with the GEF/LDCF project, the co-financing embraces the 10 elements of agroecology, and therefore directly contributes to the agri-food system transformation envisioned for this project. They do that in different ways, complementing GEF/LDCF investments, and focusing on:

a. the development of financial services for smallholders to access in order to transition towards profitable and sustainable production practices (baseline project INCLUSIF);
b. improved conditions for co-creation of knowledge, securing the involvement of the science-community and opening a dialogue between scientists and practitioners in order to push knowledge generation and learning(baseline project FAIR Sahel);

c. market integration and investments in basic infrastructure in order to improve resiliency (to climate change, conflict, Covid-19) of the most vulnerable rural households (baseline project SD3C);

d. the facilitation of synergies between transhumant pastoralists and agricultural populations, anticipating and managing (in a data-driven way) potential land and water tenure related conflicts, recognising that conflict eventually undermines all investment in sustainable NR management through planning and participatory management (baseline project Gestion des Conflits);

e. water management and irrigation investments, recognising the central role water plays in order to sustainably produce in the Sudano-Sahel climate increasingly challenged by drought and erratic rainfall (baseline project PAIS); and

f. value chain development in support of women livelihoods (baseline project Project d?Appui aux Femmes).

The catalytic role the GEF/LDCF investment plays, where the co-financing lays the basis for success (resolving conflict, investing in basic infrastructure, investing in conditions for improved knowledge generation and learning, ?), is accelerating the agroecological transition for vulnerable farm typologies in order to deliver on the project?s objective of productive and sustainable landscapes. The agroecological transition is proven to deliver improved soil health (contributing to LD), biodiversity (on farm, but also in the landscape), and climate resilience not the least thanks to diversification. Furthermore, the approach is poised to deliver a great number of additional benefits, thanks to the integrated nature of the approach. This has been all well captured in the following: Evidence on the multidimensional performance of agroecology in Mali using TAPE - ScienceDirect.

Table 11. Baseline projects contributing cofinancing to the proposed GEF investment.

Baseline project	Target areas	Executing partners	Description

Inclusive financing of agricultural commodity chains (INCLUSIF) 2021-2024 Funding sources: Government of Canada, IFAD[1] Total budget: USD 16 m Budget considered for co-financing: USD 1,731,000	In the Kayes region: Bafoulab?, K?ni?ba, Kita	MAEP	This project aims to improve the financial inclusion of Malian rural populations (particularly women), organisations and enterprises 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 (50% of whom are women) and 360 agricultural professional organisations with savings, credit and micro-insurance, income-generating activities and rural microenterprises. The two main components of INCLUSIF are: ? Component 1: Development of rural financial services. The expected outcome is that access by smallholders and their organisations to adapted financial services is improved. This will have an impact on financial education for target groups and SMEs. To this end, the project will work on restructuring the microfinance sector through institutional support, increased lending to microfinance institutions (MFI) through capitalisation and support for the operation of an MFI refinancing fund, support for new product development (micro-leasing, insurance and green finance products) and modernisation of MFIs by automating their operations, including with the use of mobile telephony. ? Component 2: Productive investment in value chains. The expected outcome is that smallholders develop profitable and sustainable productive partnerships with the private sector and the financial system. The project interventions will consist of capacity-building to undertake partnerships, technical assistance for contracting between actors, and the structuring, financing and monitoring of business plans. The project will provide facilitation to

Fostering an Agroecological Intensification to improve farmers? Resilience in Sahel (FAIR) Sahel 2020-2023 Funding sources: European Union, Agence Fran?aise de D?veloppement[2] (AFD) Total budget: USD 9 m Budget considered for co-financing: USD 427,000	Mali, Burkina Faso, Senegal In Mali: S?gou & Sikasso circles	CIRAD[3] Local partner in Mali: Institut d'Economie Rurale (IER)	The general objective of FAIR Sahel is to create the conditions for small producers in the Sahel to set up innovative technical systems of agroecological intensification, allowing them a more efficient and sustainable management of resources and an improvement of their incomes, while making their operation more resilient to climate change in the three countries of intervention of the project. A more specific objective is to redefine the role of research so that institutional, political and technical actors have access to the necessary knowledge, effectively support organized and voluntary producers and create favorable conditions for agroecological intensification. The modes of interaction of research with development actors and with producers will be adapted to allow: i) a more efficient co-production of knowledge on the agroecological processes that can be mobilised to improve the functioning of agro systems; ii) a more efficient adaptation and co-constructed agroecological system with the diversity of producers' conditions; and iii) the production of methods for supporting farmers by development actors and strengthening their skills in this area. Although FAIR Sahel does not intervene in the Kayes circle, agroecological innovations developed in the S?gou and Sikasso circles will be relevant for the target areas of the proposed GEF project. In addition, national capacity-building interventions from FAIR Sahel will complement those to be implemented by the proposed project. Several specific areas of complementarities, synergies and opportunities for coordination with FAIR Sahel have been co-identified with CIRAD during the PPG phase; these are presented in further detail in Annex S.

Programme conjoint Sahel en r?ponse aux d?fis COVID-19, conflits et changements climatiques (SD3C)[4] 2021-2023 (1st phase, only one considered here) 2024-2026 (2nd phase, to be confirmed) Funding sources: IFAD, World Food Programme, FAO Total budget: USD 31.99 m Budget considered for co-financing: USD 2,921,700	Mali, Burkina Faso, Senegal, Mauritania, Niger In Mali: circles of Nioro, Kayes, K?ni?ba and Nara	MAEP (coordinated execution with INCLUSIF)	The SD3C programme aims to build the resilience of the most vulnerable rural populations in the Sahel region in a sustainable manner in order to mitigate the effects of the COVID-19 crisis, conflict and climate change. Its development objective is to strengthen the livelihoods of small producers, especially women and youth living in cross-border areas. It focuses on the adoption of sustainable production practices and social cohesion approaches. SD3C will include two components: ? Component 1 focuses on improving the productive capital of the most vulnerable households and capacity building to enhance resilience to climate change and the participation of communities in the decision-making and mediation processes that support their initiatives. ? Component 2 aims to strengthen market integration and cooperation between populations in cross-border areas. Investments in infrastructure will be prioritised on the basis of a diagnosis of needs to support the dynamics of border markets and their knock-on effects on agropastoral areas and livestock mobility. It is expected that 75% of beneficiary producers will report greater livelihood resilience as a result of the programme. 2,500 hectares of agricultural land will be recovered, including 1,000 ha in the Kayes region. The programme will also contribute to the regeneration of 500 hectares of grazing areas (100 ha in the Kayes region), as well as the construction or rehabilitation of 50 pastoral infrastructures (ponds, wells).

Gestion des conflits et renforcement de la re?silience agro-pastorale a? la frontie?re Mauritano-Malienne[5] 2021-2023 Funding source: Peacebuilding Fund, executed by IOM and FAO Total budget: USD 1.45 m Budget considered for co-financing: USD 716,000	Circles of Kayes, Yelimane, Nioro and Nara	MAEP	This project aims to respond to the increasing number of conflicts between pastoral, agro-pastoral and agricultural populations in their access to natural resources, by increasing awareness and exchanges between these communities located along the transhumance corridor between Mali and Mauritania. In particular, it will aim to empower, structure and train these communities to better prevent and manage conflicts in collaboration with the authorities. It will also strengthen capacities for collecting and analysing transhumance data, which will make it possible to study the evolution of transhumance and conflicts between pastoralists and farmers. At the same time, by putting pastoralist populations at the centre of this project, it will strengthen resilience and improve their access to natural resources, in order to achieve a harmonious development of coexistence and cohesion between communities on both sides of the border.

Projet d?Appui ? l?Initiative pour l?Irrigation dans le Sahel au Mali (PAIS)[6] 2021-2025 Funding sources: GoM, AECID[7] (Spanish cooperation) Total budget: USD 4 m Budget considered for co-financing: USD 4 m	Kayes region	MAEP	The objective of the project is to strengthen the capacity of stakeholders and increase the irrigated areas for improved irrigation performance in the Kayes region. The project is structured around three components: i) modernisation of the institutional framework; ii) financing of irrigation investment solutions; and iii) knowledge management and coordination. Three types of activities will be conducted. ? Capacity building, including training on the elaboration of a Regional Irrigation Master Plan, the monitoring of irrigation planning, water and agricultural land rights, innovative irrigation solutions, soil diversification, protection and fertilisation techniques.. ? Irrigation investment: development programme on the Senegal River with priority given to supporting small-scale family irrigation, lowland development programme for village communities organised around micro-dam management committees; pilot programme for the development of market gardens managed by women's cooperatives near lowland development areas and/or in vulnerable villages; establishment of 460 ha of irrigation under total control (irrigation and drainage). Research and capitalisation: small-scale irrigation systems adapted and focused on innovative and suitable irrigation "solutions"; diversification in irrigated crops based on the results of Spanish research already tested in other Sahelian countries and put into practice/dissemination in Mali (e.g. tests on rainfed sorghum varieties in irrigation for grain and fodder production, tests on "intelligent" and localised fertilisation, ecological agro horticultural diversification, etc.); soil conservation.

Investment from the Land Development and Irrigation Water Supply Agency (Agence d?am?nagement des Terres et de fourniture de l?eau d?Irrigation, ATI) 2019-2026 Funding source: GoM Total budget: USD 22.19 m Budget considered for co-financing: USD 18 m	Kayes region	ATI	The ATI is a national public agency in charge of land development and irrigation water supply. Its missions are to: ? conduct land and water management operations, including the establishment of water irrigation and control infrastructure; ? facilitate the establishment and operation of agricultural farms and businesses; ? facilitate the management of land tenure, especially in irrigated agricultural areas; ? support technical authorities in the implementation of national programmes pertaining to land management in irrigated areas; and ? support rural producers in the management and maintenance of rural infrastructure and equipment. In the Kayes region, the ATI has a detailed, budgeted work programme amounting to FCFA 13.101 billion (approx. USD 22.19 million) until 2026. Of this, USD 18 million are relevant to the proposed project. This programme includes the management of 600 ha of lowlands, 18 ha of horticulture plots, procurement of agricultural equipment and construction and maintenance of water irrigation infrastructure. The ATI also invests in the ?New Agricultural Villages? programme in Mahina and Manantali, with a preliminary evaluation study under way. Technical feasibility studies in the circles of Nioro, Di?ma and Y?liman? are also ongoing for the establishment of production infrastructures (hydro-agricultural developments) and marketing infrastructures (storage warehouses, input shops, rural markets).

Projet d?Appui aux Femmes Vuln?rables ? travers la Valorisation int?gr?e des Produits Forestiers non Ligneux coupl?e aux activit?s d?Agroforesterie dans les r?gions de S?gou, Sikasso et Kayes (Kita)[8] 2021-2023 Funding source: FAO Total budget: USD 440,000 Budget considered for co-financing: USD 73,000	S?gou, Sikasso, Kayes (Kita circle)	FAO, MEADD	The project aims to strengthen the resilience of vulnerable women in the project intervention areas through better processing, conservation and marketing of non-timber forest products and the development of agroforestry activities. Through the project, vulnerable women in the target areas will acquire resources and knowledge in the fields of horticulture, agroforestry, prevention of nutritional risks, production, processing, conservation and marketing of non-timber forest products. Some products expected from this project that will support the objectives of the proposed GEF project include: i) stakeholder mapping in the shea, baobab, tamarind and horticulture value chains; ii) investment in processing facilities for these commodities; iii) capacity building in the areas of processing, conservation, marketing of NTFP, horticulture, agroforestry, cooperative management and the application of good nutritional practices; iv) improvement of marketing channels for the various products from the shea, tamarind and baobab sectors; and v) training for stakeholders to gain a working knowledge of legislative and regulatory texts relating to NTFPs.

Programme de Promotion des Syst?mes de Cultures Agro?cologiques et de Protection des Sols au Mali (PAESOL) 2022-2026 Funding sources : KfW[9], DNA Total budget : USD 16,350,000	Kayes (Y?liman? & Kayes circles), Koulikoro, Sikasso	DNA	The objective of PAESOL is formulated as follows: "The sustainability and resilience of rainfed family farming, which is particularly affected by climate change, is improved through responsible use of land and water resources based on agroecological and conservation principles.? The expected results are: 1. An integrated strategy and planning is achieved. 2. Different forms of knowledge transfer are functional. 3. The supply of seeds, bio-inputs and agricultural tools is improved and farmers use them. 4. Investments in SWH and agro-ecology measures are made. 5. Agro-ecological transformation of agricultural production is initiated. This pilot project will intervene in two of the proposed project?s target circles. Cooperation will be facilitated by the fact that DNA will execute both projects, and will materialise[10] through the provision of small equipment by PAESOL (e.g. chicken coops), joined awareness-raising efforts on the agroecology transition with local authorities (CROCSAD, CLOCSADs), sharing of inception studies planned for under PAESOL, training of extension officers and establishment by PAESOL of agricultural input outlets at the local level, which will also double as awareness-raising centers for best integrated pest management practices, as well as selling points for biopesticides (e.g. neem seed oil). Overall, both projects will work closely together to promote the agroecological transition in the two common target circles. In addition, a second phase of PAESOL could be envisaged in the future, that will extend interventions to additional communes in the Kayes region; opportunities to upscale the proposed project?s results through this avenue will be identified at the end of the implementation phase.

[1] International Fund for Agricultural Development
[2] French Development Agency
[3] Centre de coop?ration Internationale en Recherche Agronomique pour le D?veloppement
[4] Joint Sahel programme in response to Covid-19, conflicts and climat change challenges.
[5] Management of conflicts and strengthening of agro-pastoral resilience at the Mauritania-Mali border.
[6] Project to support irrigation in Sahel (Mali)
[7] Agencia Espa?ola de Cooperaci?n Internacional para el Desarrollo
[8] Support Project for Vulnerable Women through the Integrated Valorisation of Non-Timber Forest Products coupled with Agroforestry activities in the regions of S?gou, Sikasso and Kayes (Kita)
[9] Kreditanstalt f?r Wiederaufbau
[10] Although no specific cofinancing agreements have been made at this stage, since the official agreement between KfW and DNA has not yet been signed.

3) The proposed alternative scenario with a brief description of expected outcomes and components of the project and the project?s Theory of Change.

144. The problem that the proposed project seeks to address is the vicious circle between lack of income-generating options ? especially those that contribute to restoring rather than depleting natural resources ? , degradation of natural resources (especially land degradation) due to the lack of adaptive capacity of rural productive sectors in the face of the adverse impacts of climate change, and low agricultural productivity in the Kayes region of Mali, more specifically in the northern landscapes (circles of Kayes, Y?liman?, Nioro and Di?ma) and the southern landscapes (circles of Bafoulab? and Kita). Low agricultural productivity, *inter alia*, results into enroachments into the habitats of globally-significant biodiversity, which is thereby being threatened especially in Key Biodiversity Areas.

145. The objective of the proposed project is to promote innovations in governance, production and finance in order to reduce the vulnerability of the small-holder agro-sylvo-pastoral food systems and livelihoods, reversing land degradation and halting the loss of globally significant biodiversity in fragile landscapes of the Kayes region.

146. The integrated project approach embeds productive lands within landscapes that: i) are able to withstand actual and predicted climate stimuli and their impacts on agro-sylvo-pastoral small-holder food systems; and ii) provide ecosystem services fundamental to the survival of fragile agro-sylvo-patoral food systems, and globally significant biodiversity. It supports a transformational shift to resilient, productive and sustainable food and land-use systems in fragile dryland agro-ecosystems affected by the adverse impacts of climate change. To break the vicious circle described above, the development of territorial markets and value chains that supply them will accompany agroecological practices for agriculture and landscape restoration interventions, thereby helping rural livelihoods adapt to climate change and meeting a growing global demand for locally-produced commodities while protecting natural resources and biodiversity.

Agroecological approach, Sustainable Intensification of Prodution & Sustainable Land Management

These three concepts are at the core of the project strategy. Although they do overlap to some extent, they also place the focus on different aspects ? as briefly described below.

Overall, the proposed project embraces an **agroecology approach**, a concrete expression of FAO?s Sustainable Food and Agriculture vision for transitioning food systems to more productive and sustainable systems. It applies ecological concepts and principles to optimise interactions between plants, animals, humans and the environment while taking into consideration the social aspects that need to be addressed for a sustainable and fair food system. By building synergies, agroecology can support food production and food security and nutrition while restoring the ecosystem services and biodiversity that are essential for sustainable agriculture. Agroecology can play an important role in building resilience and adapting to climate change.

This agroecological approach is adopted in all components of the project, from enhancing governance at the landscape level (Component 1), to demonstrating packages of innovative production, restoration and management practices (Component 2), to developing and diversifying mixed value chains and livelihoods (Component 3), and co-creation of knowledge and knowledge management (Component 4). Therefore, the project is supporting the achievement of a number of SDGs, as its intervention logic is rooted in a number of complementary principles, including:
? adopting holistic approaches, such as agroecology (contributing to SDG 2);
? strengthening the climate resilience of rural communities, including through the adoption of climate-adapted agricultural and landscape management practices (contributing to SDG 13);
? diversifying rural employment targeting youth and women to slow their exodus (SDGs 1 & 2);
? developing pro-growth strategies in rural areas, focusing on women, family farmers and the people left furthest behind (SDGs 1, 2 & 8);
? adopting an ecosystem approach, considering the carrying capacity of the ecosystem and restoring and sustainably managing its multiple services (SDGs 6, 12, 13 and 15); and
? strengthening the climate resilience of vulnerable communities and securing rural livelihoods (SDGs 1, 8 & 13).

Sustainable Intensification of Production refers more specifically to the need to increase agricultural productivity, especially per unit of land. This concept focuses more on economic aspects (although these are also present in the dimensions of agroecology), with a view to, *inter alia*, improve food safety and limit the risk of extensive agriculture encroaching on the habitats of globally-significant biodiversity.

Sustainable Land Management refers to land-use planning that takes the sustainable use of natural resource into account, including in the face of climate change.

147. The target landscapes are representative of a large number of landscapes across Sahelian drylands, which will facilitate the replication of best practices and lessons learned through the proposed project. The four components of the proposed project are articulated with the five objectives of Land Degradation Neutrality as laid out in its Scientific Conceptual Framework[108], namely:

? maintain or improve ecosystem services;
? maintain or improve productivity, in order to enhance food security;
? increase resilience of the land and populations dependent on the land;
? seek synergies with other environmental objectives; and
? reinforce responsible governance of land tenure.

148. A Theory of Change diagram for the proposed project is presented in Annex T.

Components, outcomes, outputs and activities

Component 1. Strengthened governance for climate-adapted agro-sylvo-pastoral food systems and sustainably managed productive landscapes.

Outcome 1: Strengthened governance structures more effectively implement and monitor climate change adaptation in sustainable landscape management plans, resulting in sustainable production intensification, adoption of agroecological approches, resilient livelihoods and improved use and restoration of land and ecosystems and conservation of biodiversity.

149. The Kayes region suffers from a lack of adequate institutional capacity to plan for, implement and monitor climate change adaptation and sustainable land management at the landscape level. In accordance with the Guidelines for the application of the ?Scientific Conceptual Framework for Land Degradation Neutrality?[109], there is a need to create (at the regional level; Output 1.2) and capacitate (at the local level; Output 1.1) governance bodies to facilitate the design and implementation of landscape management plans, strengthen conflict resolution mechanisms and organize the cooperation of stakeholders in the agricultural sector. This approach follows best practices documented in the literature, whereby integrating diverse stakeholder perspectives, beginning with the design of SLM plans all the way to implementation and monitoring[110], thereby ensuring that their knowledge is fully integrated throughout the process[111], will increase the likelihood for their acceptance and implementation of SLM[112].

150. Most research shows that Mali is witnessing a growing number of conflicts over land use[113], with approximately 42% of land use conflicts between herders and farmers. In most cases, these conflicts stem from disputed access to and control over land and water resources, a situation that is becoming more frequent as these resources are degrading under climate and non-climate drivers[114]. In this context, fora that promote dialogue and agreement among farmers and herders, and more generally among natural resources users about rules governing access and control over land and water resources have the potential to increase transparency and diminish tensions.

151. Component 1 will be complemented by interventions at the national level, with a view to address some of the key governance barriers identified for the design, implementation and monitoring of SLM and adaptation strategies. Firstly, there is limited capacity to mainstream climate change adaptation and vulnerability considerations, as well as land and biodiversity management into environmental impact assessments. Secondly, landscape management is seldom monitored in a satisfactory fashion, thereby impeding the ability to adapt practices depending on documented successes and challenges ? a crucial step for the adaptive enforcement of complex land management strategies[115]. Outputs 1.3 and 1.4 will thus focus on building the capacity of relevant stakeholders at the national and regional levels to address these barriers.

152. This outcome will be delivered through four outputs:

Output 1.1: Capacity of at least 22 local landscape committees (COFOs) strengthened to effectively integrate climate change adaptation and vulnerability considerations, as well as land resources use and biodiversity conservation into sustainable landscape management plans.

153. The baseline situation regarding circle, commune and village-level COFOs in the Kayes region is detailed in Section 1.a.2. In accordance with the landscape lens adopted throughout the project, the preferred scale to support COFOs will be at the communal level. Amongst the 129 communes of the Kayes region, 112 have formally established a communal COFO. However, this does not entail that these COFOs are fulfilling the mandate assigned to them under Decree N?09-011 of 19 January 2009, and further laid out in Table 2. While fully functioning communal COFOs are key to the local governance of sustainable resources, several barriers described in the previous section prevent them from playing their role as local custodians of land planning development and enforcement, as well as conflict resolution. To ease this situation, a series of activities will be implemented, with a view to develop the capacity of at least 22 communal COFOs to fulfil their mandate. It should be noted that the operationalisation of COFOs is one of the key recommendations which emerged from the Forum on agroecology held in Kayes in March 2020.[116]

154. An on-the-job approach to capacity development will be taken, whereby COFOs will be accompanied to mainstream climate change adaptation and vulnerability considerations, as well as land and biodiversity resources use into sustainable landscape management plans ? in synergy with Output 2.1. This is as opposed to an expert-led approach, in which SCATs would be reviewed and revised by external parties. Capacity-building activities will include both training and provision of small means of transportation, which are essential for COFOs to carry out their surveillance missions.

Proposed activities:

Activity 1.1.1: Amongst the target communes, select at least 11 COFOs in the northern landscape and 11 COFOs in the southern landscape and develop tailored effectiveness barrier assessments (including capacity needs assessment) for each of them. The selection will include communes identified as most valuable in terms of biodiversity through the B-INTACT assessment (cf. Annex Q), meaning that more significantly contribute to BD conservation efforts by generating higher mean species abudance values. The capacity needs assessment shall be partly based on self-declared need and specific to the context of each commune in terms of land degradation status, climate vulnerability and biodiversity conservation. The capacity assessment plans will ensure women benefit equally as men, even when they are under-represented in the COFOs. Finally, the selection of communes will be consistent with the choice of territorial markets to be supported under Component 3.

Activity 1.1.2: On the basis of the capacity needs assessment, develop tailored and gender-sensitive training programmes for each COFO.

Activity 1.1.3: Conduct training activities in accordance with the tailored training programmes, in conjunction with the development of Sustainable Land Management Plans to be implemented under Output 2.1.

Activity 1.1.4: Provide small equipment to 22 COFOs to facilitate the enforcement of Sustainable Land Management Plans. Develop budgeted maintenance and operation plans for these equipments to ensure that their use is sustained through time and earmarked for COFO?s use exclusively.

Output 1.2: Five multi-stakeholder platforms established at the level of and around territorial markets, in order to effectively engage multiple stakeholders (COFOs, private sector, CSOs, local administration etc.) involved in agro-sylo-pastoral food systems resilience and sustainable land use and biodiversity conservation planning and investment.

155. Under this output, five multistakeholder platforms will be organised in the communes of Benkadi Founia (Founia market, Kita circle), Mahina (Mahina market, Mahina / Bafoulab? circles), B?ma (B?ma market, Di?ma circle), Fanga (Fanga market, Y?liman? circle) and Sam?-Dimboba (Sam? market, Kayes circle)[117]. These platforms will be structured at the level of and around territorial market, i.e. they will seek the participation of all relevant stakeholders involved in the functioning, administration and development of given territorial markets. Such stakeholders will include: i) producers represented by producers? organisations and /or APFS groups; ii) women?s groups; iii) consumers? organisations, where they exist; iv) market intermediaries, such as collectors and resellers; v) investors; vi) research institutions; vi) suppliers of agricultural inputs (seeds, fertilisers etc.); and viii) local authorities.

156. The terms of reference for the platforms will be collectively defined by the stakeholders themselves, with the guiding support of the project. The platforms may be comprised of thematic task forces, depending on the participants? interests. Experience shows that the prospect of discussions centred around the economic aspects of market organisation (investment opportunities, infrastructure building etc.) can serve as a vehicle to attract stakeholders and facilitate exchanges about best agroecology practices, climate-smart agriculture and land-use planning at the farm level. Typically, setting up a space where producers can have mediated discussions with collectors and bulk buyers helps the former to better understand market demand; this in turn creates opportunities to discuss how land use can be optimised at the farm level to adapt to seasonal demand. Throughout the establishment and animation of the platforms, proven methodologies ? such as the stakeholder engagement tool developed under the SHERPA project[118] ? will be used to maximise participation and steer discussions to ensure that the platforms work as avenues to promote the beneficial contributions of territorial markets to resilience strengthening and dissemination of agroecology practices. ~~Platforms will also contribute to define terms of references for the infrastructures to be built at territorial markets under Output 3.6.~~

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Proposed activities:

Activity 1.2.1: Define a preliminary list of relevant stakeholders in each target commune and collectively define the terms of reference for each platform, ensuring proper consideration of women participation and benefit sharing.

Activity 1.2.2: Following the terms of references of each platform, organise periodical plenary and task force meetings.

Activity 1.2.3: Produce and disseminate an annual stocktaking brief summarising the outcomes of each platform.

Activity 1.2.4: Support to access and manage funding in order to implement the business plans developed by the platforms.

Activity 1.2.5: Promote the mainstreaming of multi-stakeholder platforms into existing legal and regulatory frameworks, with a view to facilitate the upscaling of such platforms at the national level.

Output 1.3: At least 100 people from national and regional institutions have the capacity to conduct climate change vulnerability and environmental impact assessments at the landscape level, providing the evidence for planning and investment.

157. Climate change vulnerability and environmental impact assessments are key for the mainstreaming of SLM and biodiversity conservation into landscape management. Even though some progress has been achieved in this field through successive donor-funded projects, the mainstreaming of these dimensions into many development and landscape plans remains limited. Bringing in international or external expertise is only a second best in terms of institutional ownership; instead, the preferred solution is to bridge remaining capacity gaps within key Malian institutions with a view to facilitate the mainstreaming of these dimensions into strategic and operational planning. Sector-specific institutions to benefit from the project support include, but are not limited to the National & Regional Directorates for Agriculture (DNA & DRA), National Directorate for Animal Production and Industry (DNPIA), National Directorate for Fisheries (DNP), Permanent Assembly for Agricultural Chambers (APCAM), Regional Chambers of Agriculture (CRA) for agriculture, and National Agency for Environnment and Sustainable Development (AEDD) and National & Regional Directorates for Environemnt and Forestry (DNEF & DREF) for environment.

158. Such capacity building is particularly topical at a time when a number of development and land management plans are due for updating (e.g. Kayes SRAT), while other plans are expected to be created (e.g. SRATs for the newly-created regions of Nioro and Kita). In addition, ministerial regroupings and recompositions ? such as the merging of the former Ministry of Agriculture, Ministry of Livestock and Ministry of Fisheries ? offer opportunities to train relevant officers in a more efficient setting.

Proposed activities:

Activity 1.3.1: Conduct a capacity needs assessment at the national (DNA, DNEF, AEDD, DNPIA, DNP, IER, APCAM[119], NGOs) and regional (DRA, DREF, DRPIA, DRP, CRA, CRRA[120], NGOs, territorial collectivities) levels to identify key capacity and awareness gaps related to climate change vulnerability and environmental impact assessments at the landscape level[121].

Activity 1.3.2: In coordination with universities and vocational training centers, develop specific training curricula for each type of identified audience to bridge the capacity and awareness gaps analysed through Activity 1.3.1.

Activity 1.3.3: Produce training material, embed learning (including elearning) material in relevant existing curricula within universities and vocational training centers and conduct training sessions planned under Activity 1.3.2.

Activity 1.3.4: As relevant, support the operationalisation of Comit?s R?gional d?Orientation, de Coordination et de Suivi des Actions de D?veloppement (CROCSAD) in the newly-established regions of Nioro and Kita by providing dedicated training to its members and offering technical support for the development of SRATs for these two regions.

Activity 1.3.5: Accompany the 100 trainees to conduct mock, or, when feasible, real-life climate change vulnerability and environmental impact assessments and have them report on their experience in a critical & learning-by-doing perspective.

Output 1.4: At least 100 people from national and regional institutions have the capacity to conduct efficient monitoring of climate change resilience, land and biodiversity use and conservation, resulting from integrated sustainable landscape management interventions.

159. To facilitate the long-term improvement of climate change resilience, land and biodiversity use and conservation, relevant stakeholders need to have the capacities to monitor these aspects during the implementation of landscape management initiatives. Training needs pre-identified during the PPG phase include remote sensing (i.e. mapping of Land Cover, Land Productivity, soil carbon while simultaneously assessing land-use change), ecosystem assessments (i.e. mapping and typology of natural forests and plantations, wetlands health assessment), land degradation assessment (i.e. identification of key drivers of degradation, assessment of soil erosion), economic evaluation of ecosystem services, and assessments of the effects of climate change and ecosystem resilience.

Proposed activities:

Activity 1.4.1: Conduct a capacity needs assessment at the national (DNA, DNEF AEDD, DNPIA, DNP, IER, APCAM, NGOs) and regional (DRA, DREF, DRPIA, DRP, CRA, CRRA, NGOs, territorial collectivities) levels to identify key capacity and awareness gaps related to the monitoring of climate change resilience, land and biodiversity use and conservation.

Activity 1.4.2: In coordination with universities and vocational training centers, develop specific training curricula for each type of identified audience to bridge the capacity and awareness gaps analysed through Activity 1.4.1.

Activity 1.4.3: Produce training material, embed learning (including elearning) material in relevant existing curricula within universities and vocational training centers and conduct training sessions planned under Activity 1.4.2.

Activity 1.4.4: Accompany the 100 trainees to conduct mock, or, when feasible, real-life monitoring and have them report on their experience in a critical & learning-by-doing perspective.

Component 2. Integrated sustainable landscape management plans developed and implemented and innovative PRODUCTION practices and approaches demonstrated

Outcome 2: In selected pilot sites, integrated sustainable landscape management plans are implemented, contributing to climate change resilient agro-sylvo-pastoral food systems,

development and dissemination of agroecological approaches, sustainably intensified production, sustainable use and restoration of land and ecosystems and biodiversity conservation.

160. Under Component 2, the proposed project will develop and update Local Land Management Plans (Sch?mas Communal d?Am?nagement Territorial, SCAT) in the target northern and southern landscapes, based on the results of the site-specific Climate Risk Assessment to be conducted at project inception. This will allow to base land management not only on current conditions, but also on anticipated climate impacts that will alter the needs and resources of local communities in terms of natural resources. The project will accompany the implementation of these SCATs by disseminating agroecological approaches to benefit local communities, restoring ecosystems and conserving biodiversity-rich forest ecosystems. Informed by the baseline assessment provided by the TAPE tool during the PPG phase a special focus will be placed on supporting Groups 1 and 2 production systems. These groups ? namely vulnerable smallholders and larger agrobusinesses ? are both characterised by lower overall scores in terms of the agroecological transition (CAET). As such, they have the most potential in terms of impact of the project for disseminating best practices. In addition, these groups represent different socioeconomic profiles with different needs, as summarised in Table 9, and are equally present in the northern and southern landscapes (Figure 12). Supporting them adequately will therefore allow to showcase how agroecological practices can be adapted to various situations and increase the upscaling potential of the project?s impacts. Nevertheless, Group 3 farmers (namely farms most advanced in the agroecological transition) will be involved as ?coaches? for other farmers, including through local innovation tracking, demonstrations visits and local farmers? networks and organisations (cf. in particular visits to be organised for youths under Output 3.4); these will also be targeted by livelihood-support activities under Component 3.

161. To increase production efficiently and sustainably in a context of climate change, farmers need to understand how agricultural inputs, such as seeds, fertilisers and pesticides can either complement, or disrupt, the ecological processes on which farming relies. These include processes such as pollination and the natural pest management services provided by predatory and parasitic insects. Safeguard of biodiversity and ecosystem services is also critical to ensure environmental sustainability. In addition, climate change brings many complex and unpredictable changes that affect the viability and management of farming systems. Not only are there trends in the change of temperature and rainfall, but also increased climate variability especially in the duration and intensity of rainy seasons. This affects a large range of conditions relating to the performance and management of different integrated agri-sylvo-pastral systems. To cope with these complex relationships and increased variability at different levels, farmers need a greater understanding of the processes that affect the performance of the different production systems they manage and undertake constant experimentation and adaptation of production systems.

162. Consequently, the best agroecological practices to be developed and disseminated under Component 2 will increase local communities? capacity to cope not only with current climate conditions, but also anticipated climate impacts. All modules will incorporate an analysis of projected climate impacts ? as documented by the Climate Risk Assessment to be conducted in the inception phase ? and explicitly highlight how practices to be taught will enhance the ability of trainees to increase their resilience in the face of climate change. For example,

droughts have been recognised as a prominent climate impact that is expected to further disrupt agricultural production in Mali[122]. In the revised NDC (2021), it is envisaged that droughts would become more frequent in the first half of the winter season (May to July) after 2025, according to all climate models and emission scenarios[123]. Adequate measures thus need to be adopted to maintain and increase agricultural productivity given these new and changing conditions: increased availability and use of locally-adapted drought-resistent crop species and varieties, improved water management practices, production of drought-tolerant fodder etc. In some instances, the impacts of climate change have been well-identified by local communities, but these lack the capacities to implement the required solutions: for example, in Y?liman?, local producers report being powerless with the degradation of soils due to repeated droughts as well as dwindling productivity of some cereal species[124].

163. A main avenue of the proposed project to foster the management of resilient, productive and sustainable landscapes, the agroecological approach pays careful attention to keep together all different dimensions and interactions mentioned above, including relationships between plants (both crops and trees), animals, soils, water, humans and the environment within agricultural systems. The preferred tools to facilitate farms? uptake of this approach are the Agro-Sylvo-Pastoral Field Schools (APFS), which have proven their effectiveness in Mali to build capacity of farmers through a learning-by-doing perspective.

Lessons learned from APFS initiatives

A limited but growing body of literature examines past and ongoing APFS experiences to identify lessons learned useful for new initiatives. The APFS curricula and overall approach to be adopted in the proposed GEF project will be informed by these lessons learned. A selection of such lessons learned are briefly described below.

1) The training of field school facilitators is a crucial element, which cannot be reduced to conventional training. For example, facilitators must be trained to manage the governance of APFSs to maximise their sustainability. Handing over the leadership of the school plot after a few seasons of support can be an effective way to achieve this, as was experimented in an APFS project conducted in northern Togo (2014-2018). The support provided to the groups by the technicians was lighter and more punctual during the third cycle of the field schools in order to encourage their autonomy; while some decided to continue the trials for a fourth cycle, others developed the "field school" plot into a collective field (without comparative trials but managed collectively)[125].

2) Several barriers to the successful implementation of APFS have been identified. They include, *inter alia*, the top-down delivery of training, the lack of relevance of the curriculum to farmers[126] and an inadequate targeting strategy (equity to include the poorest vs. efficiency to include farmers with resources, agency, and education)[127].

3) Studies and evaluations rarely provide sufficient information concerning the long-term impacts of APFS[128]. Despite the relative diversity of APFS assessment methods, most studies focus on inputs (knowledge and skills) and outputs (changes in practices, in agricultural or economic performance) for farmers. Studies of outcomes (e.g. savings, loans, production diversification, self-confidence) and impacts (e.g. poverty reduction, quality of life, empowerment, environment) are rare. In the context of the proposed project, some of these outcomes and impacts will be monitored through a TAPE assessment to be conducted towards the end of the project. In addition, specific studies assessing the impact of APFS participation on farm practices and women empowerment will be carried out to contribute to a better understanding of how APFS and similar approaches can support agroecological transitions at territorial level (Component 4). This will allow to track progress along the ten dimensions of agroecology in the target circles.

164. This outcome will be delivered through three outputs.

Output 2.1 At least 22 integrated sustainable landscape management plans (SCATs) and 17 PDSECs developed by COFOs and relevant bodies for pilot sites, addressing agro-sylvo-pastoral food system adaptation priorities, and facilitating the agroecological transition, sustainable production intensification, sustainable use of land and biodiversity conservation ? accompanied by at least 22 inter-communal and six inter-circle pastoral conventions reviewed, revised as required and supported for their implementation.

165. Land-use planning at the communal level is governed by SCATs. To disseminate improved land use practices that take into account climate adaptation and biodiversity conservation requires to revise these SCATs in a number of communes, based on the results of site-specific Climate Risk Assessments (Activity 2.1.5). Under Output 2.1, the project will capitalise on capacity-building activities to be conducted under Output 1.1 and support COFOs to review and, as necessary, amend SCATs.

166. To ensure that land-use planning encompasses biodiversity priorities, the B-INTACT tool will be used in the communes engaged in SCAT revision (cf. box below). This will allow COFOs to better understand the value of biodiversity on their territory and help them prioritise land-use decisions based on, *inter alia*, biodiversity assets. The tool will be implemented in a participatory way, whereby land management options suggested by the COFOs can be parametered in the tool and different potential outcomes can be compared and discussed with the help of experts.

Biodiversity Integrated Assessment and Computation Tool (B-INTACT)

B-INTACT uniquely seeks to extend the scope of environmental assessments to capture biodiversity concerns, which are not accounted for in conventional carbon pricing. The biodiversity assessment in the tool takes on a quantitative and qualitative approach. The quantitative approach considers a set of relationships **for anthropogenic impacts on biodiversity from land use changes, habitat fragmentation, infrastructure and human encroachment**. Biodiversity responses are quantified in the mean species abundance (MSA) metric, which expresses the mean abundance of original species in disturbed conditions relative to their abundance in an undisturbed habitat (where MSA = 1 highlights an entirely intact ecosystem and MSA = 0 highlights a fully degraded ecosystem). Non-quantifiable impacts to biodiversity from project activities are assessed with a qualitative appraisal of the biodiversity sensitivity, management activities and agrobiodiversity practices, to complement the quantitative assessment.

Several easily comprehendible policy indicators are also derived from the MSA metric, such as the area of avoided/increased biodiversity loss, the added/lost social value of biodiversity and the MSA+ (which factors in the ecological value of the project site).

Detailed methodological information can be found here; a B-INTACT case study developed for one commune during the PPG phase is presented in Annex Q.

167. Revising SCATs may entail the revision of local pastoral conventions, that are designed to govern the use of land and water resources for pastoralists and farmers. Such conventions can be set at the commune, inter-commune or inter-circles level. Should revisions or adoption of new conventions be required, the following key recommendations from the PRAPS project will be fully taken into account[129]:

? negotiate with the customary land authorities and land institutions defined in current legislation;

? avoid marking off areas where pressure on land is not yet too great, to avoid legitimising agricultural expansion at the expense of pastoral mobility;
? include a provisional marking stage, playing the role of "land publicity" in the case of sensitive sections of land;
? proceed with the registration of land once the final marking is completed; and
? ensure the legality of the areas.

168. In addition to SCATs and pastoral conventions, the project will support the review, and, as necessary, revision of 17 PDSECs to fully mainstream land-use management, climate adaptation and biodiversity conservation into development planning at the local level.

Proposed activities:

Activity 2.1.1: Conduct B-INTACT assessments of land management options proposed by COFOs in 20 selected communes, including communes in the vicinity of biodiversity-rich areas. Organise participatory discussions of B-INTACT outcomes.

Activity 2.1.2: Organise collective reviews and, as required, revisions of at least 22 SCATs to further mainstream climate change adaptation, biodiversity conservation and land management into landscape planning. A list of communes prioritised for the revision of SCATs is presented in Annex R1.

Activity 2.1.3: Among pre-selected pastoral conventions, select at least 22 intercommunal and six inter-circle pastoral conventions (cf. Annex R2). As required, support COFOs and relevant stakeholders to revise these pastoral conventions to align with updated SCATs. Support the implementation of revised pastoral conventions by providing small materials and tools (e.g. fences, equipment for water points etc.).

Activity 2.1.4: Organise collective reviews and, as required, revisions of at least 17 PDSECs to further mainstream climate change adaptation, biodiversity conservation and land management into development planning. A list of communes prioritised for the revision of PDSECs is presented in Annex R1.

Activity 2.1.5 Conduct a climate risk assessment during the inception stage of the project for the target areas.

Output 2.2: In coordination with COFOs and supporting active engagement of multiple (and sometimes conflicting) resource users in planning and management, at least 100 Community Listening Groups (Clubs d?Ecoute Communautaires, CEC) and or Dimitra Clubs established and animated.

169. Conflicts over natural resources can be expected to increase in Mali as populations expand and rainfall and temperatures become more erratic. However, while measures that slow the pace of these changes are important, they cannot overcome the immediate need to embrace options for adapting to the consequences of heightened climatic variability.

170. Herders-farmers conflicts are typical of areas with strong coexistence of pastoralism and farming. It was shown that fora that promote dialogue and agreement among farmers and herders about rules governing access and control over land and water resources have the potential to increase transparency and diminish tensions[130]. Herders should be actively sought out in such participatory processes to ensure that their needs and priorities are represented on par with those of farmers.

171. The APFS approach to be implemented under Output 2.3 will contribute to reducing the risk of conflicts over natural resources. To further increase the capacity of local communities to mediate these conflicts should they nevertheless occur, a number of CECs have been established in villages, and work as the main discussion and conflict-resolution fora at the decentralised, grassroots level. They are self-organised fora, where women and youth have a significant role (some sessions can be women-only). Decisions are taken and publicised through local radios. Neverheless, not all target communes have established CECs; furthermore some of these CECs do not have the capacity and resources to fully play their role.

172. A particular type of CECs are the Dimitra clubs, established and supported by FAO across sub-Saharan Africa ? over 3,400 have been created as of yet[131]. Dimitra clubs are voluntary, informal groups for women, men and youth who discuss common problems and determine ways to address them by acting together and using local resources. Agriculture is a common theme but no exclusively; other topics may include climate change, education, health, infrastructure, nutrition, peace and women?s status. Although the FAO methodology entails an initial support to facilitate the setting up of the clubs and provides them with training and coaching, the clubs themselves are self-managed. Dimitra Clubs create a space to also discuss and take action in relation with community social norms and behaviours affecting women ? enabling women?s leadership and encouraging men?s engagement. Nearly all clubs own a solar-powered radio which allows them to maintain contacts with one another but also with technical partners. By fostering partnerships with local radio stations, Dimitra Clubs learn from one another, broadcast their initiatives and spark dialogue in the wider community and beyond.

173. Past experiences with women-only Dimitra clubs in Mali have successfully proven their capacity to enable women to contribute to all the public matters of community life[132], and therefore to engage in decision-making. As required, Dimitra clubs will be established and supported in the target communes. In other cases, the Dimitra approach will be promoted among existing community listening groups (e.g. CECs), with a view to avoid any duplication of community groups[133] as recommended in the evaluation of the ?Caisses de R?silience? project[134].

Proposed activities:

Activity 2.2.1: In at least 20 communes, conduct a participatory diagnostic of existing CECs and identify potential capacity gaps.

Activity 2.2.2: As per the results of Activity 2.2.1, promote the Dimitra approach within existing community listening groups (CECs) or, where absent, establish Dimitra clubs in at least 20 communes. This may include the following actions:

? developing an inventory of participatory venues ;
? raising awareness among targeted communities on the advantages of CECs / Dimitra clubs ;
? identifying potential partners ;
? organising launching workshops;
? conducting decentralised training ;
? conducting technical training for CECs/Dimitra clubs according to their needs ;
? identifying and training radio partners ;
? producing and disseminating interactive gender-sensitive radio broadcasts ; and
? using video and other means to share experiences.

Activity 2.2.3: In at least 20 communes, promote linkages and partnerships between listening groups and AVECs and income-generating activities (including those supported by the project under Output 3.2) so that funding options for actions that may be endorsed by listening groups can be envisaged at the community level[135].

Output 2.3: At least 15,000 agro-sylvo-pastoral producers participate in Agro- Pastoral Field Schools (APFS) and at least 40,000 additional producers from neighbouring communities are trained through exposure visits to APFS and exchange with participating farmers.

174. Together with interested local producers, extension agents and researchers, promising landscape management measures will be identified, selected and adapted to the biophysical and socio-economic specificities of each local context, among those identified in the scientific literature for their land restoration, adaptation and biodiversity conservation co-benefits[136]. Their implementation will take place in the planning framwork set forth in the SCATs, pastoral conventions, PDSECs and other land-use and development plans in effect, in collaboration with farmers? groups involved in APFS.

175. Promising measures will indicatively cover: i) the development of locally-adapted fodder culture; ii) erosion control techniques (e.g. stone barriers); iii) pasture enrichment; iv) reforestation and assisted natural regeneration (esp. in the southern landscapes); v) protection of forested areas; vi) afforestation for fuelwood production and distribution of improved cooking stoves; and vii) integration of trees onto farms.

176. In collaboration with existing innovative farmers (Group 2 in TAPE), as well as researchers and extension agents, locally-adapted agroecological practices will be identified, tested and enabled, such as: i) the use of drought-adapted crop varieties; ii) reduced tillage; iii) alternatives to chemical fertilisers (use of compost) and pesticides (biological control, intercropping); iv) fascines; v) za?; vi) the use of leguminous plants; vii) crop diversification (over time and space), better integration of livestock-crop-trees on land and practices to improve soil health crop rotation. These techniques will help reduce rural communities? vulnerability to the impacts of climate change, while improving and intensifying agricultural productivity and fighting land degradation.

177. The preferred approach to promote the development of local agroecological innovations and enable their uptake is through Agro-Pastoral Field Schools (APFS), which have been implemented in Mali since 1998. The APFS are an adaptation of Farmer Field Schools, an

informal education approach for adults to enable the development and experimentation of improved farming practices through comparative experiments and hands-on training. In this approach, participatory methods are used to create an environment conducive to learning, in which participants can exchange knowledge and experiment in a risk-free setting. Practical field exercises using direct observation, discussion and decision making encourage learning by ?doing. Following the interests of local producers, technical topics that can be addressed through APFS include soil, crop, livestock and water management, seeds multiplication and varietal testing, agropastoralism, aquaculture, agroforestry and nutrition, but also social topics such conflict resolution, income generation and marketing of products. The APFS process facilitates individual, household and community empowerment and cohesion. Indeed, APFS have proved to strengthen not only technical skills and decision-making capacities of farmers, but also to significantly influence the community as well as intra-household dynamics. APFS strengthen community relations and the capacity of listening to others? opinion, to formulate and express personal points of view and to find together a common solution through the process of communication and learning. It will thus be a useful stepping stone towards the reduction of conflicts over natural resources.

Note on the Delfino plow / Vallerani system

Under Output 2.3, the innovative Delfino plow / Vallerani system will be purchased and implemented. This system consists in a special plow operated with a tractor, which allows to mechanically create half-moons (za?) and ultimately restore degraded land by improving the use of water (limiting run-off and facilitating infiltration). Although this system was never experimented in Mali, it has been extensively tested across the Sahel and in other arid areas with remarkable results. In Burkina Faso for example, FAO used the system over the past years, which allowed to collect real-life data on operational and maintenance costs, as well as on the efficiency of the system. It was observed that 10 to 15 ha can be restored per day by creating 7,000 half-moons. In contrast, only about 50 half-moons can be created per day manually through difficult, labour-intensive processes that are particularly arduous for women ? processes that will eventually become even more strenuous as dry periods last longer and the earth become less easy to work with. Eventually, it is thus expected that mechanising the process will create additional demand for this best SLM, climate-adapted practice whereas other initiatives have found that local communities (esp. women) can be reluctant to engage in such tasks when they prove to be too labour-intensive.

Although upfront and maintenance costs of the system are non-negligible, its efficiency makes it a reasonable investment, especially in areas where the soil can be particularly arduous to work, which can deter restoration efforts. Upon purchasing of the system, a detailed operation & maintenance plan will be designed (options to share these costs with other governmental and non-governmental partners who may wish to use the equipment will be explored) and an exit strategy will be elaborated so that the systems can be used efficiently during and after the project implementation period. In addition, the upscaling potential of SLM interventions using the Delfino plow will be explored through the development of a ?Note de gestion de l??quipement? similar to the one presented in Annex W, developed by DNA to loan mechanical tillers with remarkable results[137]. Arrangements will be discussed to loan the plow to cooperatives, NGOs, local authorities and producer?s organisations with a view to fund the maintenance of the plow in a sustainable manner and maximise the utilization rate of the equipment beyond the project specific interventions. This may include agreements with partner projects (e.g. PAESOL) to use the plow.

Additional information on the system can be found here.

Proposed activities:

Activity 2.3.1: Draft model curricula for agro-sylvo-pastoral activities to be conducted with APFSs[138], adapted to the different production systems involved (e.g. according to crop systems identified in the TAPE assesment). The curricula will be drafted together by researchers, extension agents and related ministers and innovative agroecological farmers. The curricula will be adapted to different agricultural systems and, based on farmers? interest and needs, integrate topics including animal health, nutrition, genetic improvement, climate change, links with farming practices, pasture management, use of wild seeds to rehabilitate community pasture lands, water and soil management including applying crop residues, improvement of soil fertility by managing crop and livestock cycles, composting, agroforestry, early warning systems, community supervising systems, land rights, agroecology principles, horticulture, perennial crops, observation of climate-related pest outbreaks etc.

Activity 2.3.2: Provide refresher training to 12 experienced master trainers on three modules, namely: i) awareness raising on gender aspects (role of women in transitioning towards more resilient and agroecological systems); ii) nutrition linked to on-farm diversification; iii) re-organising farms towards agroecological systems; iv) using digital tools to support innovation and agroecology; v) mechanisation and equipment for agroecological systems; and vi) use of local forest non-timber resources.

Activity 2.3.3: Establish six training centres[139] and train 150 APFS facilitators (including staff from the Local Livestock Production and Industry Service - SLPIA[140], livestock associations, local NGOs, civil society, private veterinarians and producers) through Memorandum of Understandings and retraining of existing DNA trainers on the integration of crop/livestock systems into APFS.

Activity 2.3.4: Conduct a participatory identification of interested beneficiaries, topics of interest for APFS and target zones for implementing the APFSs within selected communes of the northern and southern landscapes. Identify existing promising innovations in local territories that can contribute to a basked of options from which APFS participants can choose to experiment in their collective experimental fields[141].

Activity 2.3.5: Implement 600 APFSs in selected zones and train 15,000 agro-pastoralists (25 individuals maximum per training group with at least 50% women) in the APFS approach according to locally adapted versions of the training curricula drafted as part of Activity 2.3.1. The curricula should be adapted in collaboration with producers who joined the APFS as to reflect their interest, perceived opportunities and problems. The farmers will meet over the course of 18 months, training targeted to reflect the specific needs of target farmers (e.g. Groups 1 & 2), monitoring of groups by two or three trainers with complementary skills (animal health, nutrition, genetic improvement, pasture management, links between agriculture and livestock, agroecology principles, perennial crops etc.). As part of the APFS training sessions, the following actions will be taken (not exclusively):

- as required from pastoral conventions and SCATs, and in consultation and agreement with local communities, setup no-entry zones (?zones de mise en d?fens?) to conserve available pastures in five pilot zones around protected areas, with a view to improve pasture management, prevent encroachment and limit grazing pressure in biodiversity-rich protected areas;

- throughout PY3 and 4, strengthening and improvement of animal genetics: participatory development of animal genetics in collaboration with trained APFS groups, training of inseminators and provision and exchange of genetic animal seed (e.g. amongst different groups;
- disseminate improved animal feeding practices: creation of salt blocks/lick-blocks, conservation of fodder etc.; and
- provide training then assess and improve crop genetic diversity through the setup of Diversity Field Fora (DFF) approach in APFSs.

Activity 2.3.6: Organise sessions to retrain APFS facilitators in PY2 and PY3 on the basis of potential capacity gaps reported during PY1 and PY2. Organise annual stocktaking workshops for facilitators in PY 2, 3, 4 and 5.

Activity 2.3.7: Organise participatory community analysis of climate risks by each APFS and identify local CCA measures and technologies.

Activity 2.3.8: Procure a Delfino plough and restore at least 10,000 ha through zai implemented mechanically with the Vallerani system, with a focus on northern landscapes (circles of Kayes and Y?liman?). Areas managed through mechanised zai may be used to demonstrate further SLM techniques and other agroecological practices during APFS training sessions. Develop a ?Note de gestion de l??quipement? to maximise the upscaling potential of the plow by lending it to other partners.

Activity 2.3.9: Promote the upscaling of locally-adapted agroecological practices developed through APFS. Facilitate communication between APFSs through use of simple and adapted digital platforms, open days, exchange visits and national meetings. Train farmers to make participatory videos and support their dissemination, for instance in collaboration with Digital Green. Participants in APFS (and JFFLS, see Output 3.4) can work to produce these videos, choosing what they want to film, and then videos can be shown in other villages. Being trained on video-making, participants will also be able to produce videos and photos to build digital story-telling and carry out participatory monitoring of project outcomes. In addition, Access Agriculture may be commissioned to make more technical videos in collaboration with local farmers ? documenting some of the most innovative practices.

Component 3. Improved finance for and investment into climate change adapted livelihoods and sources of income of vulnerable agro-sylvo-pastoral communities.

Outcome 3: Selected mixed value chains are strengthened for improved and climate-resilient rural livelihoods of agro-sylvo-pastoral women and youth.

178. Under Component 3, the proposed project will strengthen the sustainability of a basket of diverse goods centred around territorial markets through reorganisation of farms for improved efficiency and sustainability, synergies with the private sector (certification, access to markets), leveraging of innovative financing mechanisms and support Micro, Small and Medium Enterprises (MSME) in reaching market-driven opportunities. All livelihood-support activities under Component 3 will veer away from a ?business-as-usual? development

approach, and will specifically aim to strengthen the climate resilience of rural livelihoods, especially for the most vulnerable categories of population (women, youths, people with disabilities). This will capitalise on the capacity development activities conducted through APFSs under Component 2.

The **baskets of goods approach** fits within the broader territorial approach to development, with which the proposed project is aligned. In the mid-1990s, the territorial development perspective incorporated notions of multi-actor networks and inter-cooperation to better understand the reality of empirical experiences. It is in this context that the ?Basket of Territorial Goods and Services? (BTGS) was presented. Faced with the crisis of intensive agricultural systems and new reconfigurations of rural spaces, this approach analyzes local actors who articulate market and non-market spaces to create a homogenous product supply, coherent with territorial characteristics, which value, among other aspects, local know-how, culture and natural environments. Within this context, the role of social actors ? public, private or those related to associations ? determines the unfolding of development projects that deviate from conventional or purely economic initiatives.

179. To break the vicious circle between land degradation, poverty and loss of biological diversity, Component 3 will focus on the development of local value chains to accompany the agroecological and sustainable intensification practices for agriculture and landscape restoration interventions, thereby helping rural livelihoods adapt to climate change and meeting a growing demand for locally-produced commodities while protecting natural resources and biodiversity. In accordance with global best practices[142], an integrated, territorial approach will be used for the development of economic activities centered around specific baskets of goods (Outputs 3.1) with strong climate adaptation benefits and potential to foster the agroecological transition. Indeed, agroecology as a movement ?differs from other, more piecemeal approaches to solving individual problems in the food industry by espousing a holistic, transformative approach to subvert top-down food regimes, centering the small-scale farmer as the driver, actor, and agent of this agricultural revolution?[143]. As such, agroecological transitions are recognised for their potential to support the empowerment of marginalised groups and individuals and reduce gender inequities in rural communities.

180. This will be achieved through the development of commercial plans and assistance to ensure more diverse products can reach the markets, with benefits for both smallscale producers and consumers, focusing on the participation and empowerment of women ? as recommended in the literature[144]. In practice, such support will materialise through technical and commercial assistance provided to organize smallscale producers interested and involved in agroecological production (component 2), with emphasis on women producers involved in fruit and vegetable production and transformation as well as support to existing cooperatives (audit and updating of existing strategies; elaboration of new strategies) As required, seed funding will be provided for the acquisition of transformation facilities by groups of women farmers. Certification processes will also be collectively elaborated with producers to facilitate the market access of locally-produced commodities, including on regional and national markets where relevant (Output 3.4).

181. In developing countries, there is an increasing number of examples of enabling environments for Sustainable Land Management generated through the creation of sustainable

business cases initiated by youth-led MSMEs and through training of future business leaders[145]. In this perspective, and in the context of a region where the unemployment and emigration of youths are very strong, the proposed project will implement the Junior Farmer Field and Life School approach to catalyse innovation and restore the attractivity of the agricultural sector focusing on the production and transformation of agricultural products and related products (e.g. seed multiplication, tree nurseries, organic inputs, development of locally adapted small equipment) (Output 3.4).

182. This outcome will be delivered through four outputs.

Output 3.1: Best practices developed and disseminated to support the agroecological transition of ASP communities, with a focus on women empowerment.

183. While the implementation of APFS under Component 2 will focus on capacity development, a number of actions need to be taken to support the same target communities in the translation of acquired capacity into concrete actions and investment into the agroecological transition. The four guiding principles to select the activities that will thus be supported are: i) climate-adaptedness of activities; ii) effectiveness and relevance of practices for women and young farmers; iii) demonstrated contribution towards the agroecological transition; and iv) market access.

184. Climate adaptedness: all income-generating activities to be supported under this output will need to have demonstrated adaptation benefits in light of realised and anticipated climate impacts. To assess this, a checklist will be developed based on the detailed Climate Risk Assessment to be specifically developed for each target circle at project inception (Activity 2.1.5).

185. Specific benefits for women and other vulnerable groups: activities envisaged that will particularly benefit to women include vegetable production, poultry and small livestock, transformation and marketing of agroecological products, and production of neem seed oil. Poultry and keeping of small livestock are mostly conducted by women, serve as a saving technique (small livestock is kept and bred until a significant expense arises, in which case the animals are sold) and feed into the circular economy approach that is integral to the agroecological transition (see below), as animals can be fed on agricultural waste, while their own waste can be used to produce compost. As for neem seed oil, dedicated equipment was acquired in the Kita region under the project "Emergency support to the fight against the army worm in Mali[146]?, including a specific press to extract oil from neem seeds (neem seed oil is used as a bio-pesticide). A multi-actor platform ? dubbed "Dakan" ? was created to organise the local neem value chain. However, this project ended and the Dakan platform is unable to operate the press, because of a lack of small equipment, need for a revamped packaging of the 4-wire meter etc. Under this output, the proposed project could thus support the Dakan platform to operationalise the neem seed oil value chain. This would empower women by reducing unemployment and contribute to efforts to combat poverty, especially for women, young girls and boys, most of whom are physically disabled and abandoned. The dissemination of neem seed oil will facilitate the biological treatment of armworm, a pest which could become a growing threat with climate change (see table below).

186. Contribution towards the agroecological transition: following training, participants of APFS and JFFLS (see below) will be supported to identify and implement an integrated approach to ASP production on their farms, with a view to optimise waste management (in a circular economy perspective, e.g. using animal waste to produce compost), reduce dependency to external (and chemical) inputs and increase the diversification of ASP systems by promoting more diversified mixes of agricultural activities combined with cattle keeping and use of agroforestry resources (where relevant). This will also include facilitation of collective actions at community level to facilitate transition of individual farms (e.g. joint production of compost or inputs at farm level, setup of nurseries and seed multiplication units, setup of areas for locally climate-adapted seed conservation).

187. Support to market access: an integrated approach to support the agroecological transition cannot focus solely on the production side and ignore barriers to market access, especially when women are targeted as the core actors to drive agroecological transition. This is why, although the development of market infrastructures should be covered by cofinancing, training on marketing approaches will be provided to a selection of willing producers among APFS trainees. This will be complemented by the construction of public toilets with water access in target territorial markets, as PPG studies have shown that women have a more constrained access to sell their products on markets notably because of, among other issues, a lack of toilet facilities.

188. Based on the climate risk assessment as well as surveys conducted within APFSs, a number of livelihood support actions will be taken to facilitate the transition of target communities towards the development of climate-resilient, agroecological production systems that empower women.

Table 12. Example of screening matrix for pre-selected activities to be supported under Output 3.1 (to be adapted together with key stakeholders)

	Climate adaptation potential	**Potential for women (as assessed by women)**	**Potential to foster agroecological transition**	**Link with markets**
Horticulture	Selection of climate-adapted species Diversification of income sources in case of climate shock	Horticulture is mainly practiced by women	Strong potential for nutrition Soil management Agrobiodiversity The TAPE assessment shed light on the numerous benefits of horticulture in terms of agrobiodiversity, nutrition and inclusion of women in economic value chains.	Women producers to be supported for market access
Neem seed oil	Changes in rainfall patterns have been documented to increase the risk of armyworm infestations[147] in other contexts. This risk will be further analysed for the case of the Kayes region in the Climate Risk Assessment.	Mainly practiced by women (and disabled people)	Neem seed oil is used as a biopesticide against armyworm The production of neem seed oil will also foster the plantation of neem trees, a specie with strong agroforestry potential.	Production cooperatives will be supported to access markets (link with selling points and other cooperatives, incl. those supported by other projects)
Poultry & small livestock	Only climate-resilient breeds will be promoted (e.g. Wassa Ch? chicken[148]) Diversification of income sources in case of climate shock	Mostly practiced by women, including as a saving technique	Strong contribution to circular economy approach (animal feed on agricultural waste and their own waste is used to produce compost)	No specific barrier

Compost production	Compost is less costly for local communities than chemical fertilisers, which enables them to invest in other income-generating activities and strengthen resilience Compost production can also be a sustainable source of income	? Access to compost depends on the intrahousehold allocation of resources and can be reserved for the use of the (typically male) head of the household, hence the need to support women?s access to compost[149]. ? Decreased exposure to chemical fertilisers	Decreased dependence to external, chemical inputs	Business plans to sell compost will be developed
Dairy production	Income diversification for smallholders Only climate-resilient breeds will be promoted	? As the often *de facto* care-takers and food-preparers, women are predominately at the center of family nutrition. Despite this, women and girls often suffer the greatest health threat from malnutrition[150]. As such, gender equity and women?s empowerment find synergy with improved dietary diversity, nutrition, and overall wellbeing for all members of a community. ? Milk collection is mainly done by women	Strong contribution to circular economy approach (animal feed on agricultural waste and their own waste is used to produce compost)	Business plans to sell milk to Di?ma collection center will be developed

NB: the proposed activities described below are suggestions based on consultations conducted during the PPG phase. Based on changes in local circumstances by the time of project implementation (e.g. in case another initiative has provided support on the same activities in the meantime or in order to reflect opportunities for agroecological transition by local farmers), some activities may need to be updated.

Proposed activities

Horticulture
Activity 3.1.1: Assist local stakeholders ? esp. women ? with the development of business plans for horticulture in at least 40 target communes ? including budget planning for input provision.

Activity 3.1.2: In accordance with local land-use plans, support the development of collective and individual horticulture areas (fencing, provision of solar-powered pumps and other equipment).

Activity 3.1.3: Facilitate the establishment of bulk contracts with local suppliers for the provision of inputs (biopesticides and biological control agents, seeds, biofertilisers and biostimulants etc.) and explore options to set up some of this production locally by women and youth as a result of APFS/JFFLS.

Activity 3.1.4: Cooperate with local cooperatives, innovative agroecological farmers and other promising initiatives to facilitate the drafting of a financing plan for the collective purchase and operation of transport and other equipment to facilitate selling fruit and vegetables on territorial markets.

Neem seed oil

Activity 3.1.5: Acquire small equipment to operationalise the neem press in Kita.

Activity 3.1.6: Conduct tailored business training[151] for women involved with the Dakan platform.

Activity 3.1.7: Based on the lessons learned from the Dakan platform, establish, equip and train neem seed oil women?s cooperatives in at least two other circles.

Poultry & small livestock
Activity 3.1.8: Assist local stakeholders with the development of business plans for small livestock and poultry in at least 40 target communes ? including budget planning for input provision.

Activity 3.1.9: Provide improved, climate-resilient breeds of chicken (e.g. Wassa Ch?) as well as chicken feed. NB: the provision of material for the construction of chicken coops will be covered by cofinancing.

Activity 3.1.10: Based on a joint analysis with local stakeholders and interest by trainees of APFS and JFFLS, support the development of local initiatives for the production of small livestock (goats, sheep), feed, veterinary products and other products as needed for agroecological transformation of livestock enterprises.

Compost production

Activity 3.1.11 : Support compost production by encouraging collective composting production techniques and providing small equipment.

Activity 3.1.12 : Support the development of business plans for the commercial production and marketing of compost locally.

Dairy

Activity 3.1.13: Build the capacities ~~(knowledge and means)~~ of ambulant dairy vendors in terms of dairy health/nutrition so that they become ambassadors of better nutrition and production.

Activity 3.1.14: Support the development and implementation of fodder production and conservation plans in at least five communes in the Di?ma circle, with the view to facilitate access to fodder for dairy cows.

Activity 3.1.15: Procure small equipment to support fodder production in the Di?ma circle.

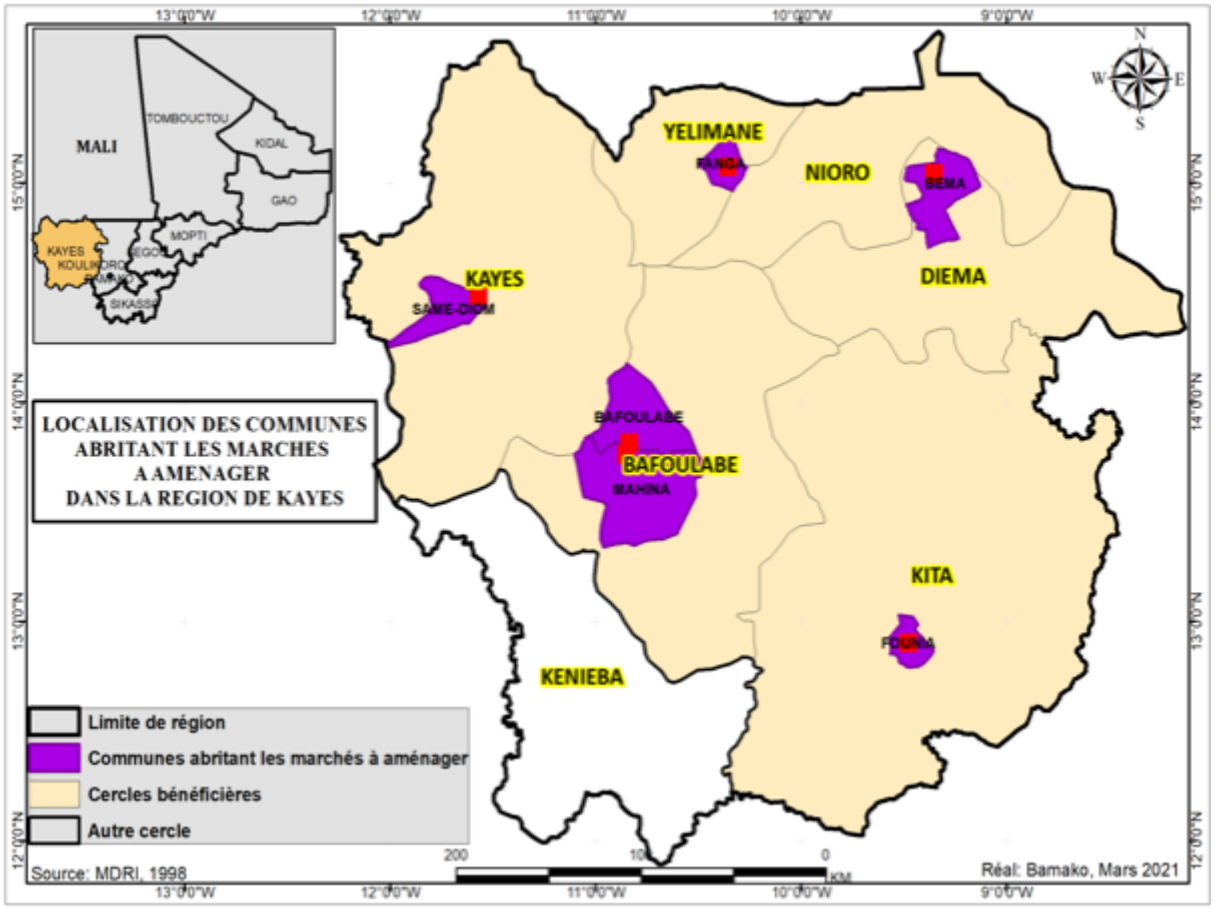
Activity 3.1.16: Procure dairy cows from climate-resilient breeds to at least 20 households (APFS participants) in the Di?ma circle.

Activity 3.1.17: Provide marketing and business training to the dairy cooperative members in Di?ma.

Facilitating market access for women

Activity 3.1.18: In collaboration with the multi-stakeholder platforms established under Output 1.2, define requirement specifications for the construction of public toilets with water access in four target territorial markets (Founia, Fanga, B?ma, Sam?). Procure construction companies to build toilet facilities accordingly.

Figure 15. Location of territorial markets to be supported under Outputs 1.2 and 3.1.



Output 3.2: In connection with the Centre d?Appui ? la Microfinance et au D?veloppement (CAMIDE), innovative financial mechanisms set up to leverage funding and facilitate investments in support of an agro-ecological transition .

189. Supporting agroecological systems is in itself a way to address credit limitation because agroecological practices are labour rather than capital intensive. Agroecology does not require a lot of external inputs or heavy machinery but rather relies on natural synergies and use of local resources. Nevertheless, while shifting toward an agroecological production model does not imply massive investments, it still bears fixed costs (seeds, wells, fencings, small-scale equipment or storage facilities) that many farmers ? especially women and youth ? cannot afford. This is because of a lack of funding and constrained access thereof.

190. In response, Output 3.2 follows the ?Caisse de R?silience? approach that has been successfully implemented by FAO in several countries, including in the Mopti and S?gou regions of Mali through two past projects[152]. This integrated approach consists in combining the productive and social components of resilience building with a financial component, that may typically include the establishment of community contingency funds and improved access to local credit systems (e.g. via AVECs), with a focus on the most vulnerable populations (esp. women and youth). The implementation of climate-resilient agriculture practices, agroforestry and disaster risk management (productive component), as well as the assistance received to improve production, help increase the productivity of poor agricultural or agro pastoral households. The increased levels of production obtained can thus improve incomes. Combined

with a community-based saving and loan system or warrantage schemes (financial component), the additional income enables to increase the available capital and to improve the reimbursement of loans. The communities can decide to use this increased capital to integrate within the most vulnerable and marginalised households, in order to enable them to better protect their livelihoods and access the benefits linked to the membership of a formalised group. The purpose is thus to support vulnerable households to break the vicious circle of poverty and dependence, that repeated assistance interventions often fail to address in a sustainable way, for a virtuous cycle of investment, savings and resilience.

191. The activities to be conducted under this output will be informed by lessons learned and recommendations from the evaluation of the Belgian-funded, FAO-executed project on Caisses de R?silience in Mopti and S?gou[153]. Some of these key recommendations include: i) establishing partnerships with microfinance institutions to sustain the financing of AVECs after the project?s termination; ii) working on advocacy with key stakeholders; iii) developing an exit strategy for AVECs; and iv) providing training in basic bookkeeping and financial literacy to AVEC Management Committee members ? including women.

192. CAMIDE, a grassroot organisation that implements a micro-finance network (called Benso Jamanu[154]) based in Kayes, has developed a special financial tool to include women in their activities, namely the Yeredeme solidarity groups. This approach was developed as a solution to the limited participation of women in traditional AVECs. These groups integrate the development of livelihood activities, financial intermediation, women's empowerment and community development. They are characterised by:

? peer learning and role modelling of group members towards other women in the community;
? a bottom-top approach, from the group level to the village (village organisation) and commune (federation) levels;
? strong linkages with local governmental authorities (at the communal level).

193. Financial mediation is an integral part of the model. The Yeredeme[155] group model establishes links between the AVECs and the Yeredeme village organisations. Once the financial management capacity is adequate at group level (credit management using their members' own resources), groups can obtain funding from their village organisation (VO). The village organisations then obtain funding from Benso Jamanu, financed by CAMIDE. VOs take a single loan from their AVEC in order to manage the allocation, distribution and collection of the loans granted to the groups. Within the group, individual members take a (revolving) charge to manage the loan distribution and collection from individual members. 25% of the standard interest payment on the loans remains with the groups and VO, while 50% is paid to the AVEC. Interest income allows the capitalisation of the group's net assets to be recapitalised and is also a sustainable source of income for the VOs and the communal federation.

194. Links with AVECs are therefore mutually beneficial. Yeredeme groups receive a local source of capital for women's livelihood activities, while the micro-finance network is able to serve rural women in a cost-effective way through the funding mechanism of village organisations. In conclusion, the Yeredeme group model increases women's participation in microfinance.

Proposed activities:

Activity 3.2.1: Collectively identify at least 36 communes[156] (among communes benefiting from APFS activities) for the development of the Benso Jamanu microfinance network and the establishment of Yeredeme groups ? linking with existing APFS and JFFLS groups, where possible.

Activity 3.2.2: Develop terms of references for the implementation of AVECs to fund IGAs with clear climate adaptation benefits and/or GEBs in the ASP sector, fully supporting an agroecological transition, through the Benso Jamanu network in partnership with CAMIDE.

Activity 3.2.3: Develop terms of references for the implementation of Yeredeme groups in connection with APFSs (Output 2.3) and Dimitra clubs / CECs (Output 2.2) in partnership with CAMIDE.

Activity 3.2.4: Sign LoAs with CAMIDE and other partners ? as needed ? to implement the terms of references developed under Activities 3.2.2 and 3.2.3.

Output 3.3: Participatory certification systems elaborated in partnership with the private sector, civil society and international sustainability certification initiatives to facilitate access to markets

195. Facilitating market access for farmers who engage in agroecological and organic production is a necessary condition to encourage this transition, increase the value that farmers can extract from their work and ultimately foster the resilience of rural livelihoods. Given the importance of territorial markets for product diversity, the proposed project will focus on national-level market access[157].

196. The Participatory Guarantee System (PGS) is the preferred certification modality in the context of this project, as it combines the flexibility and low-transaction cost of self-declared systems with the transparency and visibility of second-party certification. PGS are ?essentially locally focused quality assurance systems that certify producers based on the active participation of farmers, consumers and other local actors. Farmers pledge to follow organic standards, and a group of actors (usually made up of farmers only, or a mix of farmers, consumers and an agronomist) conduct field visits at regular time intervals ? they can be monthly, bi-yearly or yearly. A PGS committee is set up with representatives from all stakeholder groups that reviews the report and determines if certification should be granted or not.?[158]

197. In Mali, a PGS for organic products has been developed and implemented by the NGO Association Malienne pour la Solidarit? et le D?veloppement (AMSD). This PGS, dubbed ?Bio local?, was developed in accordance with the international standards for organic agricultural commodities set out in the Codex Alimentarius[159]. AMSD implements the Bio local label to help producers involved in organic and agroecological production access local and national markets. The support brought by AMSD includes training and awareness raising sessions for farmers to understand the specifications of Bio local and disseminate the adequate techniques to meet these specifications. Such agricultural techniques are largely those promoted through the APFSs (Output 2.3).

198. To be granted the Bio local label and be accepted into the PGS Bio local distribution network, the producer (legal entity or individual person) must meet the following criteria:

- producers? organisations :
  - give proof of its legal existence;
  - commit to respecting the control and validation procedures of the local organic PGS network productions;
  - commit to enforce the potential sanctions in case of non-respect of the label specifications by member producers;
  - commit to have the products put on the market analysed by the National Public Health Laboratory or any other competent laboratory in the event of complaints and doubts about these products;
  - commit to participate in the implementation of authorised organic inputs;
  - abandon the use of pesticides, chemical fertilisers and genetically-modified seeds under penalty of exclusion from the network; and
  - sign a written commitment with AMSD to abide by the principle of organic and agroecological production.
- individual producers :
  - commit to produce in accordance with the prescribed techniques that respect the Bio local specifications;
  - participate in meetings and training courses organised by the organisation to improve the quality of labelled products; and
  - be able to prove the existence of a permanent and clean water point.

Proposed activities:

Activity 3.3.1: Conduct a cross-checking exercise with AMSD to identify any discrepancies between practices promoted through the APFSs and Bio local specifications ? in particular with respect to pest management[160].

Activity 3.3.2: Develop terms of references for the implementation of certification in partnership with AMSD in 40 communes (cf. Activity 3.1.1).

Activity 3.3.3: Sign agreements with AMSD or other partners ? as needed ? to implement the terms of references developed under Activity 3.3.2.

Output 3.4: The Junior Farmer Field and Life School approach implemented to catalyse innovation in support of an agroecological transition and restore the attractivity of the agricultural sector.

199. The Kayes region suffers from significant rural emigration[161], especially from the youth. This is largely because of a perceived lack of opportunity in the region, a perception that this exacerbated by the constrained development of rural areas. One avenue to alter this vision is to incentivise the youth to get involved in the modernisation of the agricultural sector, from the production to the transformation of commodities. This will contribute to increase agricultural productivity, strengthen value chains and ultimately secure greater economic and development benefits. Such an approach is one of the recommendations[162] that emerged from studies

conducted under the FAO project ?Support to responsible investment in agriculture and food systems?, implemented in Mali and ten other African countries[163].

200. To achieve this, the project will build on the Junior Farmer Field and Life School (JFFLS) approach and learn from the Vocational Training, Integration and Entrepreneurship Support for Rural Youth (FIER) project, to provide a fair response to the unemployment issue. The main purposes of this approach are to facilitate young people's access to credit, productive resources, markets and professional organisations.

201. According to the TAPE assessment, the most affected areas in terms of rural youth emigration in the Kayes region are the circles of Di?ma (northern landscape) and Kita (southern landscape). The project will focus on implementing the JFFLS mainly in these two circles, in coordination with APFS and support to income-generating activities provided by the proposed project.

Proposed activities:

Activity 3.4.1: Conduct a detailed mapping and analysis of relevant programmes and investments underway in Mali, including their target groups (e.g. youth 15-40; young adolescents 15-17) and strategies adopted. Collect data on young people already trained during the previous PIC[164] II. Produce a SWOT[165] analysis of Rural Animation Centres (Centres d?Animations Rurales, CAR), Rural Delivery Centres (Centres de Prestation Rurales, CPR) and training centres (incl. the Centre polytechnique rural and Centre de formation agropastoral in Kita, and the Centre de formation agropastorale Boubou Sow in Di?ma) available in the Di?ma and Kita circles.

Activity 3.4.2: Carry out a rapid analysis of agricultural sectors, including in terms of farmers' organisations, to identify and evaluate the value chains that are more attractive to rural youth and that offer the best market opportunities.

Activity 3.4.3: Based on the assessments produced trough Activities 3.4.1 and 3.4.2, develop and implement JFFLS curricula tailored to the Di?ma and Kita circles, including the use of digital tools for agroecological farms.

Activity 3.4.4: Accompany young people trained in JFFLS through established Public Private Partnerships (PPP) by facilitating their access to markets and productive resources in collaboration with national partners, with a view to promote the agroecological transition.

Activity 3.4.5 Organise participatory workshops to identify a mechanism to facilitate the allocation of land to organised groups of young women and men with agricultural projects.

Activity 3.4.6: Organise exchange visits and study tours for youths within the country or to other countries in the sub-region.

Activity 3.4.7: Support and monitor the development of business plans for the promotion of decent employment of young people in agri-food value chains.

202. **Component 4. Knowledge management and outscaling**.

Outcome 4: Project monitored, results captured and lessons learned widely disseminated.

203. Under this component, the proposed project will develop, document, and disseminate locally-adapted innovations, lessons learned and best practices on agroecology and SLM. It will also effect active coordination with co-financing partners and relevant initiatives, with a view to capitalise, disseminate and raise awareness on agroecological approaches and SLM practices. This will be done through studies, field visits, exchanges, collaboration with academia and feeding information from the proposed project into regional and global datasets and platforms, such as FAO?s Hand-in-Hand initiative.

204. This outcome will be delivered through three outputs.

Output 4.1: Project Monitoring, Evaluation & Learning plan developed and implemented.

205. The set of indicators developed in the M&E plan is largely based on results from the innovative assessment tools used during the PPG phase. This includes the ten dimensions of agroecology, synthesised in the Characterisation of Agroecology Transition (CAET) score, which will be monitored through a follow-up TAPE assessment towards the end of the project. Other metrics to be included in the M&E plan will be based on B-INTACT assessments, including Mean Species Abundance and economic impact of biodiversity conservation measures.

206. Indicators to monitor the establishment of the APFS network have also been integrated. The role of each partner institution from the national to the village level in monitoring, evaluating and reporting on SLM, SFM, biodiversity conservation, ecosystem functioning and land restoration to support the systematic measurement of the progress towards achieving land degradation neutrality (LDN), GEBs, SDGs, NBSAP and other national targets will be defined in a participatory manner. An M&E strategy and guidelines will be developed accordingly.

207. Participatory monitoring processes by community members for community members will also be included, such as visual story telling, most significant change and other methodologies that allow local community members to define the changes they want to see from collaboration with the project, to monitor those and evaluate the effectiveness of actions carried out by the project.

Proposed activity:

Activity 4.1.1: Co-develop and implement the MEL plan, identifying indicators, tools and the monitoring strategy for the project?s activities, including roles and responsibilities as well as a timeline and budget. Indicators will be confirmed up processes/tools to track changes for those indicators will be determined. In addition, some tools will be included to assess unexpected changes ? for instance through story telling at the end of the project, most significant impact by local community members, or evaluation using change trajectories ? understanding how participants? farming systems have changed as a result of project activities[166].

Activity 4.1.2: Organise a workshop to review the the project?s MEL system at project inception.

Activity 4.1.3: Hold annual planification workshops.

Activity 4.1.4: Carry out at least two studies assessing the effect of APFS on participating farmers? farming practices, environmental performance, livelihoods; and the cost-benefits of the APFS and JFFLS approach for participating farmers. Focus on specific effects for women, as key actors in the agroecological transitions. Studies will combine quantitative assessments with qualitative assessments. They should be carried out in collaboration with national and international research institutes.

Output 4.2: A learning, outreach & communication strategy developed and implemented, including coordination and awareness-raising meetings with co-financing partners.

208. The project will develop a comprehensive outreach and communication strategy, which will include the development of targeted public relations products for the general public. This will include newsletters, social media pages and publications, blogs, scientific papers as well as more traditional media such as printed leaflets in local languages, posters describing biodiversity and sustainable agricultural practices and any other communications support, as necessary.

209. The Hand-in-Hand (HIH) initiative is an evidence-based, country-led and country-owned initiative of FAO to accelerate agricultural transformation and sustainable rural development to eradicate poverty (SDG 1) and end hunger and all forms of malnutrition (SDG 2). It aims to facilitate the identification of investment opportunities (and helping matching investors with these opportunities) that would be the most effective and efficient to contribute to the above-mentioned objectives. One of the tools of the HIH iniative is the Geospatial Platform[167], which includes advanced geo-spatial modeling and analytics to identify the biggest opportunities to raise the incomes and reduce the inequities and vulnerabilities of rural populations. The Platform brings together over 20 technical units from multiple domains across FAO, from Animal Health to Trade and Markets, integrating data from across FAO on Soil, Land, Water, Climate, Fisheries, Livestock, Crops, Forestry, Trade, Social and Economics, among others. Mali being one of the 27 initial countries that took an engagement with the HIH initiative, the proposed project will contribute to feed the HIH initiative (including the Geospatial Platform) with information gathered through M&E and implementation of assessment tools (e.g. TAPE and B-INTACT). This will help upscale the impacts of the project beyond the scope of its target geography and timeline.

210. Furthermore, opportunities for knowledge exchange with partners involved in relevant initiatives nationally and regionally will be seized. As of now, development partners involved in supporting the agroecological transition in Mali only meet on an ad-hoc basis, for example at project steering committee meetings or on the occasion of thematic events[168]. Although these are useful events to share knowledge and lessons learned, there is a need for a more structured partnership to exchange experiences and share updates about relevant initiatives ? ongoing or in development partners? pipelines. This is all the more relevant at the level of cofinancing partners for the proposed GEF project. Indeed, the intention behind cofinancing commitments is also to strengthen institutional collaboration at the technical level. Many

relevant partner initiatives aiming to foster the agroecological transition in West Africa exist; such relevant national or regional initiatives include the FAO-GEF projects ?Improving the climate resilience of agro-sylvo-pastoral production systems in Burkina Faso? and ?Restoration of degraded landscapes for sustainable food systems in the Peanut Basin and Eastern Senegal? under development and the FAIR Sahel project executed by CIRAD in Senegal, Mali and Burkina Faso (cf. Annex T) ? among others. Exchange visits and seminars will be organised, collaborations with academia will be developed with a view to contribute the national and regional partnership in favour of the agroecological transition. During the PPG phase already, the implementation of the TAPE tool provided an opportunity to publish new results about the characterisation of the agroecological transition in the Kayes region, results that were largely discussed and disseminated among partners, NGOs and CSOs (including during the TAPE results validation workshop). A regional partnership dynamic was built upon for this PPG phase ? with technical collaboration between the FAO offices in Mali and Burkina Faso, for example ? and will be further expanded.

Proposed activities:

Activity 4.2.1: Publish annual briefs on the project?s accomplishments, experiences and lessons learned. Share these briefs with national and regional public institutions, national and international development organisations and NGOs.

Activity 4.2.2: Publish at least five thematic videos documenting key activities conducted by the project with challenges, difficulties, lessons learned and recommendations. The themes may include: i) developing ?Caisses de R?silience? and AVECs; ii) using the Delfino plough to restore degraded land with mechanised za? (including a description of operational costs); and iii) practical examples of mainstreaming CCA and biodiversity conservation into local land-use and development plans; iv) innovations to reduce labour for the agroecological transition.

Activity 4.2.3: Organise biannual meetings of the cofinancing partners to exchange lessons learned and share knowledge, co-chaired by the GEF national Focal Point.

Activity 4.2.4: Support the HIH initiative by feeding information gathered through M&E activities and implementation of specific tools (e.g. TAPE and B-INTACT) in the Geospatial Platforms. Liaise with HIH custodians to identify other avenues for collaboration.

Activity 4.2.5: Organise knowledge exchange visits, both nationally and regionally, with relevant development partners, CSOs and academia. Collaborate with academia to publish at least two scientific papers to document the impact of the project activities from a scientific perspective.

Activity 4.2.6: In PY 2, 3, 4 and 5, organise a regional seminar on the agroecological transition in West Africa for relevant governmental officers, development partners, NGOs and CSOs. These seminars will include field visits.

Activity 4.2.7: Organise information and knowledge exchange on APFS, including with the Central Africa Field School Network, African Forum For Agricultural Advisory Services, Global FFS Platform etc.

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Output 4.3: Project mid-term and final evaluations undertaken

211. This final output includes key monitoring activities that will provide evidence to support other project components. It includes the punctual mid-term and end-of-project independent evaluation as per GEF and FAO procedures.

Proposed activities:

Activity 4.3.1: Conduct an independent mid-term review. Publish the mid-term review report in English and French for easier dissemination in Mali. Organise a workshop with co-financing partners and other relevant institutions to discuss the findings from the review and identify appropriate measures to be implemented as a result.

Activity 4.3.2: Conduct an independent terminal evaluation. Publish the terminal evaluation report in English and French for easier dissemination in Mali. Organise a workshop with co-financing partners and other relevant institutions to discuss the findings from the review and ensure that recommendations are disseminated beyond the sole audience of implementing and executing institutions so that they can inform other initiatives.

Activity 4.3.3: Conduct a terminal TAPE assessment[169] and produce a comparative report (with the baseline assessment) to identify agroecological transition dynamics in the Kayes region.

Activity 4.3.4: Conduct a terminal B-INTACT assessment of the selected communes studied under Activity 2.1.1 and produce a comparative report to identify gains in MSA through the project interventions.

4) Alignment with GEF focal area and/or Impact Program strategies;

212. The proposed project adopts a landscape approach to tackle biodiversity, land management and climate change adaptation and vulnerability issues with a focus on improved agricultural practices and the strengthening of selected value chains. It is fully aligned with the following GEF-7 Focal Areas programmes and LDCF/SCCF programming strategy:

? LD-1-1: Maintain or improve flow of agro-ecosystem services to sustain food production and livelihoods through Sustainable Land Management (SLM).

Land degradation processes will be fought through the enforcement of SLM processes, from planning (through SLAs and EIAs under Components 1 & 2), to implementation (under Component 2), to monitoring (under Components 1 & 4). This will set enabling conditions for the sustainable intensification of the agricultural production and the strengthening of key activities around selected baskets of goods (under Component 3), thereby fostering rural livelihoods.

? LD-1-4: Reduce pressures on natural resources from competing land uses and increase resilience in the wider landscape.

By developing and/or updating SLAs, the proposed project will improve land-use planning, with a special focus on the sustainable management of rare and degraded natural resources (namely forests, water, pastures and cropland). Competing uses will thus be regulated, while mechanisms for conflict resolution will be strengthened (under Component 1). The sustainable intensification of

the agricultural production will also contribute to reduce pressures on natural resources in the northern and southern landscapes of the Kayes region.

? BD-1-1: Mainstream biodiversity across sectors as well as landscapes and seascapes through biodiversity mainstreaming in priority sectors.

The proposed project will mainstream biodiversity conservation measures into the SLAs to be developed and/or updated. In addition, conservation measures will be implemented under Component 2 benefiting the conservation of about 25,000 ha of biodiversity-rich areas. The agroecological practices that will be disseminated under Component 2 will also benefit biological diversity by promoting the use of genetically-diverse crops as well as intercropping. Finally, under Component 1, the capacity of national institutions to conduct environmental impact assessments integrating biodiversity will be strengthened.

? CCA-1: Reduce vulnerability and increase resilience through innovation and technology transfer for climate change adaptation.

The resilience of rural communities to the adverse impacts of climate change will be strengthened through the dissemination of innovations in governance, production and finance of agro-sylvo-pastoral small-holder food systems. All three combined are believed to ensure that agricultural livelihoods can sustain changes in climatic conditions thanks to increased value-added, diversification, sustainably-intensified production and climate-resilient ecosystem services.

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

213. The definition of resilience that has been used to guide the development of the project strategy is the one cited by UNFCCC from the IPCC Assessment Report 4 (2007), namely ?the ability of a social or ecological system to absorb disturbances while retaining the same basic structure and ways of functioning, the capacity for self-organization and the capacity to adapt to stress and change?. All interventions proposed for funding by the LDCF pertain to this resilience-building approach; in particular, the various income-generating activities proposed for support under Component 3 all aim to contribute towards the adaptation option ranked as the 2nd prioritised adaptation intervention in Mali?s NAPA (Table 19): diversifying income sources.

214. The target agro-sylvo-pastoral population being all threatened by the risk of decreasing agro-sylvo-pastoral yields because of the detrimental impacts of climate change described in the project document (and that will be further substantiated through the Climate Risk Assessment to be conducted at the inception phase of the project, including a study on drought risks), diversifying their income sources away from a few staple ASP productions will indeed increase the adaptive capacity of these populations, and their resilience. In addition, this support will specifically target some of the most vulnerable categories of the population (namely, women and youths) who are even more likely to see their livelihood disrupted by the impact of climate change as they have a more constrained access to natural resources (including land and water), inputs, and finance.

215. Additional information on the proposed IGAs ? including expected GEBs ? is provided below.

? Horticulture: this is a remarkable source of income diversification as the beneficiaries will be encouraged to cultivate a diversity of climate-resilient species. Also, a more diverse

production will facilitate access to a diversified diet, which is a source of health resilience. GEB: horticulture fosters agro-biodiversity insofar as the diversity of species cultivated is sufficient; the use of local, indigenous species will be promoted.

? Small livestock and poultry: only local, indigenous and climate-resistant species will be promoted. This IGA will be a source of income diversification, and it will represent the ?savings? of beneficiary households, therefore supporting the resiliency of these households..

? Neem seed oil production: this IGA will benefit women, youths and people with disabilities, and strengthen their income sources. GEB: neem seed oil is used as a bio-pesticide against armyworm. Developing this value chain was also a recommendation from the terminal evaluation of the LDCF-FAO #4822 project.

? Dairy: the development of a climate-resilient dairy value chain will provide a regular income stream to smallholders (one or two cows per household) that will complement their main income. Dairy products can contribute to diet diversification and food safety, which forms part of health resilience (in particular for children). Only climate-resilient species will be promoted.

216. Finally, the proposed project suggests following a territorial approach and to support the development of territorial markets. The development of territorial markets is seen as a powerful way to strengthen food security and nutrition in the face of climate change (one of the key adaptation priorities set forth by Mali in its NAPA and NDC), and to strengthen the resilience of local populations. A case study from Mali has been documented in OECD/FAO/UNCDF (2016), *Adopting a Territorial Approach to Food Security and Nutrition Policy*, OECD Publishing, Paris. By benefitting from an improved access to territorial markets, local producers will be less dependent upon intermediaries to sell their product on regional or national markets. This will cut costs and allow more value added to be recaptured by the producers themselves, thereby allowing them to increase their revenue, make savings and ultimately invest in their development. This is a primary source of resilience. In addition, the Mapping of Territorial Market conducted during the PPG phase has shown that the diversity of products sold on territorial markets is higher than on regional markets. Supporting the development of territorial markets will therefore encourage production diversification, while also accelerate the agroecological transition (which includes BD, LD and CC).

217. Indicative total co-financing mobilised for the proposed project amounts to USD 27,875,700. It stems from three sources:

? the MAEP, for a total of USD 23,731,000, through the following investments:
  - o the INCLUSIF (Inclusive financing of agricultural commodity chains) project (USD 1,731,000);
  - o the PAIS (Projet d?appui ? l?Initiative pour l?Irrigation dans le Sahel au Mali) project (USD 4,000,000);
  - o Land Development and Irrigation Water Supply Agency (ATI) investments for the development of private cropland and flood plains over the next five years (USD 18,000,000);

? FAO, for a total of USD 3,717,700 through the following investments:
  - o the SD3C (Joint Programme for the Sahel in Response to the Challenges of COVID-19, Conflict and Climate Change) project (USD 2,921,700);
  - o the FAO-International Organisation for Migration (IOM) project "Management of conflicts and strengthening of agropastoral resilience at the Mauritano-Malian border" (USD 716,000);

- the FAO Technical Cooperation Programme (TCP) project ?Support Project for Vulnerable Women through the Integrated Valorisation of Non-Timber Forest Products coupled with Agroforestry activities in the regions of Segou, Sikasso and Kayes? (USD 80,000); and

? CIRAD, for a total of USD 427,000 trough the FAIR (Fostering an Agroecological Intensification to improve farmers? Resilience in Sahel) Sahel project.

218. These projects are further described in the previous section. The following outlines the additional cost reasoning for each of the four components.

Component 1

219. Without LDCF & TF financing: the baseline consists mostly in support brought by MAEP and FAO to foster the coordination and build the capacity of stakeholders at the regional level, including for conflict resolution. In addition, FAIR Sahel investments to build the knowledge base and capacity of national stakeholders on best agroecological practices will be capitalised upon. However, in the absence of specific investments to mainstream i) climate change adaptation; and ii) sustainable landscape management into existing land-use management frameworks at the decentralized level, these matters will continue to be either absent or nor systematically taken into account when taking land-use decisions.

220. Additionality (LDCF) & incremental cost reasoning (TF): GEF support will be sought under Component 1 to further strengthen the coordination and capacity of stakeholders at the national, regional and local levels to advance SLM in the northern and southern landscapes of the Kayes region. The LDCF support will focus on capacity development at the national and regional levels in order to incorporate conflict-sensitive climate change adaptation strategies in SLAs, tackling existing NR conflicts by multiple users based on a better understanding of the linkages between climate change, conflict, migration and other stressors faced by agro-sylvo-pastoral communities and which are note being addressed holistically. It will help support the introduction of innovations in governance structures (COFOs and territorial market platforms), primarily ensuring the full engagement of relevant stakeholders in landscape management planning and monitoring, as this is believed to be fundamental for successful climate change adaptation action.

Component 2

221. Without LDCF & TF financing: the baseline consists mostly of ongoing efforts to disseminate improved and resilient agricultural techniques, build and rehabilitate dirt roads to facilitate market access for local producers and strengthen irrigation infrastructure across the Kayes region. These elements form a useful basis to build upon; however, the scale and coordination of these initiatives is generally not adequate to tackle both climate-related threats to agricultural livelihoods and the threats from degradation processes in the fragile ecosystems of the Kayes region, which are also habitats for globally-signifiant biodiversity.

222. Additionality (LDCF) & incremental cost reasoning (TF): GEF TF and LDCF support will be sought under Component 2 to develop and implement integrated landscape management and development plans (SCATs, PDSECs, pastoral conventions) in an integrated and participatory manner, disseminate agroecology practices, i.e. production practices and approaches that help adapt and build resilience of agro-sylvo-pastoral food systems to

withstand climate change stresses and sustainably intensify agricultural production (LDCF), restore degraded landscapes and implement biological diversity conservation measures (TF). In particular, LDCF investment will support the demonstration and co-creation of climate change adaptation production practices in agro-sylvo-pastoral food systems in order to help build the resilience of the communities, livelihoods and the landscapes as a whole. Furthermore, it proposes concrete measures to tackle conflicts induced at least in part by climate change.

Component 3

223. Without LDCF & TF financing: the baseline consists mostly in ongoing efforts to provide equipment and training for the transformation, storage and transportation of commodities. However, these efforts are often not directed towards the development of territorial markets, which are a demonstrated vector to stimulate local, diversified, sustainable and climate-resilient agricultural production. Without project support, the full resilience potential brought by climate-smart agriculture will not be realised as producers will lack opportunities to sell their production in favourable economic conditions (thus extracting less value-added). In addition, some of the agroecological practices to be disseminated under Component 2 will require small investments by smallholders, who usually do not have access to financing service. Finally, without TF and LDCF investment, rural livelihoods will remain poorly diversified and therefore more vulnerable to the impacts of climat shocks on agricultural production.

224. Additionality (LDCF) & incremental cost reasoning (TF): GEF and LDCF support will be sought under Component 3 to, *inter alia*, develop and disseminate best practices to support the agroecological transition of ASP communities with a focus on women empowerment, implement innovative financial mechanisms (LDCF), foster certification processes to facilitate market access to diversified agricultural production (TF) and implement the JFFLS approach to secure more resilient livelihoods for rural youths (LDCF). LDCF support in particular will help build capacity of local private actors to develop climate-resilient livelihood options and contribute to foster the role of territorial markets as key outlets for climate-smart, agroecological production in the Kayes region.

Component 4

225. Without LDCF & TF financing: the baseline consists mostly in ongoing efforts to foster M&E practices and build the knowledge base on agroecology practices and biodiversity conservation in the Kayes region.

226. Additionality (LDCF) & incremental cost reasoning (TF): GEF and LDCF support will be sought under Component 4 to monitor the project?s results, effectively coordinate with co-financing partners and disseminate lessons learned from the project?s implementation.

6) Global environmental benefits (GEFTF) and adaptation benefits (LDCF/SCCF);

227. Climate change in the arid Sahelian and Sudanese landscapes of southwest Mali will reduce *inter alia* water availability, agricultural and pastoral productivity and ecosystem functioning unless adaptation interventions are implemented. The proposed project will increase the climate resilience of rural communities in the northern (circles of Kayes,

Y?liman?, Di?ma and Nioro du Sahel) and southern (circles of Bafoulab? and Kita) landscapes of the Kayes region. By improving the management of semi-arid landscapes and natural resources (including water), and protecting them from desertification, the climate resilience of nature-based livelihoods in the target circles will be enhanced.

228. The specific adaptation benefits of the proposed project will include: i) increasing the resilience of agricultural production against climate-induced hazards; ii) reducing soil erosion; iii) improving water supply by promoting groundwater recharge and water conservation; iv) improving food security through the introduction of sustainable, intensification farming techniques; and v) diversifying livelihoods and generating new economic opportunities by strengthening activities around selected baskets of goods.

229. Further to the above-mentioned tangible adaptation benefits, the project will build local, regional and national institutional capacity to plan, implement and monitor sustainable landscape management incorporating key CCA, land conservation and biodiversity priorities. Such institutional capacity building will improve the success of climate change adaptation, land degradation and biodiversity-related responses and stimulate additional investments in SLM in Kayes and more generally in Sahelian regions. In terms of local communities, training, demonstrations and the dissemination of climate-smart practices in these areas will promote the autonomous uptake and replication of interventions.

230. The project is also expected to generate global environmental benefits (GEB) by reducing deforestation and conserving biological diversity[170]. The proposed project will prioritise interventions in communes situated in the buffer zones of protected areas, such as the Kouroufing and Wongo National Parks, and the Bafing chimpanzee?s sanctuary. In particular, mainstreaming biodiversity conservation into the SLM plans to be developed and updated under Component 1 will strengthen the role of beneficiary areas as buffer zones around protected areas. The Bafing chimpanzee sanctuary and the Boucle du Baoul? qualify as Key Biodiversity Areas[171] and will benefit from strengthened buffer protection from the proposed project. Globally significant biodiversity to be protected will thus include *Loxodonta africana*, *Pan troglodytes*, *Panthera leo* and *Taurotragus derbianus (all endangered or vulnerable)* in the Bafing sanctuary, and *Panthera leo* and *Acinonyx jubatus* in the Boucle du Baoul?.

231. In addition, the proposed project will protect environmental services ? such as clean water and woodfuel provision ? as a basis for continued resilience. The proposed project will sustain food systems and ecosystem services for 200,000 people (50% of women; GEF-7 Core Indicator 11 and LDCF Core Indicator 1). GEBs will be generated through the implementation of sustainable landscape management practices on 160,000 ha of mixed land, including forests, pastures and cropland, and which benefit at least 25,000 ha of biodiversity-rich areas (GEF-7 Core Indicator 4, of which 135,00 are also reported under LDCF Core Indicator 2). Carbon benefits (Core Indicator 6) have been estimated using the EXACT tool, and details are found in separate document for the direct and indirect benefits. As a result, specific GEBs expected from the project interventions include:

? the mainstreaming of biodiversity concerns into landscape management plans, contributing to limit the fragmentation of natural habitats;

? the promotion of genetically-diverse cultivars, including local and traditional species;

? the restoration of grasslands through enrichment planting of shrubs and trees and seeding of local grasses;

? the preservation of naturally-occurring trees and shrubs in grasslands and forests through the promotion of fodder culture;

? a limitation of human pressure on forests for fuelwood harvesting; and

? reduced degradation of aquatic habitat through limited siltation from soil erosion.

The following table illustrates to which Aichi targets the proposed project contributes primarily.

Aichi target	How the proposed project will contribute
1: By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.	The proposed project will work with the population in the two landscapes, so that local people are able and committed to conserving forest biodiversity.
2: By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.	The proposed project includes consultation and planning at the landscape level, to mainstream biodiversity concerns into rural development in northern and southern landscapes of the Kayes region. Interventions to promote integration of biodiversity and land management issues will also be undertaken across the target landscapes.
5: By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.	All project interventions will contribute in the short- to medium-term towards halting and reversing the loss and degradation of grasslands and forest ecosystems in the Kayes region.
7: By 2020, areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.	This is a major focus of the project. As a result of Components 1 and 2, 30,000 ha of agricultural, grass and forest land will benefit from improved management practices that will promote biodiversity.
13: By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.	The proposed project will promote the use of genetically-diverse cultivars under Component 2.
15: By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.	The proposed project will contribute to the restoration and sustainable management of cropland, grassland and forests, for estimated direct carbon benefits of 2,815,829 metric tCO_2eq. (Please, see separate document for assumptions filling out EXACT)

7) Innovativeness, sustainability, potential for scaling up and capacity development ?

232. The agroecological transition that will eventually contribute to sustainable and productive landscapes will be facilitated by priority actions in a number of agroecological dimensions for which the selected production systems (Groups 1 & 2) underperform. These actions will be both innovative and traditional, including: 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) mechanised za? with the Delfino plow; vi) the use of leguminous plants; and vii) crop rotation.

233. In terms of interventions, the project will thus innovate through:

? the dissemination of agroecological approaches and sustainable agricultural intensification technologies tackling degradation and leaving larger area for biodiversity conservation;

? multistakeholder platforms to support the coordinated and integrated development of territorial markets;

? the implementation of the Junior Farmer Field and Life School approach to restore the attractivity of the agricultural sector for youths;

? the organisation of national and international knowledge exchanges for rural youths;

? the implementation of Yeredeme groups, inspired by Indian experiments, to support gender inclusion through facilitated access to microfinance (expansion of the Benso Jamanu network); and

? the development of a participatory certification for agricultural commodities.

234. In terms of tools and methodologies, innovative approaches have already been used during the PPG phase. They include the use of the TAPE tool to characterise the status of the agroecological transition and refine the project?s intervention strategy and the Mapping of Territorial Markets tool to identify entry points for activities to support the role of territorial markets in the agroecological transition with a gender focus. The TAPE tool will be used to monitor indicators that are seldom included in the results-based frameworks of projects, including the CAET and Household Dietary Diversity. Another innovative tool, B-INTACT will be used both as a decision-support tool to orient land-use planning options towards a better mainstreaming of biodiversity conservation (using telling economic indicators) and as a monitoring tool.

235. Sustainability of the project outcomes will be achieved via:

? capacity building of a wide range of actors and institutions, including national, regional and local authorities, CECs, youth (through the JFFLS approach) and farmers (through APFSs);

? the promotion of the mainstreaming of multi-stakeholder platforms into existing legal and regulatory frameworks (Activity 1.2.5);

? the participatory development and updating of SCATs that will provide for the long-term, sustainable management of natural resources;

? the dissemination of climate-smart agricultural techniques, that will help farmers cope with the adverse impacts of climate change on agricultural productivity; and

? the development and demonstration of the feasibility of profitable business plans for local agri-enterprises.

236. Sustainability of the project?s interventions to enhance the governance of landscapes and natural resources is rooted in the legislative framework that underpins the decentralization process in Mali. As such, the project will avoid setting up new bodies or committees that may

not have significant chances to continue after the project termination; on the contrary, the project will support local bodies that have been / need to be set up to comply with Malian law. This is notably the case of COFOs, which are at the basis of the local governance of natural resources (as required by Decree N?09-011 of 19 January 2009) but often lack the capacity to exercise their mandate, and CROCSADs (to be supported in the newly-created regions of Nioro and Kita). Similarly, the proposed project will not establish management plans that would duplicate plans required by Malian law; instead, the SCATs, PDSECs and pastoral conventions that will be supported by the project are the basic governance instruments in terms of landscape & natural resource management planned for by the Malian decentralization framework.

237. In addition, whenever possible, implementation of the project activities will rely on permanent human resources (i.e. NGOs, extension offices etc.) rather than on independent consultants. This will notably be the case for Outputs 2.3 (extension officers and NGO members will form the bulk of APFS trainers), 3.2 (with CAMIDE) and 3.3 (with AMSD).

238. The project will set conditions for large-scale change through:

? decentralised and integrated governance (multi-stakeholder platforms, strengthened capacity of COFOs and management plans) that will allow large- scale environmental and adaptation benefits;

? the promotion of the mainstreaming of multi-stakeholder platforms into existing legal and regulatory frameworks (Activity 1.2.5);

? the training of national and regional governmental staff on climate change vulnerability and environmental impact assessments at the landscape level as well as monitoring of climate change resilience, land and biodiversity use and conservation;

? strengthened capacity of local actors to generate multiple benefits through enhanced practices and more efficient VCs that will be replicated locally and regionally;

? a better organisation of stakeholders around territorial markets; and

? the systematic dissemination of lessons learned and relevant knowledge to the widest possible audience (through the organisation of cofinancing partners meetings, translation of mid-term and terminal evaluation, widespread sharing of annual briefs on the project etc.)

8) Summary of changes in alignment with the project design with the original PIF

239. While the overall project strategy has not changed from the PIF, consultations and studies undertaken during the PPG phase have allowed to adjust some elements from the PIF:

? Output 1.2: during the PPG phase, the innovative Mapping of Territorial Market tool was used to gain a thorough understanding of the baseline situation with respects to territorial markets in the region. These markets are seen as key vectors for the agroecological transition. Following consultations and validation meetings, it was decided to adopt a territorial approach throughout the project. As a result, Output 1.2 was redesigned to focus on a selection of territorial markets, as opposed to creating one regional platform. In addition, the territorial approach was also mainstreamed throughout Component 3.

? Output 2.1: after PPG consultations, the list of relevant of plans to be reviewed and revised as required to better mainstream climate adaptation, land and natural resources management and biodiversity conservation has been revised to incorporate SCATs, PDSECs and pastoral conventions.

? Outcome 3: while the idea to work with diaspora NGOs to redirect remittances in the Kayes region had been formulated the PIF, this suggestion was eventually not retained during the PPG phase, as this would have implied a set of complex consultations and overseas baseline studies. However, the proposed project will still work on access to finance, and place a focus on mobilising remittances ? especially those received and managed by women ? through AVECs.

? Output 3.4: during the PPG phase, several partners were consulted on the topic of Agricultural Youth Incubators (incl. the Senegal River Valley Rural Development Agency, Caritas Switzerland, the NGO Stop Sahel, Agropastoral Schools, CAMIDE and umbrella organisations of producers). From these consultations, it emerged that the construction of agro-business centers by the ADRS has shown limitations because of inefficient collective management approaches. In the opinion of young beneficiaries themselves, their integration were generally a failure for various reasons: lack of capacity building on the identified sectors, lack of follow-up and accountability. As a result, it was decided to refocus Output 3.4 on the JFFLS approach, with similar objectives (economic integration rural youths, job creation, capacity building).

? Output 4.2: following consultations with local and regional partners active in the promotion of the agroecological transition, as well as in accordance with STAP and GEF Secretariat comments on the PIF, it was decided that the knowledge management strategy of the project should be more ambitious than originally designed. Output 4.2 has thus been redesigned to include knowledge-sharing activities (exchange visits, seminars, participation in FAO?s Hand-in-Hand initiative) with a broader range of partners, both nationally and at regional scale.

240. Accordingly, some adjustments have been made to the GEF TF and LDCF Core Indicators, as well as project results framework, to adapt them to the current national circumstances and updated intervention strategy, as summarised in the tables below.

Table 13. Changes from the PIF in terms of GEF TF Core Indicators.

Expected at PIF	**Expected at CEO Endorsement**	**Justification**
GEF TF Core Indicator 3: Area of land restored		
Not included	10,000 ha	The updated intervention strategy includes land restoration through mechanised zai, for a total of 10,000 ha. As this goes ?beyond? placing these areas under improved practices, a target for Core Indicator 3 was thus added.
GEF TF Core Indicator 4: Area of landscapes under improved practices (hectares; excluding protected areas)		
30,500 ha	160,000 ha	This target was revised upward to account for the significant area that will benefit from the mainstreaming of climate adaptation, sustainable land management and biodiversity conservation into management plans (SCATs, PDSECs, pastoral conventions). This target includes 25,000 ha under improved management to benefit biodiversity (against 5,000 ha planned at PIF stage), as some of the target communes were selected specifically because these are in the vicinity of biodiversity-rich areas, and that sustainable landscape management plans to be adopted in these communes will thus benefit biodiversity.
GEF TF Core Indicator 11: Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment		

10,000 (50% women)	200,120 (50% women)	The target has been substantially revised upwards, based on: i) accurate costing of APFS interventions; ii) the fact that many people who do not attend APFS directly will benefit from exposure to agroecological practices through open field days in APFS; and iii) a revised estimate of beneficiaries from livelihood support activities under Component 3. The updated target generally reflects the ambition and scope of the project.

Table 14. Changes from the PIF in terms of LDCF Core Indicators.

Expected at PIF	**Expected at CEO Endorsement**	**Justification**
GEF LDCF Core Indicator 1: Total number of direct beneficiaries		
15,000 (50% women)	200,000 (50% women)	See justification for GEF TF Core Indicator 11 above.
GEF LDCF Core Indicator 2: Area of land managed for climate resilience		
Expected at PIF: 10,000 ha	135,000 ha	This target corresponds to the target for GEF TF Core Indicator 4.1 of 135,000 ha.
GEF LDCF Core Indicator 3: Total number of policies/plans that will mainstream climate resilience		
Expected at PIF: Not included	39	This indicator has been added, as it captures expected results from Component 2, with 22 SCATs and 17 PDSECs revised (for a total of 39 plans) to better mainstream climate resilience.
GEF LDCF Core Indicator 4: Total number of policies/plans that will mainstream climate resilience		
Expected at PIF: Not included	15,200 (50% women)	This target has been added, as it rightly captures training to be provided through Component 1 (Outputs 1.3 & 1.4 for a total of 200 beneficiaries) and Component 2 (15,000 trainees in APFSs).

Table 15. Changes from the PIF in terms of project results-based framework.

PIF Results Framework	**Project Results Framework**	**Justification**
Objective-level indicators		

(i) Area of production land under improved and climate-resilient management, Target: 30,500 ha (ii) Number of direct beneficiaries disaggregated by gender, Target : 33,000 (50% women) (iii) Number of vulnerable agro-sylvo-pastoralists (men, women and youth) with strengthened livelihoods and diversified sources of income, Target: TBC	(i) Characterisation of Agroecological Transition (CAET) score, Target: Average CAET score of a least 70% over the target circles (ii) Area of production land under improved and climate-resilient management, Target: 160,000 ha (iii) Number of direct beneficiaries disaggregated by gender, Target: 200,120 (50% women) (iv) Household Dietary Diversity Score (DDS) disaggregated by commune and type of household, Target: At least 20% increase in average household DDS score in the target circles	Indicator (i) was selected based on the TAPE assessment conducted during the PPG phase. The CAET is a synthetic indicator that fully captures the multi-dimensional characteristic of the agroecological transition that the project wishes to promote. The targets for indicators (ii) and (iii) were revised (see above). Indicator (iv) was added to complement the CAET as a synthetic results-based indicator.
Outcome 1		

Number of innovative mechanisms for multi-stakeholder planning and investment into climate change adaptation and sustainable management of land and biodiversity at the landscape level Target: at least one regional multistakeholder platform and 20 COFOs	(i) Number of multi-stakeholder committees supported to foster planning and investment into climate change adaptation and sustainable management of land and biodiversity at the landscape level, with participation to meetings disaggregated per gender Target: At least 22 communal COFOs supported, with at least 40 % of women in COFO meetings supported by the project (ii) Number of local multi-stakeholder platforms established to support the role of territorial markets as key drivers for the agroecological transition, with disaggregated participation per gender Target: Five multistakeholder platforms established around territorial markets with 50% of women?s participation in each platform	The original indicator has been split into two indicators for improved clarity. Targets have been revised as per updated intervention strategy (22 COFOs supported instead of 20; five platforms centred around five territorial markets instead of one regional platform)
Outcome 2		

(i) Number of sustainable landscape management plans integrate climate change adaptation and vulnerability considerations, and land and biodiversity use and conservation Target: at least 20 plans developed, implemented and monitored by COFOs (ii) Number of hectares of land under improved management Target: 30,500 ha of production land, of which10,000 ha under climate-resilient management, 5,000 ha directly benefiting biodiversity (avoiding encroachment into KBAs) and 15,500ha under SLM (iii) Number of agro-sylvo-pastoral producers trained on innovative climate change adaptation and SLM practices Target: 12,000 (50% women)	(i) Number of sustainable landscape management plans revised to better integrate climate change adaptation and vulnerability considerations, as well as land and biodiversity use and conservation Target: At least 22 SCATs and 17 PDSECs reviewed and revised as (required), implemented and monitored by COFOs. At least 22 intercommunal and six inter-circle pastoral conventions reviewed, revised as required, and supported for their implementation. (ii) Number of agro-sylvo-pastoral producers trained on innovative climate change adaptation and SLM practices Target: 15,000 (50% women) (iii) Mean Species Abundance and economic impact of biodiversity conservation measures assessed through the B-INTACT tool in the buffer zones (at least 25,000 ha) of biodiversity-rich areas Target: To be determined during project implementation	The target for indicator (i) has been adjusted to reflect the selection of communes based on need surveys and consultations. Original indicator (ii) has been replaced by original indicator (iii), with target adjusted to reflect the detailed APFS strategy. Indicator (iii) has been introduced to capture specific results in terms of biodiversity conservation benefits, through the use of an innovative monitoring tool.

Outcome 3		
(i) Number of value chains strengthened through the implementation of commercial plans Target: At least three value chains (ii) Number of incubators established to catalyze innovation and mobilize local private actors and MSMEs to contribute to climate adaptation and land and biodiversity conservation Target: 2 incubators	(i) Number of products or services with strong potential in terms of women and youth empowerment, support to the agroecological transition and increased livelihood resilience, strengthened through the implementation of commercial plans Target: At least five products or services (ii) Number of additional projects benefitting from improved access to micro-finance Target: At least 200 projects benefitting from access to micro-finance (iii) Number of jobs created for youths supported through the Junior Farmer Field and Life School approach to catalyse innovation and restore the attractivity of the agricultural sector Target: At least 120 jobs created for youths enrolled and actively following the JFFLS curricula	The wording of indicator (i) has been revised to better reflect the ?basket of products? approach finally adopted, along with a perspective focused on the territorial dimension of rural development ? as opposed to commodity-based approach. The target has been revised to reflect the five ?sub-sectors? envisaged, namely horticulture, compost production, small livestock/poultry, dairy and neem seed oil. Original indicator (ii) has been replaced by indicator (iii), as the incubators approach was not confirmed during the PPG phase (see above). Indicator (iii) is also more outcome-oriented, as it directly targets job creation. Indicator (ii) has been added to reflect the project?s investments in improving access to finance.
Outcome 4		

An M&E plan and a communication strategy developed and implemented Target: 1 M&E Plan, 1 communication strategy	(i) Existence and implementation of an M&E plan and a communication strategy Target: Existence and implementation of an M&E plan and a communication strategy (ii) Existence of a functional partnership in support of the agroecological transition Target: Animation of a partnership in support of the agroecological transition, with at least 12 meetings with co-financing partners (on a biannual basis), workshops, collaboration with academia and field visits	The original indicator has been slightly reworded to include implementation. Indicator (ii) has been added to capture the greater ambition of the project under Component 4.

[1] In terms of GDP per capita. Source: World Bank, 2018.

[2] Source: World Bank, 2018.

[3] Data averaged over the 1901-2016 period. Source: World Bank Climate Change Knowledge Portal.

[4] Source: Sean D. Birkel, Paul A. Mayewski. Analysis of Historical and Projected Future Climate of Mali, West African Sahel. 2015

[5] Average annual rainfall has decreased by 20% between 1970 and 2000.

[6] Defined as when the daily maximum temperature exceeds the 95th percentile of all values (38.5?C).

[7] Defined as number of days with daily precipitation below 5 mm.

[8] Defined as when daily values are above the 95th percentile (79 mm).

[9] Source: N?Diaye I., Aune J.B., Synnev?g G., Yossi H., Hamadoun A. (Eds.). 2020. Adaptation de l'Agriculture et de l'?levage au Changement Climatique au Mali: R?sultats et le?ons apprises au Sahel. Bamako, Mali: Institut d'Economie Rurale.

[10] For an extended panorama of territorial development in the Kayes region, see Siby M. 2020. Les processus de d?veloppement territorial dans la r?gion de Kayes au Mali :approche territoriale du d?veloppement durable. Universit? de Lorraine. Available here.
[11] Despite the administrative creation of two new regions, namely Nioro and Kita, since the approval of the PIF, the initial project title from the PIF was retained for the sake of consistency. Throughout the project document, the ?Kayes region? therefore refers jointly to the Kayes, Nioro and Kita administrative regions, unless specified otherwise.
[12] Source : Mali M?t?o, reproduced in the Annuaire statistique 2017 de la region de Kayes
[13] European Investment Bank, Agence Fran?aise de D?veloppement, German Development Bank. Joint ex post evaluation of the Manantali dam project. 2009.
[14] Source : Institut National de la Statistique du Mali. 2016. Consommation, pauvret?, bien-?tre des m?nages.
[15] Including the forests of Djoubeba, Fangala, Fal?m?, Dinguira, Dag Dag, Paparah, Bangassi, Kayaba, Gangara, Gall?, Kassaro, Kobiri, Nafadji, Sebekoro, Siguifiry, Tinienko, Nioro, Lorack-Bane, Bagougo Est and Dinguiraye Ouest. Source : Ministry of Environment. 2008. Rapport annuel d?activit?s 2007.
[16] International Union for the Conservation of Nature
[17] Note: since the time of PIF design, the former Ministry of Livestock and Fisheries was incorporated into the MALF.
[18] Coulibaly C. 2010. La d?centralisation au Mali : le ? transfert de comp?tences ? en difficult?.
[19] M. Djir?. 2004. Mythes et r?alit?s de la gouvernance locale. L?exp?rience de la commune rurale de Sanakoroba, Mali. IIED
[20] As per Decree N?08-095 of 21 February 2008.
[21] Sources: Kayes ADR annual reports 2019 & 2020.
[22] Decree N?09-011 of 19 January 2009
[23] Law n?01-004 from 27 February 2001
[24] The revised five-year pastoral development plan was drafted with the support of the FAO-GEF project ?Strengthening resilience to climate change through integrated agricultural and pastoral management in the Sahelian zone in the framework of Mali's sustainable land management approach?
[25] Article 15
[26] Source: Land Resources Inventory Project Publication N?0016, July 1984, in Statistical Yearbook 2016.
[27] Multi-model projections based on Coupled Model Intercomparison Project, Phase 5 (CMIP5). Data retrieved from the World Bank Climate Change Knowledge Portal.
[28] Ibid.

[29] Institut d?E?conomie Rurale. 2020. Adaptation de l?Agriculture et de l?E?levage au Changement Climatique au Mali - Re?sultats et lec?ons apprises au Sahel.
[30] GIZ. 2020. Profil de risque climatique : Mali
[31] USAID. 2018. Climate Risk Profile : Mali.
[32] USAID. 2019. Climate Risk in Food for Peace Geographies: Kenya

[33] An exhaustive literature review on the historical impacts of droughts in Mali is provided in Chapter 1 of Tchoupe? Makougoum CF. Changement climatique au Mali : impact de la secheresse sur l?agriculture et strate?gies d?adaptation. Economies et finances. Universite? Clermont Auvergne. Available here.

[34] Butt T, McCarl B, Angerer J, Dyke P, Stuth J. 2005. The economic and food security implications of climate change in Mali. Climatic Change 68: 355-378.
[35] Two thirds (66%) of the population believe that droughts have worsened in recent years. Source: Bougoudogo B, Coulibaly M. 2018. Les Maliens de?noncent les effets ne?fastes des changements climatiques. Afrobarom?tre n?222.
[36] See for example a study in Y?liman? circle: Sissoko P, Gry S, Sidib? M et al. 2020. Farmers? Perceptions of the Impacts of Climate Change on Resources and Production Systems: Case of the cercle of Ye?limane? in Mali
[37] Source: Annuaire Statistique de la R?gion de Kayes, 2017.
[38] International Union for the Conservation of Nature
[39] Source: Trends.Earth.
[40] Compagnie Malienne pour le D?veloppement des Textiles
[41] Service International d?Appui au D?veloppement. 2011. Les fili?res porteuses en r?gion de Kayes.
[42] Additional information can be found in: United Nations Office for West Africa and the Sahel. 2020. Pastoralism and Security in West Africa and the Sahel. Accessible here.
[43] Source: Trends.Earth
[44] Ibid.
[45] This phenomenon was also noted in the feasibility study of the PAESOL project: ?Although the areas farmed have varied in terms of decrease or increase depending on the district, it can be seen that in the region as a whole, the increase in production has been achieved more through the areas than through the yields. Yields remain very low due to the decline in soil fertility for the most part.?
[46] Source : European Union Delegation in Mali. R?vision du profil environnemental du Mali. 2014
[47] Synnev?g G., Huvio T., Sidib? Y., and Kanout?, A. 1999. Farmers? indicators for decline and loss of local varieties from traditional farming systems. A case study from northern Mali. J. Serwinski and I. Faberov? (eds.). Proceedings of the Technical Meeting on the Methodology of the FAO World Information and Early Warning System on Plant Genetic Resources, held at the Research Institute of Crop Production, Prague, Czech Republic 21-23 June 1999.
[48] Demb?l?, F. 1996. Influence du feu et du p?turage sur la v?g?tation et la biodiversit? dans les jach?res en zone soudanienne-nord. Cas des jeunes jach?res du terroir de Missira (Cercle de Kolokani), Mali. Institut d'Economie Rurale, Bamako, Mali.
[49] Kouressy M., Bazile D., Vaksmann M., Soumare M., Doucour? C.O.T., Sidib? A. 2003. La dynamique des agro?cosyst?mes: un facteur explicatif de l??rosion vari?tale du sorgho. In: Dugu? P, Jouve P, eds. Organisation spatiale et gestion des ressources et des territoires ruraux. Actes du colloque international, Montpellier, 25-27 February 2003.
[50] Government of Mali. 2007. Rapport national sur l'?tat des ressources phytog?n?tiques pour l'alimentation et l'agriculture.
[51] Potential evapotranspiration would increase by 2.4% in 2030, 3.7% in 2050 and 7% in 2080 under RCP 6.0. Source: GIZ. 2020. Profil de risque climatique : Mali
[52] International Federation of Organic Agriculture Movements
[53] A platform such as the Forum on agroecology held in Kayes in March 2020 exemplifies what can be done in this respect; however, this forum was held under the auspices of the AFD-funded TAPSA-Sahel project due to terminate in 2022.
[54] Source: TAPE assessment. Cf. Annex P.

[55] Namely Diafounou Diongaga (Y?liman?), Diagounou Tambacara (Y?liman?), Gory (Y?liman?), Marekafo (Y?liman?), Djougoun (Kita), Guemecouraba (Kita), Koulou Balea (Kita), Kourouninkoto (Kita) and Kor?ra Kor? (Nioro).
[56] Projet d'Appui au D?veloppement des Productions Animales dans la zone de Kayes Sud (Project for the Support of Animal Production in Southern Kayes). This African Development Bank-funded project was implemented between 2007 and 2018.
[57] Four Readiness proposals have been approved by the GCF as of October 2019, namely two to strengthen the Nationally Designated Authorities and two to develop Mali?s country programming and capacity to engage with the GCF.
[58] Jones-Casey K. and Knox A. 2011. Farmer-Herder conflicts in Mali. Focus on Land in Africa Brief
[59] In Mali, there is a system of cousinage between ethnic groups (Sonink?-Malink?, Dogon-Bozon, Senoufou-Minianka, Peulh-Bambara) which consists of accepting anything from a cousin, even in the case of conflict. This cousinhood is also widely used in conflict management.
[60] Zanoletti G. 2019. ?Le djihad de la vache? au Mali : deux (ou trois) choses que je sais de lui.... in Soci?t?s politiques compar?es, 47.
[61] Source: TAPE data.
[62] Source: MTM study.
[63] Ibid.
[64] R?seau des Organisations Paysannes et des Producteurs Agricoles d?Afrique de l?Ouest (ROPPA). 2018. E?tude sur les m?canismes/outils nationaux et r?gionaux de financement du secteur agricole et rural en Afrique de l?Ouest.
[65] Solidaridad Network. 2018. Supporting Female Farmers In West Africa Become Agri-Entrepreneurs.
[66] Source: FAO. 2020. Final evaluation of the project "Strengthening resilience to climate change through integrated agricultural and pastoral management in the Sahelian zone in the framework of Mali's sustainable land management approach". Project Evaluation Series.
[67] Law n?01-004 from 27 February 2001
[68] Dated 2017.
[69] Source: mayors, Councils of circles.
[70] PCAs were developed with the support of the World Bank-funded PDAZAM project ? Projet de D?veloppement Agricole dans les Zones Arides du Mali (Mali Drylands Development Project), 2018-2023.
[71] Administratively, most communes include several villages. The capacity of CECs will be strengthened under Component 4.
[72] Decree N?09-011 of 19 January 2009
[73] Source: Councils of Circles, Prefecture, mayors.
[74] Project for the Support to Devolution and Regionalisation in Mali. This support mostly facilitates the monitoring of development actions in Di?ma circle, with the production of a quarterly report summarising progress against a range of indicators. Source: Di?ma CLOCSAD. 2017, 2018 & 2019. Indicateurs de suivi-?valuation de la d?centralisation.
[75] Cf. for example SCAT of the Gavinan? commune (Nioro).
[76] Source: Regional Directorate of Agriculture
[77] Direction R?gionale de l?Agriculture
[78] Direction R?gionale des Productions et Industries Animales
[79] Direction R?gionale de la P?che
[80] Direction R?gionale des Eaux et For?ts

[81] Source: Kayes Regional Network of Facilitators

[82] Alongside other, more conventional approaches, three innovative tools developed by FAO ? namely TAPE, MTM and B-INTACT ? were used during the PPG phase to establish the baseline situation pertaining to agroecology, territorial markets and biodiversity, respectively.

[83] Ibid.

[84] Source: TAPE analysis, 2021.

[85] Ibid.

[86] Because of logistical issues, the TAPE study could not be conducted in the Kayes circle.

[87] Groupement d?Int?r?t Economique, GIE.

[88] Sources: DRA, donor projects.

[89] Projet d'Appui au D?veloppement des Productions Animales dans la zone de Kayes Sud (Project for the Support of Animal Production in Southern Kayes)

[90] Centre Sah?lien de Prestation, d?Etudes, d?Ecod?veloppement et de D?mocratie Appliqu?e (Sahelian Centre for Contracting, Studies, Ecodevelopment and Applied Democracy)

[91] Welthungerhilfe

[92] Building Resilience and Adaptation to Climate Extremes and Disasters

[93] This is also true for self-consumption.

[94] These conclusions are interpretations based on a relatively small sample size (seven markets); these hypotheses have been discussed and validated during a participatory workshop held in Kayes in December 2020.

[95] Source: FAO. 2020. Final evaluation of the project "Strengthening resilience to climate change through integrated agricultural and pastoral management in the Sahelian zone in the framework of Mali's sustainable land management approach". Project Evaluation Series.

[96] Synnev?g G, Huvio T, Sidib? Y, and Kanout? A. 1999. Farmers? indicators for decline and loss of local varieties from traditional farming systems. A case study from northern Mali. J. Serwinski and I. Faberov? (eds.). Proceedings of the Technical Meeting on the Methodology of the FAO World Information and Early Warning System on Plant Genetic Resources, held at the Research Institute of Crop Production, Prague, Chzech Republic 21-23 June 1999.

[97] See for example: IER. 2020. Adaptation de l?Agriculture et de l??levage au Changement Climatique au Mali - R?sultats et le?ons apprises au Sahel.

[98] International Fund for Agricultural Development

[99] French Development Agency

[100] Centre de coop?ration Internationale en Recherche Agronomique pour le D?veloppement

[101] Joint Sahel programme in response to Covid-19, conflicts and climat change challenges.

[102] Management of conflicts and strengthening of agro-pastoral resilience at the Mauritania-Mali border.

[103] Project to support irrigation in Sahel (Mali)

[104] Agencia Espa?ola de Cooperaci?n Internacional para el Desarrollo

[105] Support Project for Vulnerable Women through the Integrated Valorisation of Non-Timber Forest Products coupled with Agroforestry activities in the regions of S?gou, Sikasso and Kayes (Kita)

[106] Kreditanstalt f?r Wiederaufbau

[107] Although no specific cofinancing agreements have been made at this stage, since the official agreement between KfW and DNA has not yet been signed.

[108] UNCCD. 2017. Global Land Outlook. Annex 1 : Scientific Conceptual Framework for Land Degradation Neutrality.
[109] GEF STAP. August 2019. Guidelines for the application of the ?Scientific Conceptual Framework for Land Degradation Neutrality?
[110] Gonsalves J. et al.. 2005. Participatory Research and Development for Sustainable Agriculture and Natural Resource Management: A Sourcebook. Understanding Participatory Research and Development. International Potato Center- Users? Perspectives With Agricultural Research and Development, Vol. 1. Laguna, Philippines and International Development Research Centre, Ottawa, Canada.
[111] Stringer L. et al. 2007. Implementing the UNCCD: participatory challenges. Natural Resources Forum, 31, 198-211.
[112] De Vente J, Bautista S. and Orr B. 2017. Preface: Optimizing science impact for effective implementation of Sustainable Land Management. Journal of Environmental Management, 195, 1-3.
[113] Kabore? P.D. 2008. Conflicts over Land in the Niger River Delta Region of Mali: Exploring the Usefullness of SAM and CGE models to Study Participatory Natural Resource Management in Agricultural and Pastoral Stystems
[114] Jones-Casey K. and Knox A. 2011. Farmer-Herder conflicts in Mali. Focus on Land in Africa Brief
[115] Sanz M.J. et al. 2017. Sustainable Land Management contribution to successful land-based climate change adaptation and mitigation. A Report of the Science-Policy Interface. UNCCD
[116] Animation territoriale en agr?cologie : enjeux et d?fis. Actes du Forum. 4-6 mars 2002. Accessible here.
[117] Cf. location map (Figure 1).
[118] Sustainable Hub to Engage into Rural Policies with Actors (SHERPA) is a four-year project (2019-2023) with 17 partners funded by the European Union (EU)?s Horizon 2020 programme**.** It aims to gather knowledge that contributes to the formulation of recommendations for future policies relevant to EU rural areas, by creating a science-society-policy interface which provides a hub for knowledge and policy. Under SHERPA, a set of stakeholder engagement tools have been developed and made publicly available to facilitate the establishment and management of such multi-stakeholder platforms. More information can be found here.
[119] Assembl?e Permanente des Chambres d?Agriculture du Mali
[120] Centre R?gional de Recherche Agronomique
[121] In addition to capacity gaps, one of the reasons why assessments are not systematically carried out is that costs are perceived as larger than benefits of doing them. Awareness raising will help alleviate this issue.

[122] See Tchoupe? Makougoum CF. 2018. Changement climatique au Mali : impact de la secheresse sur l?agriculture et strate?gies d?adaptation. Economies et finances. Universite? Clermont Auvergne
[123] Projections derived from MAGICC/SCENGEN of IPCC.
[124] Sissoko P, Gry S, Midib? M et al. 2020 . Farmers? Perceptions of the Impacts of Climate Change on Resources and Production Systems: Case of the cercle of Ye?limane? in Mali
[125] Agronomes et V?t?rinaires Sans Fronti?res (AVSF). 2019. Les champs-e?coles d?AVSF au Nord Togo : une de?marche d?accompagnement pour la co-construction d?innovations paysannes et le conseil agricole**.**

[126] Waddington H., White H. 2014. Farmer Field Schools: From Agricultural Extension to Adult Extension, 3ie Systematic Review Summary 1. London: International Initiative for Impact Evaluation.

[127] Phillips D., Waddington H., White H. 2014. Better Targeting of Farmers as a Channel for Poverty Reduction: A Systematic Review of Farmer Field Schools Targeting. in *Development Studies Research* 1 (1): 113?136

[128] Bakker T., Blundo Canto G., Dugue? P., de Tourdonnet S. 2020. To what extent is the diversity of farmer field Schools reflected in their assessment? A literature review. In *The Journal of Agricultural Education and Extension*

[129] Sources: PRAPS. 2017. Acc?s et gestion durable des espaces pastoraux & PRAPS. 2017. Accords sociaux, conventions locales et transfrontali?res en faveur de la mobilit? pastorale.

[130] Jones-Casey K. and Knox A. 2011. Farmer-Herder conflicts in Mali. Focus on Land in Africa Brief

[131] Additional information can be found here.

[132] FAO. 2020. E?valuation finale du projet ? Re?duire la vulne?rabilite? des moyens d?existence agricoles a? travers l?approche ?Caisses de re?silience? au Sahel ?. Se?rie e?valuation de projet. Available here.

[133] As per a recommendation from the project evaluation cited above.

[134] "Theoretically, the concept of Clubs DIMITRA is commendable, as it has enabled some communities to solve community problems by facilitating the inclusion of the views of all social categories and strata, including women, in a context where they cannot express themselves in front of men. In other communities, where a more or less functional social organisation already existed, the evaluation found that the added value of these clubs was less perceptible. Therefore, it is desirable that in such situations, the process be given special attention in order not only to avoid duplication within the same communities, but above all to ensure that the clubs serve to energise existing social organisations. The analysis of the functioning of these DIMITRA clubs shows that it is preferable to make them a tool or an approach to inclusive participatory management rather than new structures to be set up. For the purposes of sustainability, it would be better for already organised communities to simply promote the "DIMITRA approach" rather than to set up new clubs with facilitators paid by the project.?

[135] As above.

[136] Sanz M.J. et al. 2017. Sustainable Land Management contribution to successful land-based climate change adaptation and mitigation. A Report of the Science-Policy Interface. UNCCD, cf. in particular Chapter 3.

[137] The maintenance of the tillers is now financing itself through the loan fees; some partner organisations that borrow the tillers from DNA even receive additional demand from communities to use the equipment, thereby leveraging additional benefits in terms of upscaling.

[138] An initial coordination exercise will first be conducted with CAMIDE and AMSD, to ensure that all agroecology practices that will be promoted through the project are consistent.

[139] Two in Kayes (one for producers and one for officers), two in Kita (one for producers and one for officers), one in Di?ma and one in Bafoulab?.

[140] Service Local des Productions et des Industries Animales

[141] For a description of this "traque ? l?innovation" approach, see Salembier C., Elverdin J, Meynard JM. 2016. Tracking on-farm innovations to unearth alternatives to the dominant soybean-based system in the Argentinean Pampa. Agronomy for Sustainable Development. 36.

[142] ?Approaches to foster more efficient and integrated agricultural value chains that are responsive to the needs of local territories and their populations, creating opportunities for

rural and urban people upstream and downstream and enabling smallholders to meet standards and certification regulations, have much potential.? IFAD. 2015. Territorial approaches, rural-urban linkages and inclusive rural transformation.

[143] Zaremba H, Elias M, Rietveld A, Bergamini N. 2021. Toward a Feminist Agroecology. *in* Sustainability

[144] Ibid

[145] Sanz M.J. et al. 2017. Sustainable Land Management contribution to successful land-based climate change adaptation and mitigation. A Report of the Science-Policy Interface. UNCCD

[146] FAO Technical Cooperation Programme 3701

[147] Nurzannah SR, Girsang SR, Girsang MA, Effendi R. 2020. Impact of climate change to fall armyworm attack on maize in Karo District, North Sumatera. IOP Conference Series: Earth and Environmental Science,

[148] Hybrid breed developed by the Institut d?Economie Rurale

[149] See Tiendre?be?ogo S, Ouedraogo A, Kabore R, Zougouri S et al. 2020. Enhancing Women?s rights and Lives through Gender-Equitable Restoration in Burkina Faso; Tropenbos International: Wageningen.

[150] Beuchelt TD, Badstue L. 2013. Gender, nutrition- and climate-smart food production: Opportunities and trade-offs. *In* Food Security, 5, 709?721

[151] Past experiences with APFSs in West Africa have shown that different trainings were needed depending on who was trained (producers vs. producer organisations). In addition, training curricula need to be adapted to size of producers / producer organisations. Several organisations have integrated marketing aspects into the APFS, including ADRA (Denmark Adventist Development and Relief Agency) with the Farmer Marketing Schools approach and CARE (Cooperative for Assistance and Relief Everywhere) with the Farmer Field and Business Schools approach, which specifically targets women. The proposed project will build on these lessons learned to propose adequate training curricula for targeted audiences.

[152] This project was entitled ?R?duire la vuln?rabilit? des moyens d?existence agricoles ? travers l?approche "Caisses de r?silience" au Sahel? (Reducing the vulnerability of agricultural livelihoods though the ?Caisses de R?silience? approach in Sahel?), funded by the Belgian cooperation and executed by FAO (2016-2019). More information can be found here.

[153] FAO. 2020. ?valuation finale du projet ?R?duire la vuln?rabilit? des moyens d?existence agricoles ? travers l?approche "Caisses de r?silience" au Sahel?. S?rie ?valuation de projet. Available here.

[154] As of 2020, the Benso Jamanu micro-finance network operates in 120 villages across the region and caters to 17,000 rural people.

[155] Yeredeme means ?mutual aid? in Bambara. More information can be found here.

[156] Two series of 18 communes (three communes per circle) to be supported for two years, so a total of 36 communes.

[157] Note: this is also motivated by lessons learned from the Covid-19 pandemic, which has emphasised the importance of local resilience when global trade and exchanges are jeopardised.

[158] More information can be found in FAO & Institut National de Recherche pour l'Agriculture, l'Alimentation et l'Environnement. 2020. Syst?mes alimentaires durables: Un manuel pour s?y retrouver. Rome. Available here.

[159] AMSD is also a member of the International Federation of Organic Agriculture Movements (IOAFM).

[160] Not all APFS will mature into individuals/groups for which it will be possible/interesting to obtain a certification. Only those APFS groups/participants that are interested and suitable to such certification would train on those topics, as a follow-up cycle of training for fewer selected groups

[161] The emigration rate of the Kayes region increased from 2,9 in 1998 to 5,4% in 2011. It is the Malian region where the internal emigration rate increased the most over the period. Source: Arouna Sougane. 2015. L'Emigration au Mali: Impacts sur les M?nages d'Origine et Insertion des Migrants de Retour. PhD thesis.

[162] Fiedler Y. 2020. Empowering young agri-entrepreneurs to invest in agriculture and food systems ? Policy recommendations based on lessons learned from eleven African countries. Rome. Available here.

[163] Namely C?te d?Ivoire, Guinea Conakry, Malawi, Mauritania, Mozambique, Namibia, Senegal, South Africa, Tunisia and Uganda.

[164] Programme Indicatif de Coop?ration

[165] Strengths, Weaknesses, Opportunities, Threats

[166] See Bakker T, Dugu? P, de Tourdonnet, S. 2021. Correction to: Assessing the effects of Farmer Field Schools on farmers? trajectories of change in practices. Agronomy for Sustainable Development, 41, 28

[167] Accessible here.

[168] One of the most recent examples is the ?Forum sur l?animation territorial en agro?cologie? held in Kayes in March 2020, under the auspices of the TAPSA-Sahel project.

[169] The sampling strategy for this terminal assessment will need to be relevant with regards to the original sampling implemented for the baseline TAPE assessment.

[170] In particular, are located in and around the Manantali watershed, and their protection will benefit from project interventions in their buffer zones.

[171] Source : http://www.keybiodiversityareas.org/site/mapsearch

1b. Project Map and Coordinates

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

1.b Project Map and Geo-Coordinates.

1. Target communes are mapped on Figure 3 .

Table 15. Coordinates of target circles capitals.

Town	Coordinates	
	Longitude	Latitude
Kayes	-11, 436059	14,443880
Yeliman?	-10,572060	15,119279
Nioro	-9,592150	15,227150
Di?ma	-9,188129	14,543499
Bafoulab?	-10,834459	13,814500
Kita	-9,494510	13,037369

1c. Child Project?

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

2. Stakeholders

Select the stakeholders that have participated in consultations during the project identification phase:
Civil Society Organizations Yes
Indigenous Peoples and Local Communities Yes
Private Sector Entities Yes
If none of the above, please explain why:

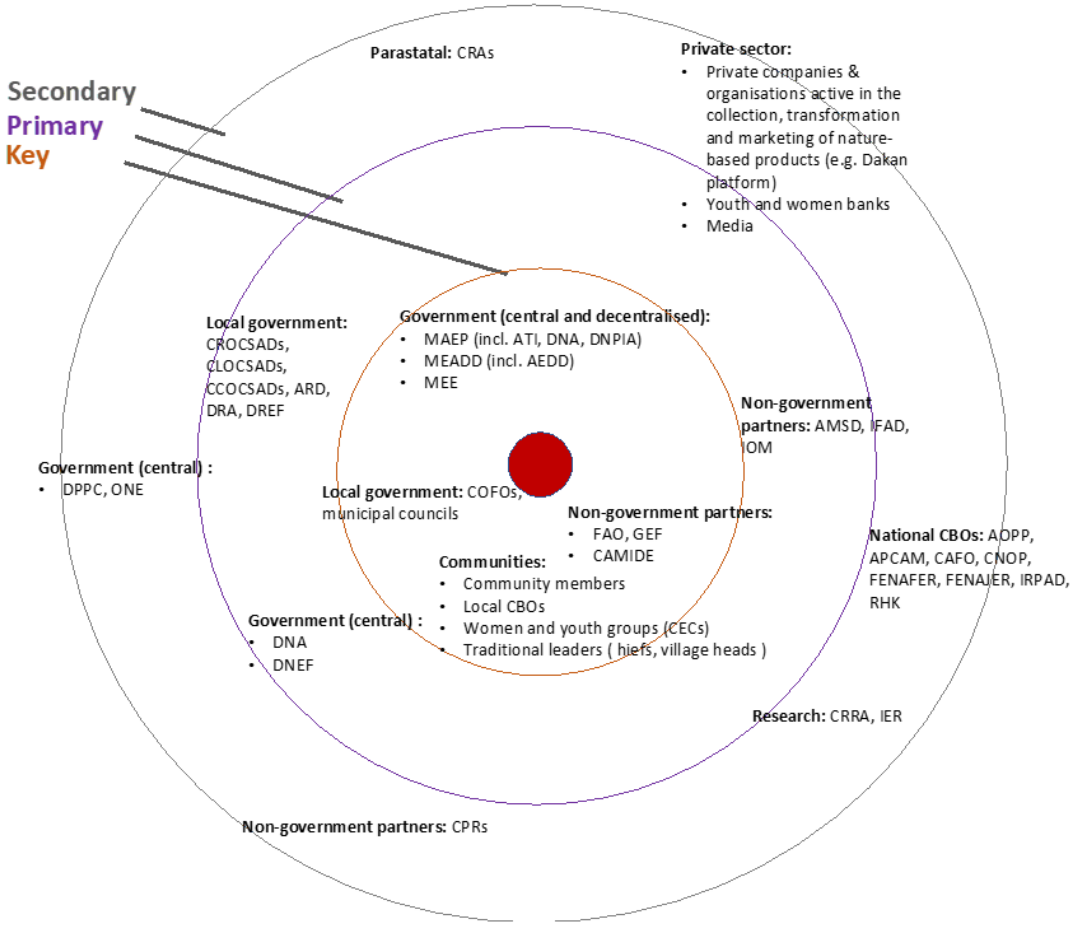
1. Several stakeholder consultations were conducted during the project identification and PPG phase with representatives of local communities, governmental institutions (central and decentralised), local government, non-governmental partners (multilateral UN agencies, NGOs, parastatals), research institutions, local and national CBOs as well the private sector. A full list of consultations conducted in the project design phase is presented in Annex I2. Focus groups were conducted with local communities (women and men) to gain an in-depth understanding of the social, economic and environmental dynamics in the target landscapes. The Stakeholder Engagement Matrix in Annex I2 includes information on how stakeholders will be involved and consulted in the project execution, including any disadvantaged or vulnerable groups/individuals. This is further summarised in the Stakeholder mapping below (figure 16).

2. As part of the process of implementing the TAPE and CMT tools, a participatory workshop was held on 4 December 2020 in Kayes. This allowed to validate TAPE and CMT results with a diversity of local stakeholders (24 participants).

3. Despite the pandemic context, a field mission was organised in March 2021 (with the partication of the national GEF Focal Point), which made it possible to consult with producers' organisations, State technical services, administrative and local authorities, civil society and local communities. Overall, 241 people were met with, 42% of whom were women. All consulted stakeholders welcomed the inclusive approach proposed by the project.

4. Under Component 4, the project will develop a knowledge management strategy to ensure information dissemination and sharing of knowledge and lessons with project stakeholders and interested parties beyond project partners. This will include, among other things, setting up a co-financing partner group to share knowledge and foster technical cooperation among its members.

Figure 16. Stakeholder mapping



Please provide the Stakeholder Engagement Plan or equivalent assessment.

Annex I2: Stakeholder Engagement Matrix and Grievance Redress Mechanism

Stakeholder Engagement Matrix[1]1

The table below summarizes the main stakeholders that were consulted during project preparation (PPG) and/or who will play a role in the project implementation. It also indicates the methodology for consultation or engagement.

Types of stakeholders

? Key Stakeholders: Have skills, knowledge or position of power to significantly influence the project

? Primary Stakeholders: Directly affected by the project / direct beneficiaries

? Secondary Stakeholders: Only indirectly or temporarily involved / indirect beneficiaries

Stakeholder Name	Stakeholder Type	Key function within mandate/activity related to the project	Consultation methodology & date of consultations (PPG)	Expected role in project implementation (Implementation)	Comments
a) National and local government					

Ministry of Agriculture, Livestock and Fisheries (MAEP)	National Directorate of Agriculture (DNA) Regional Directorate of Agriculture (DRA)	Key Direct beneficiary and lead executing partner	The National Directorate of Agriculture was created by Law No. 05-012 of 11 February 2005 and Decree No. 189/P-RM of 4 May 2009 sets out its organization and operating procedures. Its mission is to develop the elements of the National Agricultural Policy and to ensure its coordination, control and implementation. To this end, it is responsible for designing and monitoring the implementation of measures and actions to increase production and improve the quality of agricultural, food and non-food goods; ensuring the promotion and modernisation of agricultural sectors; designing and monitoring the implementation of training, advisory, extension and communication actions for farmers; to elaborate and ensure the application of the regulations relating to phytosanitary control and packaging of agricultural products; to elaborate and implement measures for the valorisation	Preparation of and participation to local consultations on the PIF Mobilization of stakeholders (technical services, agro-pastoralist organizations, NGOs, projects and programmes, local authorities, administration, etc.) Identification of co-financing partners Correspondence, local consultation workshops with all the actors of the region and the 6 circles, from 21 to 27/07/2019 Participation in the TAPE validation workshop Proposal for co-financing projects Transmission of the project document by e-mail, 06/04/2021. Participation in the community consultation workshops from 15 to 28/03/2021	Partner in charge of the implementation of the 12,000 APFSs, AVECs and Dimitra Clubs. Member of the Steering Committee and co-financing partner of the project	Mali?s DNA is a long-term FAO partner in the country. Since 1999, it has implemented various relevant projects, including those from the GEF: i) ?Strengthening resilience to climate change through integrated agricultural and pastoral management in the Sahelian zone in the framework of the Sustainable Land Management approach?, 2015-2019; ii) ?Integrating climate resilience into agricultural production for food security in rural areas of Mali?, 2012-2016; and iii) the ?Caisses de resilience? project in Bandiagara.

	National Directorate of Animal Production and Industries (DNPIA)	Execution partner	The National Directorate of Animal Production and Industries (DNPIA) was created by Law N?05-008 of February 11, 2005. The DNPIA's mission is to develop the elements of national policy in the fields of animal production and the valorisation of animal products and by-products and to ensure the coordination and control of its implementation .	Participation in local consultations on the PIF during workshops, from 21 to 27/07/2019	In charge of livestock management, poultry/poultry capacity building for agro-pastoralists. Elaboration of transhumance tracks and signing of negotiated conventions.	

Ministry of Environment, Sanitation and Sustainable Development (MEADD)	Agency for the Environment, Sanitation and Sustainable Development (AEDD)	Key Direct beneficiary and co-executing partner Member of the PSC	Law No. 10-027 of July 12, 2010 creates the Agency for Environment and Sustainable Development (AEDD) whose mission is to ensure the coordination of the implementation of the National Policy for the Protection of the Environment and to ensure the integration of the environmental dimension in all policies.	Letter of endorsement of the project funding agreement by transmission via official mail and email 22//5/2019 Participation in local consultations on the PIF with the GEF Focal Point at the workshops from 21 to 27/07/2019 Project proposal for co-financing by sending the project document by e-mail, 30/03/2021 Participation in the community consultation workshops from 15 to 28/03/2021 (PPG phase) with the GEF Focal Point	All institutional issues, capitalization of achievements, reporting of co-financing. Involved in the implementation of the project. Member of the Steering Committee	

	National Directorate of Water and Forests (DNEF) Regional Directorate of Water and Forests (DREF) Forestry camps	Implementing partners	The National Directorate of Water and Forests is responsible for developing the elements of the national policy on water and soil conservation, combating desertification, sustainable management of forests, wetlands, wildlife and its habitat, preservation of the biological diversity of wild fauna and flora species, promotion and enhancement of forest and wildlife products, and for coordinating and monitoring its implementation.	Participation in local consultations on the PIF through workshops from 21 to 27/07/2019		

Decentralised local authorities	Regions, circles municipalities	Primary Member of the PSC	Local authorities are responsible for designing, programming, implementing and monitoring and evaluating economic, social and cultural development actions of regional, local or communal interest.	Information provided on the institutional context, SRAT of Kayes, existence of SLAs, basic information on the functioning of COFOs, CLOCSAD and CCOCSAD, number of staff in the regional/local directorates, PSDR of Kayes Telephone exchanges from 20 to 24/01/2020 and consultations from 15 to 28/03/2021		The Act of 11 February 1993 defines the territorial authorities of Mali as the regions, the district of Bamako, the circles, the urban communes and the rural communes, each of which has legal personality and financial autonomy and none of which may establish or exercise supervision over another authority. The communities are freely administered by elected assemblies or councils which elect an executive body from among their members.

b) Local communities and community groups						
Local communities including women and youth groups	Community members	Primary Main beneficaries	In 2018, the population of the Kayes region is estimated at 2,665,000 inhabitants including 1,314,287 men against 1,350,713 women. This population is particularly young: the under 14 years represent 46.9% of the population, 59.31% are under 20 years and 34.57% are between 20 and 59 years. The elderly (60 years and over) represent 6.12% of the region's population. Women of childbearing age (15-49 years) represent 39.92% of women and 19.76% of the total population. The estimated number of beneficiaries is approximately 33,000 people including 12,000 via the CEAP	Field visits, focus groups (22 and 26/07/2019) and 15 to 28/03/2021	Local communities will be the main beneficiaries of the project?s on-the-ground interventions.	Extensive consultations with local communities (including through targeted groups such as women and youth) will be undertaken at project inception to further ensure the full support of the community groups on each aspect of the project.

	Community-based organizations	Primary	? Community-based organizations are very active in the targeted landscapes and focus on improving the living conditions of their members	Field visits, discussion groups on 22 and 26/07/2019 Consultation mission with the stakeholders in order to prepare the intervention framework of the project with regard to the priority activities to be carried out under Component 3, in Kita-Bafoulab?, from 15 to 19/03 and in Kayes, Y?liman?, Di?ma and Nioro, from 20 to 28/03/2021 Youth and women's issues were identified and activities to be supported were proposed	Management of the infrastructures constructed by the project, the management of territorial markets, implementation of priority activities identified.	

	Traditional authorities (Village and community leaders)	Primary	Village chiefs represents their community before the public authorities. Placed under the authority of the mayor, they are the representative of the administration in his community. They are in charge of a public service mission and ensure the application of laws and regulations. Village chiefs preside over their community's council and convene it for any matter falling within the council's competence. They can provide essential support in the event of conflicts. They have the duty to defend the territorial integrity of the village and its land domains. Village chiefs are moral references in societies. They are the last resort in the village and manage relations with other villages.	Field visit, focus groups, 15-19/03 and 20-28/03/2021.	Assist in community mobilization; participation, development and implementation of covenants and ?mis en defens? areas	

	Community leaders	Primary	Community leaders are the legitimate representatives of the communities and are best equipped to address them and raise awareness. Already represented on village committees, they have a recognized authority among the population. They can provide essential support in the event of conflicts, especially if these conflicts take on a community-based dimension.	Consultation mission with stakeholders to prepare the project intervention framework with regard to priority activities to be carried out under Component 3, in Kita-Bafoulab?, from 15 to 19/03 and in Kayes, Y?liman?, Di?ma and Nioro, from 20 to 28/03/2021. Definition of animal passage corridors, proposals for agreements or pastoral developments to be carried out.	Community leaders will be directly involved in all phases of this project. They will participate in the identification of potential members of village committees, Dimitra clubs and natural resource management committees, in the development of agreements and in conflict management.	

c) Civil society

Permanent Assembly of chambers of Agriculture (APCAM) Regional Chambers of Agriculture (CRA) Delegations of Local Chambers of Agriculture (DLCA)	Primary	APCAM was created in 1987 to represent the agricultural profession to the public authorities and to participate, on its behalf, in the definition and implementation of rural development policies and programmes. APCAM also exists to provide farmers and their professional organisations with the support and skills they need to ensure their own development. It is composed of nine autonomous and decentralized regional Chambers of Agriculture and a Permanent Assembly. The Regional Chambers of Agriculture are advisory bodies to the public authorities on agricultural interests in the region. They also exist to provide farmers and their professional organisations with the support and skills they need to ensure their own development.	Consultation mission with stakeholders to prepare the project intervention framework with regard to priority activities to be carried out under Component 3, in Kita-Bafoulab?, from 15 to 19/03 and in Kayes, Y?liman?, Di?ma and Nioro, from 20 to 28/03/2021. Mobilization of Agro-pastoralist Organizations, provision of a directory of Operational Partners in the Kayes Region	Beneficiary. APCAM will be involved in the whole process of implementation of the project: identification of the beneficiary partners for capacity building	

National Coordination of farmers organizations (Coordination Nationale des Organisations Paysannes, CNOP)	Secondary	CNOP is a socio-professional confederation bringing together the various farmers' federations in Mali. It was created in 2002. Its general objective is to enable farmers' organisations in Mali to contribute to the definition of a clear vision of Malian agriculture and a coherent agricultural policy centred on family farms. The CNOP aims to be the only national framework for the representation of farmers' organisations in Mali and, as such, it represents Malian farmer?s organisations within ROPPA[2]2.	Phone consultations	Pooling of efforts in the same areas of intervention.	

Coordination of women?s organizations in Mali (Coordination des Associations F?minines, CAFO)	Secondary	CAFO is a grouping of NGOs and women's associations in Mali that intends to contribute to the enhancement of the status of women through training and information activities, advocacy and lobbying. It provides technical support to its members through advisory and guidance activities in the search for funding. It acts as an interface between its members and the public authorities	Consultation mission with stakeholders to prepare the project intervention framework with regard to priority activities to be carried out under Component 3, in Kita-Bafoulab?, from 15 to 19/03 and in Kayes, Y?liman?, Di?ma and Nioro, from 20 to 28/03/2021. Mobilization of Agro-pastoralist Organizations, provision of a directory of POs in the Kayes Region.	Mobilization of women and participation in fairs, workshops and open days.	

Institute for Research and Promotion of Development Alternatives (IRPAD)	Secondary	The Institute for Research and Promotion of Development Alternatives (IRPAD) is an association under Malian law, with a scientific and educational vocation, created in 2004. It is an association that supports farmers' organizations and has proven expertise in agricultural policy issues, food security and sovereignty. IRPAD has long accompanied Malian producers and their organizations, particularly AOPP, but also organizations in the sub-region in their participation in the development of agricultural policies in general, and seed land policies in particular.	Memorandum of Understanding with FAO for the evaluation of the performance of Agro ecology and the mapping of territorial markets in the Kayes region of Mali - TAPE/CMT Workshop held in Kayes on July 15, 2020 Provision of Stage 1 & 2 Report, 26/01/2021 final TAPE/CMT	Involved in capacity building of facilitators/farmers on agroecology Involved in the final evaluation of the Project	

Association for Rural Development (ADR)	Secondary	Since its creation in 1996, ADR has implemented many micro-projects in the different areas of intervention, particularly the Kayes region. ADR is involved in the following areas: Agriculture, Training, Village Hydraulics, Rural Development.	Participation to local consultations on the PIF, Workshops from 21 to 27/07/2019 Consultation mission with stakeholders to prepare the project intervention framework with regard to priority activities to be carried out under Component 3, in Kita-Bafoulab?, from 15 to 19/03 and in Kayes, Y?liman?, Di?ma and Nioro, from 20 to 28/03/2021. Mobilization of Agro-pastoralist Organizations, provision of a directory of POs in the Kayes Region	Partner who could be involved in capacity building of actors (jobs/youth, IGAs) ? partnership modalities will be further explored during the project inception phase.	

National federation of rural women (F?d?ration Nationale des Femmes Rurales, FENAFER)	Secondary	FENAFER is an independent, non-political, secular and non-denominational association born of the will and solidarity of rural women who, having noted the progressive deterioration of their situation, deemed it necessary to join forces. Its objectives are to increase agricultural production, ensure food security and reduce poverty.	Participation in local consultations on the PIF: workshops from 21 to 27/07/2019 Consultation mission with stakeholders to prepare the project intervention framework with regard to priority activities to be carried out under Component 3, in Kita-Bafoulab?, from 15 to 19/03 and in Kayes, Y?liman?, Di?ma and Nioro, from 20 to 28/03/2021. Mobilization of Agro-pastoralist Organizations, provision of a directory of partners in the Kayes Region	Support the development and implementation of the gender-sensitive curriculum for APFSs Support the development of Benso Jamanu network and AVECs	

National federation of rural youth (F?d?ration Nationale des Jeunes Ruraux, FENAJER)	Secondary	The National Federation of Rural Youth aims to strengthen the representation and participation capacity of rural youth in the socio-economic development of Mali. Its objectives are to strengthen the capacity to represent, coordinate and defend the interests of rural youth in Mali, strengthen the capacity for advocacy, lobbying and proposal on issues of concern to them, mobilize human and financial resources for rural youth in Mali and mobilize rural youth in Mali around information, education, communication and mobilization actions in the fight against HIV/AIDS in rural areas.	Participation in local consultations on the PIF, Workshops from 21 to 27/07/2019 Consultation mission with stakeholders to prepare the project intervention framework with regard to priority activities to be carried out under Component 3, in Kita-Bafoulab?, from 15 to 19/03 and in Kayes, Y?liman?, Di?ma and Nioro, from 20 to 28/03/2021. Mobilization of Agro-pastoralist Organizations, provision of a directory of POs in the Kayes Region	Beneficiary and involved in the realization of youth employment through the IGAs supported by the project.	

Media outlets (including online and print newspapers, radio and TV)	Secondary	Production and broadcasting of communication products using various communication channels to reach the general public.	Media reported on project preparation during the PPG phase included 15 au 28/03/2021	The project will work with the media on an *ad-hoc* basis to publish project stories, share lessons learned and generally reach out to external stakeholders.	Media will be informed about project activities on an *ad hoc* basis. Opportunities to communicate on project results will be systematically seized.
d) Regional and international organisations, development partners					

Belgian Development Agency (Enabel)	Secondary Member of the PSC	For the past few years, Enabel has been providing a weekly presentation of environmental and climate news in Mali, Belgium and the world. - Present in Mali for more than 30 years, Belgian cooperation contributes to the promotion of sustainable, inclusive and job-creating growth, to the rebuilding of the State, to the establishment of peace and security and to the fight against poverty. Since 2009, the Belgian development agency has focused its activities on the sectors of rural development (livestock) and governance (decentralisation, civil status).	Publication of the PIF	Dissemination of information about the main project workshops (steering committees, evaluation reports) Role in guiding and monitoring project activities.	Enabel is a partner of FAO and has funded the project ?Reducing vulnerability of agricultural livelihoods through the 'Resilience Box' approach in the Sahel? 2016-2018

Food and Agriculture Organisation (FAO)	Key GEF Implementing Agency Member of the PSC	FAO is a specialized agency of the United Nations that leads international efforts to defeat hunger. Its goal is to achieve food security for all and make sure that people have regular access to enough high-quality food to lead active, healthy lives. With over 194 member states, FAO works in over 130 countries worldwide.	Inception, workshops, meetings, field visits (21 to 27/07/2019; and 15 to 28/03/2021) Discussions of the next crucial steps for the validation of this project, on 23/04/2021	FAO is the GEF agency in charge of project design and implementation. Specific areas in which FAO?s expertise will be capitalised upon include the APFS approach, agroecology, Dimitra clubs etc. The specific role of FAO in project implementation is further described in Annexes K and L. Project Steering Committee member.	

e) Academia/research institutions

CIRAD (Centre de coop?ration internationale en recherche agronomique pour le d?veloppement)	Secondary	CIRAD is a public-private partnership under the dual supervision of the Ministry of Higher Education, Research and Innovation and the Ministry of Europe and Foreign Affairs of France. With its partners in the global South, CIRAD produces and transmits new knowledge to support innovation and agricultural development. It uses its scientific and institutional expertise to support public policies in these countries and in international debates on the major agricultural issues. It supports France's scientific diplomacy. Through the FAIR Sahel Project: Fostering an Agroecological Intensification to improve farmers' Resilience in Sahel CIRAD is a cofinancing partner of the GEF project through the FAIR Sahel project.	Exchange of several messages since December 14, 2020 and Zoom conference organized Several discussions led to the signing of a co-financing letter on the basis of the identified synergies with the FAIR Sahel project.	Numerous synergies between the proposed project and FAIR Sahel have been jointly identified with CIRAD (cf. Annex S). Practical technical cooperation and knowledge sharing will be sought, including through the meetings of the co-financing partner group (Output 4.2).	

Agricultural Economics Institute (IER)	Secondary	The Institut d'Economie Rurale (IER), created in 1960, is the main research institution in Mali with the mission to contribute to agricultural productivity through research better adapted to the needs of the rural population, to safeguard natural resources, to increase food security and the income of farmers and to ensure the viability and sustainability of rural development. At the regional level, it is represented by the Regional Agricultural Research Centre (CRRA) of Kayes.		IER would be involved in capacity building of stakeholders through CEAPs and in artificial insemination, making approved technologies available to the project.	IER is a regular partner of FAO. It is a national institution in charge of agricultural research that has been involved in all CEP/CEAP projects in Mali. As such, it has proposed technologies and trained the facilitators of the Farmer Field Schools.

Polytechnic Institute for Rural Training and Applied Research (IPR/IFRA) Katibougou	Secondary	The IPR/IFRA of Katibougou is a Public Establishment of Scientific and Technological Character with autonomy of management whose training offers are exclusively centered on the field of Agricultural Sciences. Since its creation, the IPR benefited from important decisions of the department of teaching for its adaptation to the requirements of the imperatives of the rural development as the social evolution of Mali progresses IPR facilitates communication between researchers, farmers, extension workers and other parties.	N/A	IPR could be involved in capacity building through the APFSs.	IPR is a traditional partner of the CEP project. It has helped to establish agroforestry perimeters within the framework of the GEF project 033.

Agricultural Learning Centres: ? Centre d'Apprentissage Agricole (CAA) of Kayes ? Agropastoral Training Centre (CFAP) of Kayes ? Agro-pastoral training centre in APC (CFAP -APC) of Kayes ? Technical Institute for Agro-Sylvo Pastoral Training (ITFASP) in Kayes ? Rural Polytechnic Centre, Kita ? Agropastoral training centre (CFA) of Kita ? Agro-pastoral training centre (CFA) of Bafoulabe ? Technical Institute for Agropastoral Training (ITFA) of Kita ? Boubou Sow Agropastoral Training Centre of Di?ma	Secondary	Agricultural Learning Centres are public educational instituions for agricultural technical education whose mission is to provide initial, advanced and refresher training for technical agents in agriculture and rural engineering and for rural producers. Nine institutions were identified.	Visits and telephone contacts, from 16/03/2021 to 17/03/2021	Promotion of agroecology: exchange visits can be organized with these centers for sharing experiences. Participation in the detailed mapping and analysis of relevant programmes and investments underway in Mali, including their target groups (e.g. youth 15-40; young adolescents 15-17) and strategies adopted (Activity 3.5.1)	

f) Private sector					
Centre d?Appui ? la Microfinance et au D?veloppement (CAMIDE)	Secondary	CAMIDE has several decades of experience in providing technical support to organizations involved in local socio-economic development. The creation of the Benso Jamanu micro-finance network in the Kayes region, based on an original approach inspired from Indian AVECs with a strong focus on facilitating access to finance for women, is one of the greatest illustrations of this experience.	E-mails, phone calls, documentation, during all months from February to April 2021	A LoA will be signed with CAMIDE to carry out activities under Output 3.3 on innovative financial mechanisms set up to leverage funding and facilitate investment in the agro-sylvo-pastoral sector.	CAMIDE's intervention in the area is fully justified by the presence of the successful microfinance system (Benso Jamanu network & funds). CAMIDE has been active in the Kayes region since the 1980s.

Association Malienne pour la Solidarit? et le D?veloppement (AMSD)	Secondary	AMSD is a humanitarian association for solidarity and sustainable development. It was created to strengthen and sustain volunteerism and socio-economic development for the benefit of disadvantaged populations. AMSD has been developing an organic certification at the national level (?Bio Local?), with a view to disseminate agroecological practices and facilitate market access for producers who embark in the adoption of such practices[3][3].	E-mails, phone calls, documentation, during all months from February to April 2021	AMSD is envisaged as a partner to conduct activities related to certification under Output 3.4, and the deployment of the Bio Local participatory certification method and extension of organic and ecological agriculture that is sensitive to food and nutritional security in in the target circles.	

[1] See FAO Operational Guidelines for Stakeholder Engagement. Please include identification and consultations of disadvantage and vulnerable groups/individuals in line with the GEF policy on Stakeholder Engagement and GEF Environmental and Social Safeguards.

[2] R?seau des organisations paysannes et de producteurs de l'Afrique de l'Ouest

[3] More information is available here.

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

Select what role civil society will play in the project:

Consulted only;

Member of Advisory Body; Contractor;

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. Due to cultural, historic and power imbalances, men and women have different assigned roles and opportunities in most societies. Regarding environmental issues, men and women relate to natural resources in different ways, and environmental changes have different impacts on their lives. But women?s needs, roles and capabilities are too often under-recognised or undervalued. They are also disproportionately affected by climate change impacts such as droughts, floods and other extreme weather events. Yet, women tend to benefit less than men from development aid and investments: just 10% of total aid provided for agriculture, forestry and fishing goes to women[2], who receive just 7% of total investment in agriculture[3]. Adopting a gender lens in development projects is a way to recognise these differences and act accordingly to get better project results.

2. The GEF[4]4 and the FAO[5]5 recognise that more systematic inclusion of gender aspects in projects can create positive synergies between positive environmental impact and greater

gender equality. In this perspective, the proposed project adopts a gender-responsive approach, by mainstreaming gender considerations both in the theory of change and the results frameworks. The gender analysis and gender action plan presented below highlight the key dimensions of this approach.

3. Practical guidelines were first developed to provide the PPG team with a flexible framework for a better integration of gender dimensions into the project. Sex-disaggregated data at the national and regional levels were gathered through a review of academic literature, grey literature and secondary data sources. Additional data was collected at the local scale through FAO's Tool for Agroecology Performance Evaluation (TAPE) and Market territorial approach methodology. In addition, the evaluation of the FAO-GEF project ?Strengthening Resilience to Climate Change through Integrated Agricultural and Pastoral Management in the Sahelian zone in the Framework of the Sustainable Land Management Approach?[6]6 was capitalised upon.

Gender analysis

4. One of the economically poorest countries in the world, Mali is also considered to be one of the worst environments for women with regards to gender equality: as of 2019, Mali ranked 123rd out of 129 in terms of the SGD Gender index[7]7. According to the Malian Association of Human Rights, the position and treatment of women is one of the most stringent human rights issues in Mali today. Inequality in status and position within the family and society limits the women?s opportunities and hinders their participation in public life.

5. Discrimination in employment is widespread, especially in rural areas. The majority of Malian women continue to work in the informal sector or to occupy subordinate positions, where they are paid less than men doing the same work. In 2018, 75% of Malian women were illiterate[8]8. However, even educated women face the persistence of socio-cultural obstacles that negatively affect their legal and social status (see below). This is compounded by a high fertility rate (with an average of 5.9 births per women in 2018)[9]9, which often constitutes a constraint for women?s participation to public life.

6. Beyond the lack of opportunities, Malian women endure several forms of violence ? including domestic violence (in 2018, a national survey[10]10 showed that one in two married women have experienced domestic violence at the hands of their husbands) and genital mutilation. Although awareness about these issues has been rising in recent years, much remains to be done to address gender violence, gender inequality and more generally the large gaps that exists in terms of opportunities between women and men.

7. Women and public life: Although Mali ratified the Convention on the Elimination of all forms of Discrimination Against Women (CEDAW) without reservations in 1985, the GoM

has never incorporated its provisions into domestic law. Statutory law in Mali contains many discriminatory provisions against women[11]11. For example, according to the *Code du mariage et de la tutelle,* the husband is considered the head of the family and the wife has a duty to obey her husband (Art. 34).

8. The Ministry for the Promotion of Women, the Family, and Children (Minist?re de la Promotion de la Femme, de l'Enfant et de la Famille, MPFEF) is responsible for ensuring the legal rights of women. This Ministry produced a guide on violence against women for use by health care providers, police, lawyers and judges. This guide provides definitions of the types of violence and guidelines on how they should be handled. In 2011, the MPFEF released the Politique Nationale du Genre du Mali (National Gender Policy of Mali, PNG-Mali), along with an Action Plan[12]12. This ongoing national gender policy further creates an opportune environment for the project. Several of the proposed project?s interventions are in line with strategic orientations of this policy, such as: i) improving the profitability of the rural women?s work in agriculture, livestock or fisheries (focus of Action 2.2[13]13); ii) increasing women's access to land and agro-forestry plots (Output 3.2.1); iii) increasing women?s access to various technical trainings (Output 2.1.3); and iv) facilitating access to credit (Activity 3.3.2.3).

9. Other national policies are relevant to fight gender inequalities. It includes the National Strategy for Fighting Poverty[14]14 which promotes gender equality through offering opportunities for women. It also includes the National Prospective Study Mali 2025[15]15 which aim is the development of technologies for rural women to decrease their domestic and agricultural workload.

10. On November 12, 2015, the Malian National Assembly adopted a historic gender quota bill. The new law, which requires that at least 30% of elected or appointed officials be women, is a result of concerted action to reverse several years of negative trends in women?s representation in positions of power. Consequently, in 2020, the women?s representation in National Assembly members jumped from 8% to 28%.

11. While women?s political participation is crucial for democracy, empowering women in Mali is also crucial for at least three other reasons: peace building, adaptation/mitigation of climate change and food security ? as further elaborated upon below.

12. Women and peace-building process: Empowering women in Mali is crucial for peace keeping. As conflict ripples through northern and central Mali, new research reveals women could play a key role in steering the country towards peace. For example, the ?Hand-in-hand? study about insecurity and gender in Mali[16]16 underlines the fact that ?processes of conflict and peacebuilding present unique opportunities to shift societal status quos and question power structures. While they suffer elevated levels of conflict-related gender-based violence, women

also play important roles as informants for insurgent groups and exert significant influence over security decisions in the private sphere. [?] Women also demonstrate motivation at the local and national levels to respond to a burgeoning crisis?.

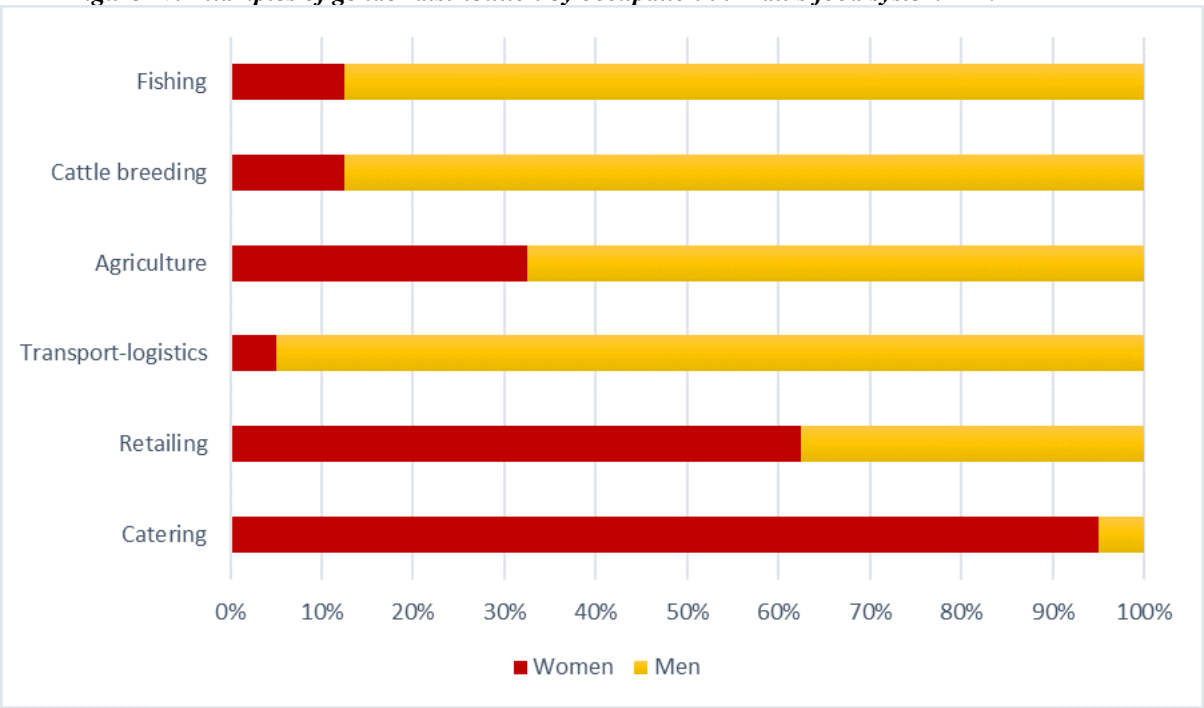
13. Women and climate change: Investing in women as part of the climate change response is part of the FAO strategy to improve communities? resilience in the face of increasingly adverse effects of environmental degradation[17]17. Vulnerability to climate change is well known to especially affect poor people, particularly women, and Mali is no exception. While migration represents one of the most important strategies for men in Mali, women tend to perceive this strategy more as a cause of vulnerability than an adaptive strategy[18]18. They thus tend to develop their own adaptive strategies. A study in Northern Mali shows how women adapted their activities after the drying out of Lake Faguibine, switching from water-dependent activities to the exploitation of emerged forest resources in the former lake area. Nevertheless, the study shows that women are hindered from realising the full potential of these new activities. This is due to the unequal participation of women and men in decision-making processes at different scales, unclear access to natural resources and lack of knowledge and financial resources. A limited power to influence decision at the household and community levels as well as constrained market opportunities for women are additional factors[19]19.

14. Women and biodiversity : Women and men share different knowledge levels about natural resources. For example, women play a crucial role in seeds selection and conservation. They also have extended knowledge on wild plants for food and medicines. Women thus have a major role to play in biodiversity conservation. Many case studies from around the world have also demonstrated that biodiversity conservation efforts become more effective and ef?cient when women and vulnerable groups are empowered to participate as equal partners, sharing their knowledge and skills[20]20.

15. In Mali, for example, women tend to be the ones who primarily collect forest products such as baobab, jujube, doum and shea. They are also responsible for edible tamarind and fonio collection[21]21. ?Additionally, certain vegetable species are valued because women use them for basket making, weaving, and pottery making. [?] It has been recognized that the calabash tree?s maintenance and development is due to the uses women give to it?[22]22. The National Biodiversity Strategies and Action Plans (NBSAP) of Mali[23]23 recognises these gender-specific uses of natural resources. The NBSAP points out that some resources used by women are collected in a non-sustainable way, jeopardising the development and the regeneration of these resources. It also identifies poverty as one of the underlying causes of these unsustainable practices and recognises women as potential agents of change to mitigate climate change effects in the country.

16. Women, agriculture, land use and food security: Empowering women in Mali is also ?a winning strategy to accelerate progress towards rural development and food security?[24]24. Women play a key role in Malian food systems. They contribute at various stages of production, processing, and marketing (figure 17). This is despite their own work sometimes not being credited to them, e.g. when women are contributing as part of family or non-wage workers[25]25. The majority of women who work in agriculture are not remunerated for their labour: 77% of women farmers declared that they have never received wages for their work[26]26. Almost 38% of women work as unpaid family workers in Mali compared to about 26% of men[27]27.

Figure 17. Examples of gender distribution by occupation in Mali's food system[28]28.



17. In Mali, the vast majority of people live in rural areas and rely on natural resources for their livelihoods. As of 2020, 55% of women in Mali are employed in the primary sector, as compared with 37.5% in the tertiary sector and 7.5% in the secondary sector[29]29. Even though women make up 75% of agricultural labour force[30]30, they are mostly confined to unpaid food production, whereas men dominate in wage employment. In the agricultural sector, the gender balance has indeed a strong influence on production organisation. For example, men are more represented in cash crop cultures that generate higher revenues (e.g. livestock, nuts), while women tend to be in charge of horticulture and subsistence crops for household self-

consumption. Men and women may also cultivate the same crops for different levels of consumption (e.g. household, local, export)[31]31. Despite these discrepancies, women play a crucial role in providing dietary diversity for their families and ensuring food security at the household level[32]32.

18. Access to natural resources is another inequality factor, with women often struggling to access water, fertilisers and land. While statutory law provides for women?s access to property, matters of inheritance and access to land are mainly governed by customary law, which provides that women do not have access to land ownership, despite their extensive participation in agriculture: women represent fewer than 5% of all agricultural landholders in the country[33]33. They can cultivate or use land temporarily, but land can be taken back from them at any time. This discourages women from investing in land improvements[34]34. In addition, women are often constrained to work on small plots with degraded soil, which can only yield poor returns. The lack of access to credit is also a major constraint in women?s success in their agricultural pursuits, since it hampers their capacity to purchase the necessary inputs and services and to move beyond subsistence farming. According to the MPFEF, women's access to agricultural sector credit stood at 12% of total credit allocated[35]35 in 2012.

19. As mentioned in the 2018 GEF Gender Implementation Strategy, ?persistent gender-discriminatory social and cultural norms, unequal access to land, water and productive assets, and unequal decision-making continue to constrain women and men from equally participating in, contributing to, and benefitting from environmental projects and programs?. To combat this injustice, the proposed project will put in place various gender-transformative approaches such as Dimitra Clubs and Farmers? Field and Business Schools.

20. Women and Farmer Field Schools : ?The Farmer Field Schools (FFS) play an important role in reinforcing the technical and functional capacity of participants and simultaneously contribute to inclusive community development, women?s empowerment and gender equality?[36]36. But in West African countries, the participation of women in FFS has thus far lagged behind male involvement[37]37.

21. In order to promote gender-integrated FFS through the proposed project, an analysis of the specific needs and vulnerabilities of women regarding FFS activities was conducted, including through a literature review and a compilation of best practices across previous GEF-FAO projects[38]38,[39]39. A review of the previous FFS projects in the Kayes region was also carried out to understand constraints on women?s participation to FFS activities. A set of actions to

better include women to these activities in the context of the project was then established (table 13).

Table 16. Women?s participation in FFS: constraints and solutions.

Elements limiting women?s participation to FFS	**Actions discussed with PPG team**
Women are not encouraged to register to FFS, in some cases they are even discouraged to do so by their community or by their husband.	Analyse FFS enrolment modalities and adapt them if necessary.
Women are not interested in FFS	Select attractive learning module for women, such as nutrition and commercialisation modules.
Women are busy. Their workloads are even increasing with the climate change and the Covid-19 crisis.	Schedule all relevant activities (trainings, graduation, surveys, FFS preparation sessions) according to women?s time schedule.
Due to structural reasons, it is difficult to train as many women as men as trainers.	? Whenever possible, target women for training sessions. ? Strengthen the gender awareness module delivered to trainers (for existing and new trainers). ? Give priority to women regarding group leadership roles assignment (treasurer, chairwoman, secretary, advisor). ? Use the ?special session? of the FFS training to mainstream gender issues.
Lack of role models for women.	? When possible, mobilise women extension agents ? Encourage local governments and local institutions to recruit female agronomists to join extension services. ? When possible, hire women to conduct the ?special sessions? of FFS trainings.
Women may have the responsibility for children care and meal preparation during FFS learning sessions.	? Hire cooks to prepare local foods to serve during the sessions and to care for children.
Additional actions	? Develop a strategy for the inclusion of women in FFS activities at the beginning of the project. ? Select value chains from a gender perspective in order to guarantee that women are not excluded from the proposed activities of FFS. ? Set gender-specific indicators and targets value.

22. This set of actions was discussed among the PPG team and confirmed by local and in-house expertise. It forms the basis of the Gender Action Plan below.

23. Women in the Kayes region: In 2009, 1,012,383 women accounted for 50.7% of the Kayes? region population. Half of them were less than 15 years old[40]40. In 2018, UN Women identified hotspot for child marriage in the Kayes region where 29% of girls are married before their 15th birthday (vs. 16% at the national scale)[41]41. The prevalence of female genital

mutilation in the region rates over 90%[42]42, just above the national average of 89%.[43]43 This practice leads to immediate health risks, as well as a variety of long-term complications for women in a context of regional healthcare shortfalls. We have learnt from previous FAO projects throughout the Sahel and Central Africa, that Dimitra Clubs and Community Listering Clubs represent platforms to start discussing, creating awareness and addressing these issues.

24. Among the vast majority of people active in agriculture (over 80% region-wide), women work particularly in rice cultivation and horticulture. It should be noted that Kayes is the region in which the share of women responsible for agriculture plots is the highest (30% against 20% on national average).

25. In the absence of labour markets, large families are preferred in Mali?s agricultural areas. Hence average family size in Kayes is 12.8[44]44 with a total fertility rate of 6.8 children born per woman over a lifetime[45]45. Relationships between women?s empowerment and fertility have been assessed in several studies[46]46. The results show that a lower fertility is positively correlated with women?s participation in household decision-making, women?s mobility or women participation to public life.

26. Kayes being the main region of emigration of the country, remittances are an important source of income for the region[47]47. In 2008, the amount of transfers from migrants to families amounted to CFA 120 billion (USD 217 million)[48]48. It is estimated that 60% of remittances sent by the diaspora are directed to women. Leveraging this source of funding to invest in income-generating activities will require to work directly with women, which will provide an opportunity to strengthen their role in investment decisions and the management of small and medium enterprises.

27. The rich network of grassroot women?s associations in Mali represents a precious source of knowledge, leadership and opportunities for the development of women's participation in public life[49]49. For example, the National Federation of Rural Women includes nine professional associations of rural women in the country?s regions (including Kayes), 46 associations of rural women in the different circles and 703 communal associations. The Professional Association of Rural Women of Kayes (Association professionnelle des femmes rurales de Kayes au Mali, ASPROFER) is one example of local women?s associations to be actively engaged in the project delivery.

28. From the above, women implication in the project is therefore crucial to achieve the expected transformational shift towards agroecology, which embraced increased resilience, sustainable land management and biodiversity conservation. The project will address gender gaps through

increasing women access and control over natural resources and income-generating resources, and investing in their technical and leadership skills towards equitable participation in decision-making. In addition, by taking gender consideration into account in its design, the project will ensure that the direct and indirect benefits of sustainable landscape management are equitably shared.

Table 17. Key lessons learned from the gender analysis and project?s interventions

Key lessons learned from the gender analysis	Project interventions
Although awareness about gender inequalities has been rising in recent years, much remains to be done to address gender violence, gender inequality and more generally the large gaps that exists in terms of opportunities between women and men in Mali. However empowering women in Mali is crucial for national issues such as peace building, adaptation and mitigation of climate change or food security.	The project will address gender gaps through increasing women access and control over natural resources and income-generating resources, and investing in their technical and leadership skills towards equitable participation in decision-making. In addition, by taking gender considerations into account in its design, the project will ensure that the direct and indirect benefits of sustainable landscape management are equitably shared. The project will implement several gender-transformative approaches (Dimitra Club, Farmer Field Schools, AVEC, Yeredeme groups) and use a set of gender-responsive indicators, with sex-disaggregated data, to allow proper monitoring and evaluation of gender-sensitive activities.
Malian women are disproportionately affected by climate change. Yet, women tend to benefit less than men from development aid and investments.	Some activities of the project were designed specifically to increase women resilience. For example, horticulture activities are geared towards women. Under this particular activity, they will receive solar-powered pumps, climate-resilient seeds for crops that are adapted to the local climatic conditions for their market gardens. The promotion of Dimitra clubs, microfinance for women, or gender-responsive APFS are also part of the gender transformative strategy of the project.
In 2011, the Ministry for the Promotion of Women, the Family, and Children released the Politique Nationale du Genre du Mali (National Gender Policy of Mali, PNG-Mali), along with an Action Plan. Moreover, there is a rich network of grassroot women?s associations in Mali which represents a precious source of knowledge, leadership and opportunities for women.	The ongoing national gender policy together with other national policies relevant to fight gender inequalities further create an opportune environment for the project. The project will use this favourable political and institutional context to create synergies among actors and their activities to fight gender inequality. The project will also build a network of gender-sensitive stakeholders and partners such as women?s organisations.
Women play a key role in Malian food systems. They are particularly active at the stages of production, processing, retailing, and catering. Value chains in which women are particularly active include forest products collection (baobab, jujube, doum, calabash fruits and shea), rice cultivation and horticulture.	The project will select at least three gender-sensitive value chains and will improve their structure through the establishment of cooperatives and connection between producers, transformers and marketers. The target beneficiaries of these activities will be women for at least 50% (75% in the case of the neem seed oil value chain).

Even though women make up 75% of agricultural labour force, they are mostly confined to unpaid food production. Despite their extensive participation in agriculture: women represent fewer than 5% of all agricultural landholders in the country. They also have inequal access to production inputs from water to fertilisers. Women's access to agricultural sector credit is also very low. In 2012 it stood at 12% of total credit allocated.	The project will promote the Dimitra approach within existing community listening groups (CECs) or, where required, establish Dimitra clubs in at least 20 communes. The project will promote women?s participation among the local landscape committees (COFOs). Together with the local partner, CAMIDE, the project will establish Yeredeme groups, ground-breaking self-help groups for rural women?s empowerment, institution building and livelihood development. Women will also be key actors of the Benso Jamanu microfinance network that will be developed through the projet.
The participation of women in Farmer Field Schools has thus far lagged behind male involvement. Several facts limit women?s participation to FFS: lack of encouragement to register themselves, lack of interest to do so, lack of time to participate, lack of role models.	The project designed a gender-sensitive FFS action plan. Specific module of recycling training will be delivered: awareness raising on gender aspects, nutrition and agroecology. Ambitious target of women trained as trainers has been set. Moreover, the women?s participation to FFS activities must reach at least 50%.
Kayes being the main region of emigration of the country, remittances are an important source of income for the region. It is estimated that 60% of remittances sent by the diaspora are directed to women.	Leveraging this source of funding to invest in income-generating activities ? especially through AVECs ? will require to work directly with women, which will provide an opportunity to strengthen their role in investment decisions and the management of small and medium enterprises.

29. Gender marking: The current project has been tagged as G2A, i.e. it ?[...] addresses gender equality in a systematic way, but this is not one of its main objectives?[50][50].

Gender Action Plan

Project activities (outputs and activities when relevant)	Gender- sensitive indicators and targets	Entry points for gender mainstreaming
Creation of the Project Coordination Unit (PCU)	1 Gender Specialist contracted and engaged in work of the project. She/he will assist project activities throughout project implementation and ensure that gender aspects are duly taken into account.	
Output 1.1: Capacity of at least 22 local landscape committees (COFOs) strengthened to effectively integrate climate change adaptation and vulnerability considerations, as well as land resources use and biodiversity conservation into sustainable landscape management plans.	See activities below.	
? Activity 1.1.1: Amongst the target communes, select at least 11 COFOs in the northern landscape and 11 COFOs in the southern landscape and develop tailored effectiveness barrier assessments (including capacity needs assessment) for each of them. The capacity needs assessment shall be partly based on self-declared need and specific to the context of each commune in terms of land degradation status, climate vulnerability and biodiversity conservation. The capacity assessment plans will ensure women benefit equally as men, even when they are under-represented in the COFOs. Finally, the selection of communes will be consistent with the choice of territorial markets to be supported under Component 3.	? At least 40 % of women in COFO meetings supported by the project	Equal participation of men and women to these committee meetings will be seek. Throughout the project, concrete actions will be taken to achieve participation targets in local landscape committees and trainings, including: ? Schedule the meetings of the decision-making structures at times suitable for women participation ? Provide women with an enabling space to express their viewpoints without fears of being confronted ? Monitoring participation of women and taking immediate corrective measures if gender indicators and gender targets are not met ? As women play an important role for social cohesion. Opportunities to strengthen this role in conflict-resolution mechanisms will be identified within COFOs as a possibility to mitigate the growing number of conflicts over natural resources. ? Ensure the participation of grassroots women living in remote agropastoral communities, including through the use of ICTs to overcome any budget or security-related challenges facing the participation of women in decision making.

? Activity 1.1.2: On the basis of the capacity needs assessment, develop tailored and gender-sensitive training programmes for each COFO	Integration of gender aspects into tailored training programmes	The project will ensure that gender aspects are fully included in the tailored training programmes for each COFO, which will provide a basis for the mainstreaming of gender aspects into the agenda of the committees.
? Activity 1.1.3: Conduct training activities in accordance with the tailored training programmes, in conjunction with the development of SLAs to be implemented under Output 2.1.	At least 30 % of women trained during tailored training programmes	
Output 1.2: Five multi-stakeholder platforms established at the level of and around territorial markets, in order to effectively engage multiple stakeholders (private sector, CSOs, local administration ?) involved in ASP food systems resilience and sustainable land use and biodiversity conservation planning and investment.	? 50% of women?s participation in each platform ? At least 1 women?s local organisation involved in each platform	? Ensure gender aspects are fully included in the ToRs of the multi-stakeholder platforms, which will provide a basis for gender mainstreaming into the agenda of the platforms. ? Provide women with an enabling space to express their viewpoints without fears of being confronted.
Output 1.3: At least 100 people from national and regional institutions have the capacity to conduct climate change vulnerability and environmental impact assessments at the landscape level, providing the evidence for planning and investment.	At least 50 % of women trained NB : this is an ambitious goal that might be not fully achieved throughout project implementation because women?s participation to national and regional institutions is currently well below 50%.	Other gender transformative actions are planned within this activity: ? Encourage national and local governments to recruit female workers to join public institutions. ? Review the training curricula to make sure that gender aspects are fully taken into consideration at all levels.
Output 1.4: At least 100 people from national and regional institutions trained to conduct efficient monitoring of climate change resilience, land and biodiversity use and conservation, resulting from integrated sustainable landscape management interventions.		

Output 2.1: At least 22 integrated sustainable landscape management plans (SCATs) and 17 PDSECs developed by COFOs and relevant bodies for demonstration sites, addressing agro-sylvo-pastoral food system adaptation priorities, and facilitating sustainable production intensification, and sustainable use and conservation of land and biodiversity.	? Women represent at least 50% of stakeholders involved in SCAT and PDSEC revision?s process ? Women represent at least 50% of stakeholders involved in the revision of relevant communal, inter-communal and inter-circle pastoral conventions	The participation of women to the revision of relevant communal, inter-communal and inter-circle pastoral conventions will be strongly supported. However, the percentage of women involved in these activities will depend on the percentage of women reached under Outputs 1.3 and 1.4 activities. Moreover, a review of the SCATs and PDSECs will be carried out with a gender lens, to ensure that gender aspects have been duly considered. If necessary, a complementary assessment of gender aspects may be conducted by the Gender expert and recommendations to strengthen management plans in this regard will be formulated.
Output 2.2: In coordination with COFOs and supporting active engagement of multiple (and sometimes conflicting) resource users in planning and management, at least 100 Community Listening Groups (Dimitra Clubs) established and animated.	? Number of Dimitra clubs established or community listening groups consolidated Target: 100 ? At least 70% of participants of Community listening groups or Dimitra Club are women	The promotion of Dimitra?s Clubs is part of the gender-transformative strategy of the project. Dimitra clubs, are informal groups mainly composed of women, who discuss common problems and determine ways to address them by acting together and using local resources. Dimitra Clubs create also a space to also take action in relation with community social norms and behaviours affecting women, thereby strengthening women?s leadership. As women play an important role for social cohesion, opportunities to strengthen this role in conflict-resolution mechanisms will be identified within Dimitra Clubs or CECs. This opportunity to operationalise this peace building - protection of natural resources - women?s empowerment nexus (part of the humanitarian?development?peace nexus) will be assessed by the Gender expert.

Output 2.3: At least 15,000 agro-sylvo-pastoral producers participate in Agro- Pastoral Field Schools (APFS) and at least 40,000 additional producers from neighbouring communities are trained through exposure visits to APFS and exchange with participating farmers.		In West African countries, the participation of women in APFS has thus far lagged behind male involvement. To address this situation, actions will be taken to better integrate women?s participation to APFSs? activities, including: ? Develop a strategy for the inclusion of women in APFS activities at the beginning of the project. The best practices from past and ongoing projects of APFS in terms of women mobilisation will be gathered, and will inform this strategy. ? Select value chains from a gender perspective in order to guarantee that women are not excluded from the proposed activities of APFS. ? Set gender-specific indicators and targets.
? Activity 2.3.1: Design a training curriculum for agro-sylvo-pastoral activities to be conducted with APFSs	Integration of 1 gender awareness module into the training curriculum.	The mainstreaming of gender aspects was one of the assessed weaknesses of the APFS curricula developed under the previous Mali FAO-GEF project. To remedy this, a special module will be developed and taught to master trainers (cf. below).
? Activity 2.3.2: Provide refresher training to 12 experienced master trainers on three modules, namely: i) awareness raising on gender aspects (role of women in transitioning towards more resilient and agroecological systems); ii) nutrition linked to on-farm diversification; iii) re-organising farms towards agroecological systems; iv) using digital tools to support innovation and agroecology; v) mechanisation and equipment for agroecological systems; and vi) use of local forest non-timber resources.	Integration of 1 awareness raising on gender aspects module into the recycling training.	A first assessment of this module will be led and the module will be strengthened if necessary.
? Activity 2.3.3: Establish six training centres and train 150 APFS facilitators through Memorandum of Understandings and retraining of existing DNA trainers on the integration of crop/livestock systems into APFS.	Number of women trained Baseline: 12% Target: at least 30%	Whenever possible, the project will target women for training sessions but due to structural reasons explained in the Gender Analysis, it is difficult to train as many women as men as trainers.

? Activity 2.3.4: Conduct a participatory identification of beneficiaries and target zones for implementing the APFSs within selected communes of the northern and southern landscapes.	At least 50% of women identified as beneficiaries of APFS activities	Equal participation of men and women to APFS is targeted. This activity of identification of beneficiaries is therefore crucial. To make sure women engaged themselves into APFS activities, concrete actions will be taken: ? Explain to potential beneficiaries that women are especially welcomed to APFS trainings. Details concrete measures undertaken by the project to welcome them (see below the actions? list) ? Monitoring registration of women to APFS and taking immediate corrective measures if gender indicators and gender targets are not met. ?Analyse APFS enrolment modalities and adapt them if necessary.
? Activity 2.3.5: Implement 600 APFSs in selected zones and train 15,000 agro-pastoralists in the APFS approach according to the training curriculum established by the project	?At least 50% women among participants	To build gender-sensitive APFS approach, the project will make sure to: ? Select attractive learning module for women, such as nutrition and commercialisation modules. ? Schedule all relevant activities (trainings, graduation, surveys, APFS preparation sessions) at times suitable for women participation. ? When possible, hire cooks to prepare local foods to serve during the sessions and to care for children. ? Give priority to women regarding group leadership roles assignment (treasurer, chairwoman, secretary, advisor). ? Provide women with an enabling space to express their viewpoints without fears of being confronted ? Use the ?special session? of the APFS training to mainstream gender issues. ? When possible, hire women to conduct the ?special sessions? of APFS trainings. ? When possible, mobilise women extension agents in order to give more role models for women.
? Activity 2.3.6: Organise sessions to retrain APFS facilitators in PY2 and PY3 on the basis of potential capacity gaps reported during PY1 and PY2. Organise annual stocktaking workshops for facilitators in PY 2, 3, 4 and 5.	Integration of 1 module on awareness raising on gender aspects into the recycling training.	

? Activity 2.3.7: Organise participatory community analysis of climate risks by each APFS and identify local CCA measures and technologies.	At least 50% of women participating to the community analysis of climate risks by each APFS	The analysis of climate risks will contain gender aspects.
? Activity 2.3.8: Procure a Delfino plough and restore land through zai implemented mechanically with the Vallerani system, with a focus on northern landscapes (circles of Kayes and Y?liman?). Develop a ?Note de gestion de l??quipement? to maximise the upscaling potential of the plow by lending it to other partners.	At least 30% of restored land benefit women. NB: in the Kayes region, women are a minority to possess land. That is why the project cannot target 50% for this activity.	
Output 3.1: At least three commercial plans for mixed value chains based on territorial approach and circular economy developed and implemented.		During the PPG phase, three income-generating activities (IGA) have been identified that can particularly strengthen the resilience of local communities in the target regions. These IGAs have also been selected according to their women?s participation or to their inclusiveness potential for women.
? Activity 3.1.1: Assist local stakeholders with the development of business plans for horticulture in at least 40 target communes ? including budget planning for input provision.	At least 70% of local stakeholders who have developped commercial plans are women	
? Activity 3.1.2: In accordance with local land-use plans, support the development of collective and individual horticulture areas (fencing, provision of solar-powered pumps and other equipment).	At least 70% of beneficiaries of the development of collective and individual horticulture area are women	? The commercial plans developed will meet the practical needs and strategic priorities of women i.e. will take account of women?s specific barriers, building on gender analyses and consultations for the project. ? The commercial plans development manual will integrate gender considerations into its guidelines.
? Activity 3.1.3: Facilitate the establishment of bulk contracts with local suppliers for the provision of inputs.	At least 50 % of the contracts established are established with women producers/farmers	
? Activity 3.1.4: Cooperate with local cooperatives to facilitate the drafting of a financing plan for the collective purchase and operation of transport equipment to sell fruit and vegetables on territorial markets.		The draft of financial plans will integrate gender considerations in order to maximise women?s benefits from this activity.

? Activity 3.1.5: Acquire small equipment to operationalise the neem press in Kita.	? Number of women using the neem press in Kita. Baseline: 4,444 Target: 8,000 ? At least 85% of new users of the neem press are women	Today, 4,444 women are working with the neem press in Kita. The project seeks to involve 8,000 of them.
? Activity 3.1.6: Conduct tailored business training for women and youth involved with the Dakan platform.	At least 85% of trained people are women	Several organisations have integrated marketing aspects into the APFS, including ADRA (Denmark Adventist Development and Relief Agency) with the Farmer Marketing Schools approach and CARE (Cooperative for Assistance and Relief Everywhere) with the Farmer Field and Business Schools approach, which specifically targets women. The proposed project will build on these lessons learned to propose adequate training curricula for women?s group.
? Activity 3.1.7: Based on the lessons learned from the Dakan platform, establish, equip and train neem seed oil cooperatives in at least two other circles.	70% of beneficiaries are women	
? Activity 3.1.8: Assist local stakeholders with the development of business plans for small livestock and poultry in at least 40 target communes ? including budget planning for input provision.	At least 70% of local stakeholders who benefit from the development of commercial plans are women	? The commercial plans developed will meet the practical needs and strategic priorities of women i.e. will take account of women?s specific barriers, building on gender analyses and consultations for the project.
? Activity 3.1.9: Provide improved, resilient breeds of chicken (e.g. Wassa Ch?) as well as chicken feed.	At least 50% of the beneficiaries are women	
? Activity 3.1.10: Based on a joint analysis with local stakeholders, provide small livestock (goats, sheep), feed, veterinary products and other products as needed for agroecological transformation of livestock enterprises.		
? Activity 3.1.11 : Support compost production by encouraging collective composting production techniques and providing small equipment.	At least 50% of the beneficiaries are women	

? Activity 3.1.12 : Support the development of business plans for the commercial production and marketing of compost locally.	At least 50% of the beneficiaries are women	
? Activity 3.1.13: Build the capacities of ambulant dairy vendors in terms of dairy health/nutrition so that they become ambassadors of better nutrition and production	At least 50% of the ambassadors are women	
? Activity 3.1.14: Support the development and implementation of fodder production and conservation plans in at least 5 communes in the Di?ma circle, with the view to facilitate access to fodder for dairy cows	At least 50% of people receiving support to develop production and conservation plans are women	
? Activity 3.1.15: Procure small equipment to support fodder production in the Di?ma circle.	At least 50% of beneficiaries are women	
? Activity 3.1.16: Procure dairy cows from climate-resilient breeds to at least 20 households in the Di?ma circle.		
? Activity 3.1.18: In collaboration with the multi-stakeholder platforms established under Output 1.2, define requirement specifications for the construction of public toilets with water access in four target territorial markets (Founia, Fanga, B?ma, Sam?). Procure construction companies to build toilet facilities accordingly.	? Number of toilets built Target: 4 (one per market)	The market territorial analysis carried out during the PPG phase has shown that women are proportionally better represented in fruit and vegetables values chain. However, women are the most affected by a lack of access to sanitation facilities. The construction of public toilets will guarantee a better access for women to local markets.
Output 3.2: In connection with the Centre d?Appui ? la Microfinance et au D?veloppement (CAMIDE), innovative financial mechanisms set up to leverage funding and facilitate investments in support of an agro-ecological transition.		Micro-?nance initiatives are often identi?ed as an effective tool for women to participate in income generation activities and women?s empowerment. Thence, the Benso Jamanu microfinance network developed through the project will target especially women as beneficiaries. Moreover, the project will implement a gender-transformative approach, namely the Yeredeme groups for rural women?s empowerment, institution building and livelihood development.

? Activity 3.2.2: Develop terms of references for the implementation of AVECs through the Benso Jamanu network in partnership with CAMIDE.	Gender aspects integrated in ToRs	? Ensure gender aspects are fully included in the ToRs of microfinance implementation, which will provide a basis for the systematic mainstreaming of gender aspects into microfinance activities and will guarantee that women are the first beneficiaries of these activities. ? Experience from other local projects of microfinance inclined to facilitate access to finance for women will be capitalised.
? Activity 3.2.3: Develop terms of references for the implementation of Yeredeme groups in connection with APFSs (Output 2.3) and Dimitra clubs / CECs (Output 2.2) in partnership with CAMIDE.	Gender aspects integrated in ToRs	
? Activity 3.2.4: Sign LoAs with CAMIDE and other partners ? as needed ? to implement the terms of references developed under Activities 3.2.2 and 3.2.3.	Women represent at least 50% of beneficiaries of the Benso Jamanu microfinance network in the target communes	
Output 3.3: Participatory certification systems elaborated in partnership with the private sector, civil society and international sustainability certification initiatives to facilitate access to markets	Women represent at least 50% of producers whose products are certified.	
Output 3.4: The Junior Farmer Field and Life School approach implemented to catalyse innovation in support of an agroecological transition and restore the attractivity of the agricultural sector.		To develop gender sensitive Junior Farmer Field and Life School approach, the project will develop a gender- inclusive strategy at the beginning of the following activities. The best practices from past and ongoing JFFLS projects in terms of women?s mobilisation will be gathered, and will inform this strategy.
? Activity 3.4.1: Conduct a detailed mapping and analysis of relevant programmes and investments underway in Mali, including their target groups (e.g. youth 15-40; young adolescents 15-17) and strategies adopted	Integration of gender aspects into the mapping and analysis of relevant programmes and investments underway in Mali for young people in rural areas	To include gender aspects into this activity, the project will set a list of programmes and investments underway in Mali focusing on young women in rural areas.
? Activity 3.4.2: Carry out a rapid analysis of agricultural sectors, including in terms of farmers' organisations, to identify and evaluate the value chains that are more attractive to rural youth and that offer the best market opportunities.	Integration of gender aspects into the analysis of agricultural sectors with sex-disaggregated data	To include gender aspects into this activity, the project will describe women?s participation in each value chain identified and lead a prospective analysis of actions that might be undertaken to improve this participation.

? Activity 3.4.3: Based on the assessments produced trough Activities 3.4.1 and 3.4.2, develop and implement JFFLS curricula tailored to the Di?ma and Kita circles, including the use of digital tools for agroecological farms.	? Integration of gender aspects into JFFLS curricula ? At least 50% of JFFLS participants are young women	? Ensure gender aspects are fully included in the ToRs of the JFFLS curricula, which will provide a basis for the systematic mainstreaming of gender aspects into JFFLS activities ? Provide women with an enabling space to express their viewpoints without fears of being confronted ? Ensure the participation of grassroots women living in remote agropastoral communities, including through the use of ICTs to overcome any budget or security-related challenges facing the participation of women in decision making.
? Activity 3.4.4: Accompany young people trained in JFFLS through established Public Private Partnerships (PPP) by facilitating their access to markets and productive resources in collaboration with national partners	At least 50% of participants or beneficiaries are young women	
? Activity 3.4.5 Organise participatory workshops to identify a mechanism to facilitate the allocation of land to organised groups of young women and men with agricultural projects.		
? Activity 3.4.6: Organise exchange visits and study tours for youths within the country or to other countries in the sub-region.		
? Activity 3.4.7: Support and monitor the development of business plans for the promotion of decent employment of young people in agri-food value chains.		
Output 4.1: Project Monitoring, Evaluation & Learning plan developed and implemented	Gender aspects integrated to the monitoring and the evaluation of the project	All the project?s gender aspects will be monitored and evaluated including through the indicators of this Gender Action Plan and as foreseen in the M&E plan.

Output 4.2: A Learning, Outreach & Communication Strategy developed and implemented, including capitalisation of agroecological innovations, coordination and awareness-raising meetings with co-financing partners.	Gender aspects are integrated into the outreach & communication strategy	? The knowledge-sharing strategy will include key messages on gender and systematically address gender dimensions of knowledge management topics. ? The communication strategy will include key findings, benefits, opportunities, or remaining constraints regarding gender mainstreaming into the project. ? Gender aspects will be systematically highlighted in the knowledge shared from the project.
Output 4.3: Project mid-term and final evaluations undertaken	? The gender sensitivity and gender responsiveness of the project will be evaluated in the both evaluations.	The project has developed a set of gender-responsive indicators in order to facilitate the deployment of gender-sensitive activities. These gender-responsive indicators also allow proper monitoring and evaluation of gender mainstreaming and gender benefits of the projects. The assessment of project?s gender dimension will therefore be an important element of both the mid-term review and the independent terminal evaluation.
? Activity 4.3.3: Conduct a terminal TAPE assessment and produce a comparative report (with the baseline assessment) to identify agroecological transition dynamics in the Kayes region.	?1 TAPE assessment taking gender aspects into consideration	TAPE assessments are gender-sensitive. Gender aspects of TAPE assessment will be particularly analysed in the final study with a view to highlight gender-specific aspects of the agroecological transition facilitated by the project.

[1] See also specific work conducted by FAO on this nexus in Yemen (here and here).

[2] Source: review of previous APFSs projects in the Kayes region.

[1] Please refer to GEF Gender Equality Guidelines, Guide to maistreaming gender in FAO's project cycle, GEF Gender Guidelines.

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[51] See also specific work conducted by FAO on this nexus in Yemen (here and here).
[52] Source: review of previous APFSs projects in the Kayes region.

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. Private sector involvement will be key to the success of the project?s interventions, and to scale up its impacts. The project will contribute to the generation of income for local communities, in particular through the work on specific value chains. This will help secure rural livelihoods, thereby strenthening the resilience of local communities.

2. The development of territorial markets is at the core of the intervention strategy of the proposed project. This will be achieved by: i) partnering with micro-credit organisations (e.g. CAMIDE) to support access to loans so that private agripreneurs (including women and youth) can develop sustainable businesses (Outputs 3.3 & 3.4); ii) assisting local businesses and producers? organisations with the design of commercial plans (Output 3.1); and iii) facilitating linkages with markets by supporting certification processes (Output 3.3).

3. As noted in the GEF-7 Programming Directions and reaffirmed in the GEF?s Private Sector Engagement Strategy (2019), ?platforms are vitally needed to bring key actors, including businesses, together to encourage them to transition to sustainable business practices.? The proposed project will establish such platforms under Component 1, with a view to structure discussions on the development of territorial markets among all relevant stakeholders (including producers represented by producers? organisations and /or APFS groups, market intermediaries, such as collectors and resellers, investors and suppliers of agricultural inputs).

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. Risk management is a structured, methodical approach to identifying and managing risks for the achievement of project objectives. The risk management plan will allows stakeholders to manage risks by specifying and monitoring mitigation actions throughout implementation. Part A of this section focuses on external risks to the project and Part B on the identified environmental and social risks from the project.

Section A: Risks to the project

2. The risks identified in relation to the effective execution and sustainability of project activities, including potential social and environmental threats, are related to complexities of implementing landscape approaches, project management and exogenous risks. The main risks identified during the PPG phase are summarised in the table below. In addition, an ?epidemic contingency plan? for the proposed project that further identifies risks but also opportunities in terms of resilience building (?Build Back Better? approach) is presented in Annex M.

Table 18. Main identified risks to the project.

Description of risk	Impact [1]	Probability of occurence3	Mitigation actions	Responsible party

Insecurity in the northern circles of the Kayes region	**H**	**M**	One of the criteria for the selection of target communes has been the possibility to conduct planned activities safely. However, it is possible that the safety situation could deteriorate in some of the pre-selected communes. One of the key measures to address this risk is adapting the selection of target communes within the Kays region if the security situation as to worsen.	PCU, FAO, PSC
Limited national and local capacity for the project effective implementation and limited chances to involve international consultants due to insecurity	**M**	**M**	The risk is only partly under the project control. However, under all components, the proposed project will invest considerable resources in capacity building of regional and local authorities as well as communities to plan, implement and monitor sustainable landscape management. The project implementation will involve a wide range of partners that have significant capacity to ensure achievement and sustainability of the project outcomes.	PCU, FAO
Ethnic and local tensions over the access to water, pastures, forest and other natural resources in the project areas	**H**	**M**	Latent conflicts other use of natural resources between different ethnicities, farmers and herders, local people and outsiders are exacerbated by the over-exploitation and resulting scarcity of these resources. To mitigate these conflicts, the proposed project will invest in the strengthening of CECs for conflict mediation, involve all relevant stakeholders in the development and updating of SLAs and ultimately reduce the opportunities for conflict over access to and use of natural resources.	PCU, local authorities
Low participation in multi-stakeholder platforms	**M**	**L**	The proposed project aims to raise awareness and emphasise the multiple benefits of participating to the regional multistakeholder platform to be established under Component 1. In particular, a focus will be placed on the economic gains to be derived from the strengthening of value chains, for which coordination will be undertaken through the regional platform.	PCU, local authorities, partner CBOs

Climate-induced hazards (based on GCMs used by the IPCC, more frequent El Nino events with increased intensity and frequency of droughts, more significant changes in duration of dry spells between November and March and associated floods, and mean annual temperature increases) and the secondary impacts: increased incidence and intensity of crop pest infestations, increased intensity of heat stress on crops, and loss of water quality and quantity [2]	**H**	**M**	The mitigation of secondary impacts of climate threats are a cornerstone of the project intervention logic. In short, a number of practices are foreseen (crop diversification, extension of resilient crops, soil and water conservation, integrated pest management, etc.) at the plot level, while answers to mitigate impacts are also sought at the landscape level (flood management micro-infrastructure, groundwater rehabilitation infrastructure, etc.). Furthermore, the project will maximize the use of early warning systems and improve access to credit for agricultural activities. Finally, the project will adopt approaches that are already well institutionalized in Mali (the FFS and APFS) to rapidly upscale and outscale practices and therefore facilitate a transition towards more climate resilient food systems in short time frames. Noting the dependency of the agriculture sectors on the natural resource base, climate and the lack of poor communities to cope with natural hazards, a more solid climate risk assessment and mitigation plan will be carried out during the PPG phase.	PCU, APFS master trainers and facilitators
Land tenure	**H**	**M**	Insecure and unclear tenure can undermine incentives for sustainable landscape management and ultimately the supply for supported value chains. The proposed project will work with all stakeholders ? local, national, governmental, non-governmental ? to identify working landscape management strategies.	PCU, local authorities

Local, regional and/or global measures to contain impacts from pandemics (such as Covid-19) and their repercussions hampers the availability of technical expertise, engagement of stakeholders, and mobilisation of financing	**M**	**M**	The project intervention logic considers resilience in a comprehensive way, and therefore addresses food sovereignty, rural poverty and livelihood opportunities. It also makes use of approaches, such as the farmer field school approach, that have proven successful over the past few months, providing extension services despite containment restrictions, and easily and promptly addressing health related concerns so they do not become social, economic and environmental crises. To overcome concerns in mobilising the technical expertise to support project design and implementation, the project will work with the excellent technical expertise available nationally, and prioritise work with locally rooted (CSOs, NGOs, government institutes, extension services, ?) organisations and realities in order to minimise the impacts of limitations on mobility at the national and international level. Technological alternatives to face-to-face consultations will be deployed, securing proper participation and engagement of all relevant stakeholder groups, including women and youth. Government priorities have been defined, and agriculture and livestock are key sectors. It is therefore unlikely that re-orientation of financing is going to materialise in the coming biennium. Still, should it become difficult to secure co-financing, the project will deliver evidence and increase its sensitisation, awareness-raising and capacity development efforts under Component 4 in order to advocate for continued support to green and resilient recovery. **Note: an ?epidemic contingency plan? for the proposed project that further identifies risks but also opportunities in terms of resilience building (?Build Back Better? approach) is presented in Annex M.**	PCU, FAO

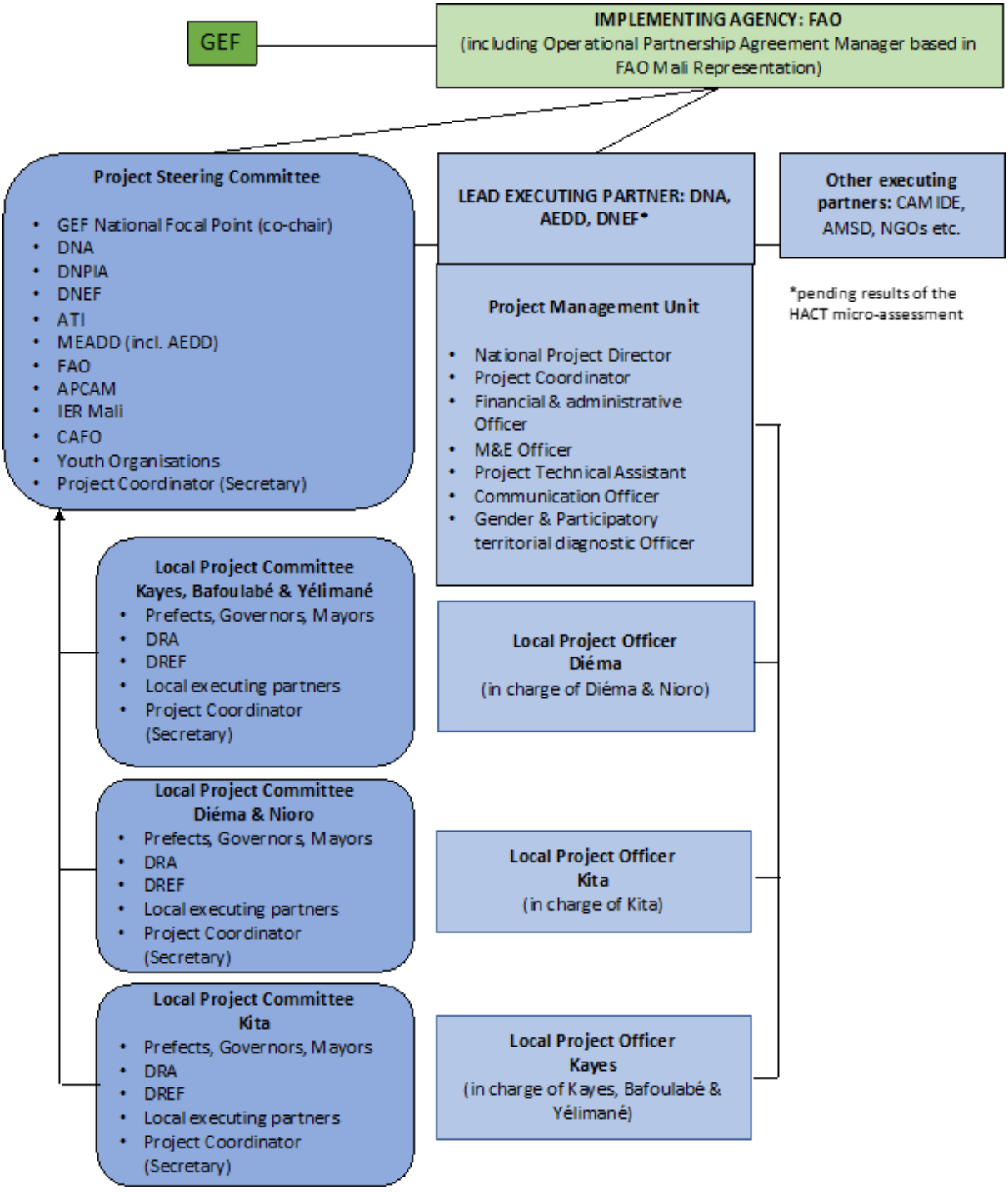
[1] H: High; M: Moderate; L: Low.

[2] Climate Risk and Adaptation Country Profile: Vulnerability, Risk Reduction and Adaptation to Climate Change, April 2011, World Bank

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.

6.a Institutional arrangements for project implementation.



AEDD: Agence de l'Environnement et du Développement Durable
ATI: agence d'Aménagement des Terres et de fourniture de l'eau Irriguée
CAFO: Coordination des Associations et ONG féminines du Mali
DNA: Direction Nationale de l'Agriculture
DNPIA: Direction Nationale des Productions et Industries Animales
DNEF: Direction Nationale des Eaux et Forêts
IER: Institut d'Economie RuraleAPCAM: Assemblée Permanente des Chambres d'Agriculture du Mali

1 The *Lead Executing Partner* (selection to be finalised based on the results onf the ongoing HACT micro-assessment, but either one of the following: DNA, AEDD or DNEF) will have the overall executing and technical responsibility for the project, with FAO providing oversight as GEF Agency as

described below. The *Lead Executing Partner*, will be responsible for the day-to-day management of project results entrusted to it in full compliance with all terms and conditions of the Operational Partnership Agreement signed with FAO. As OP of the project the *Lead Executing Partner* is responsible and accountable to FAO for the timely implementation of the agreed project results, operational oversight of implementation activities, timely reporting, and for effective use of GEF resources for the intended purposes and in line with FAO and GEF policy requirements.

2. The project organisation structure is depicted above.

3. The government will designate a National Project Director (NPD). Hosted by the *Lead Executing Partner* , the NPD will be be responsible for coordinating the activities with all the national bodies related to the different project components, as well as with the project partners. She/he will also be responsible for supervising and guiding the Project Coordinator (see below) on the government policies and priorities.

4. The NPD (or designated person from lead national institution) will chair the Project Steering Committee which will be the main governing body of the project. The PSC will approve Annual Work Plans and Budgets on an yearly basis and will provide strategic guidance to the Project Management Team and to all executing partners. The PSC will be comprised of representatives from DNA, AEDD, DNEF (pending results of HACT micro-assessment). The members of the PSC will each assure the role of a Focal Point for the project in their respective agencies. Hence, the project will have a Focal Point in each concerned institution. As Focal Points in their agency, the concerned PSC members will: (i) technically oversee activities in their sector; (ii) ensure a fluid two-way exchange of information and knowledge between their agency and the project; (iii) facilitate coordination and links between the project activities and the work plan of their agency; and (iv) facilitate the provision of co-financing to the project.

5. Three Local Project Committees will meet twice or once a year in coordination with sessions of the three CROCSADs, with a view to benefit from the presence of CROCSAD members ? most of which will be invited to join the Local Project Committees ? and dynamise CROCSADs, especially newly-established ones in Nioro and Kita. The Local Project Committees will produce minutes that will be transmitted to the PSC.

6. The National Project Coordinator (see below) will be the Secretary to the PSC. The PSC will meet at least twice per year to ensure: i) Oversight and assurance of technical quality of outputs; ii) Close linkages between the project and other ongoing projects and programmes relevant to the project; iii) Timely availability and effectiveness of co-financing support; iv) Sustainability of key project outcomes, including up-scaling and replication; v) Effective coordination of government partner work under this project; vi) Approval of the six-monthly Project Progress and Financial Reports, the Annual Work Plan and Budget; vii) Making by consensus, management decisions when guidance is required by the National Project Coordinator of the PMU.

7. A Project Management Unit (PMU) will be co-funded by the GEF and established within the OP offices in Bamako. The main functions of the PMU, following the guidance of the Project Steering Committee, are to ensure overall efficient management, coordination, implementation and monitoring of the project through the effective implementation of the annual work plans and budgets (AWP/Bs). The PMU will be composed of a National Project Coordinator (NPC) who will work full-time for the project lifetime. In addition, the PMU will include a M&E officer,

communication officer, a gender and participatory territorial diagnostic officer, financial and administrative officer, and three local project officers.

8. The National Project Coordinator (NPC) will be in charge of daily implementation, management, administration and technical supervision of the project, on behalf of the Operational partner and within the framework delineated by the PSC. S/he will be responsible, among others, for:

i) coordination with relevant initiatives;

ii) ensuring a high level of collaboration among participating institutions and organizations at the national and local levels;

iii) ensuring compliance with all OPA provisions during the implementation, including on timely reporting and financial management;

iv) coordination and close monitoring of the implementation of project activities;

v) tracking the project?s progress and ensuring timely delivery of inputs and outputs;

vi) providing technical support and assessing the outputs of the project national consultantshired with GEF funds, as well as the products generated in the implementation of the project,;

vii) approve and manage requests for provision of financial resources using provided format in OPA annexes;

viii) monitoring financial resources and accounting to ensure accuracy and reliability of financial reports;

ix) ensuring timely preparation and submission of requests for funds, financial and progress reports to FAO as per OPA reporting requirements;

x) maintaining documentation and evidence that describes the proper and prudent use of project resources as per OPA provisions, including making available this supporting documentation to FAO and designated auditors when requested;

xi) implementing and managing the project?s monitoring and communications plans;

xii) organizing project workshops and meetings to monitor progress and preparing the Annual Budget and Work Plan;

xiii) submitting the six-monthly Project Progress Reports (PPRs) with the AWP/B to the PSC and FAO;

xiv) preparing the first draft of the Project Implementation Review (PIR);

xv) supporting the organization of the mid-term and final evaluations in close coordination with the FAO Budget Holder and the FAO Independent Office of Evaluation (OED);

xvi) submitting the OP six-monthly technical and financial reports to FAO and facilitate the information exchange between the OP and FAO, if needed;

xvii) inform the PSC and FAO of any delays and difficulties as they arise during the implementation to ensure timely corrective measure and support.

9. The Food and Agriculture Organization (FAO) will be the GEF Implementing Agency (IA) for the Project, providing project cycle management and support services as established in the GEF Policy. As the GEF IA, FAO holds overall accountability and responsibility to the GEF for delivery of the results. In the IA role, FAO will utilize the GEF fees to deploy three different actors within the organization to support the project (see Annex J for details):

? the Budget Holder, which is usually the most decentralized FAO office, will provide oversight of day to day project execution;

? the Lead Technical Officer(s), drawn from across FAO will provide oversight/support to the projects technical work in coordination with government representatives participating in the Project Steering Committee;
? the Funding Liasion Officer(s) within FAO will monitor and support the project cycle to ensure that the project is being carried out and reporting done in accordance with agreed standards and requirements.

10. FAO responsibilities, as GEF agency, will include:
? Administrate funds from GEF in accordance with the rules and procedures of FAO;
? Oversee project implementation in accordance with the project document, work plans, budgets, agreements with co-financiers, Operational Partners Agreement(s)and other rules and procedures of FAO;
? Provide technical guidance to ensure that appropriate technical quality is applied to all activities concerned;
? Conduct at least one supervision mission per year; and
? Reporting to the GEF Secretariat and Evaluation Office, through the annual Project Implementation Review, the Mid Term Review, the Terminal Evaluation and the Project Closure Report on project progress;
? Financial reporting to the GEF Trustee.

11. A part time Operational Partnership Agreement Manager will be hired with Agency fee funds and placed at the FAO Representation. This person will be responsible for delivering training in the areas where the OP needs to improve (as identified by the Capacity Assessment); advise to the OP with preparation of documents, work plans and reports ensuring compliance with FAO requirements and the signed OPA; reviewing the quarterly Request for Funds and Financial Reports that the OP will submit to FAO; checking that the Request for Funds and Financial Reports are in line with the approved AWP/Bs and the Project Results Framework and the conditions of the signed OP for eligibility of expenditures; requesting further information to the OP, if needed; advising the Budget Holder (FAO Representative) on the approval of the Requests for Funds and Financial Reports; Ensure that OP(s) maintains records of supporting documents for each financial transaction to be made available to potential Resource Partners? verifications missions; review and advise the BH on any proposed revisions of an approved plan and budget of the project component implemented by the OP(s); monitor and implement agreed risk mitigation and assurance plan which will include spot checks and audits. Based on findings and recommendation, ensure follow up remedial actions by OPs; prepare amendments to the Operational Partners Agreement, as required.

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[1] It should be noted that the identified Operational Partner(s) or OP, results to be implemented by the OP and budgets to be transferred to the OP are non-binding and may change due to FAO internal partnership and agreement procedures which have not yet been concluded at the time of submission.

6.b Coordination with other relevant GEF-financed projects and other initiatives.

12. Numerous national GEF and non-GEF projects that focus on land management and adaptation to climate change have been or are currently being implemented in Mali. These projects will provide

information on relevant, cost-effective sustainable landscape management interventions as well as lessons learned that can guide the planning and implementation process in the northern and southern landscapes of the Kayes region. The proposed project will focus on collating and synthesizing the lessons learned from past and ongoing relevant projects to inform its design during PPG, when first contacts with all the project management teams will be established. This approach will maximise synergies and avoid duplication of activities. Furthermore, the project foresees exchange on a continuous basis with relevant GEF projects and programmes through participation in a working group chaired by the GEF OFP. In this working group, all GEF projects under execution inform the partnership on project progress and lessons. This working group will meet on a biannual basis. These exchanges can furthermore lead into joint missions and alignment of workplans and activities, particularly with projects GEFID 9293 and 5746. Coordination with projects and programmes not financed by the GEF will be assured through participation of the respective project teams (as observers) in the project steering committees. The most relevant initiatives are described below.

13. Scaling up a Multiple Benefits Approach to Enhance Resilience in Agro- and Forest Landscapes of Mali?s Sahel Regions (Kayes, Koulikoro and S?gou): This GEF Trust Fund-funded project is implemented by the African Development Bank; it is comprised of three components, for a total GEF financing of USD 8.6 million. Component 1 seeks to promote integrated landscape planning and management, including through the development of integrated landscape management plans in at least three circles. Component 2 will assist with the implementation of the plans developed for the target districts and provide technical assistance for a range of sustainable land management activities, including: i) climate-smart agro-sylvo-pastoral practices; ii) improved management for forested areas; and iii) improved waste management (compost production). Component 3 will consist in project monitoring, documentation of lessons learned and knowledge management. Throughout the project, a strong focus will be placed on waste management. During the PPG phase, the proposed project will coordinate with this project to identify the target communes of intervention, with a view to avoid any duplication of efforts. Synergies will also be sought in the development of landscape management plans, as the same regional staff (for the Kayes region) will be involved in their development and in the design of landscape management under Component 2 of the proposed project. Capacity-building activities conducted under the GEF TF-African Development Bank (AfDB) project will thus directly contribute to create an enabling environment for the implementation of the proposed project. Of particular relevance will be Outputs 3.1.1 (?Tools for spatial planning: landscape-level economic, social and ecological assessments; open access mapping; etc. to assess multi-functionality as basis for generating land-use plans?), 3.2.2 (?Knowledge management for lessons learned from an applied landscape approach disseminated at various scales?) and 3.3.1 (?A framework developed for effective monitoring and adaptive management of the land use plans, including delineation of roles among key stakeholders?).

14. The UNDP-GEF project ?**Climate security and sustainable management of natural resources in the central regions of Mali for peacebuilding**? (USD 7.5 million) is under preparation and will intervene in the Mopti region. Although the intervention areas and agro-climatic zones of the two projects will not overlap, coordination will be sought with UNDP and AEDD to maximise synergies between national-level expected outputs, especially LDN-related capacity building (Output 1.1 of UNDP-GEF project) and capacity building to conduct climate change vulnerability and environmental impact assessments at the landscape level as well

monitoring of climate change resilience, land and biodiversity use and conservation (Outputs 1.3 & 1.4 of FAO-GEF project).

15. **Programme d?Appui au D?veloppement Durable de Y?liman? (PADDY, Phase-II**): The Support Programme for the Sustainable Development of Y?liman? saw its first phase terminate in 2009. Co-funded by the City of Montreuil (France), the Veolia Foundation and the City of Y?liman?, PADDY invested approx. EUR 340,000 to refurbish the existing water network and extend it to three villages around the City of Y?liman?, bringing drinkable water to over 30,000 people. The interventions also included capacity building, enabling users? associations to operate and maintain the system by themselves, including in terms of financial and administrative management. Phase II of the programme is currently under development, and will focus on food safety (esp. through self-sufficiency in cereals) and poverty reduction in the Y?liman? circle. This will be done by building the capacity of cultivators as well as local staff from the technical and administrative offices at the region, circle and target communes. A focus will be placed on financial savviness and access to funding. The budget is anticipated to be approx. USD 10 million. The proposed project will coordinate with phase II of PADDY to target other communes in the Y?liman? circle, complement capacity-building activities and replicate successful ones in target circles. It will also benefit from the improved capacity and awareness of technical and administrative staff in extension offices at the region and circle levels.

16. **Projet de D?veloppement Rural du Kaarta/Sefeto (PDRKS):** The Project for the Rural Development of Kaarta/Sefeto is embedded within the National Investment Plan in the Agricultural Sector, and seeks to tackle chronic food insecurity in the northwestern part of the Kita circle. This situation is the result of widespread poverty, limited development of productive systems, low agricultural productivity and remoteness of the area. PDRKS addresses these challenges by supporting the development of 1,396 ha of arable land, building 38km of dirt road between K?ni?nif? and S?feto, improving the access to drinkable water and facilitating the access to short-term credits. The proposed project will build on these interventions to further disseminate climate-smart agricultural techniques in northwestern Kita and support the development of selected value chains by leveraging the potential of improved access to loan finance and better access to the area. The financing of PDRKS is currently being finalised; its anticipated budget is approx. USD 51 million.

17. **Green Innovation Centres for the Agriculture and Food Sector (GIC):** This global programme, commissioned by the German Federal Ministry for Economic Cooperation and Development (BMZ) and implemented by the German Cooperation Agency (GIZ) in 15 developing countries across Africa and in India (2014 ? 2023), seeks to promote innovations in the agriculture and food sector to increase the incomes of small farming enterprises, boost employment and improve food supply in the rural target regions. The Green Innovation Centres support the expansion of innovations by providing advisory services, organizing educational and training courses, and facilitating access to loans. These innovations include mechanization within agriculture or improved seeds, fertilizers and food cooling chains. In many cases, they focus on new channels for cooperation, such as setting up producer associations, specialized enterprises or interest groups. In Mali, the Innovation Centre advises farmers on the use of innovations in irrigation farming. For example, around 7,500 farmers have received training in the resource-conserving ?System of Rice Intensification (SRI)? method, which reduces seed use by up to 80% and water consumption by up to 35% compared with traditional cultivation methods. Three circles in the northern landscape of the Kayes region[1] have received support through the programme,

for a total budget of approx. EUR 700,000. In the Kayes region, interventions have focused on disseminating efficient practices for the rice culture and horticulture, as well as post-harvest storage and marketing (linking producers and sellers). The proposed project will build on the GIC programme by: i) disseminating the agricultural practices that have proven efficient; ii) complementing them with support to other cultures; iii) further strengthening the value chains, especially to facilitate the access to credits and enter cross-border markets; iv) and capitalise on capacity-building activities to lay the basis of the Agricultural Youth Incubators.

18. **Rural Youth Vocational Training, Employment and Entrepreneurship Support Project:** At a total cost of approximately USD 52 million (funded by IFAD), the Rural Youth Vocational Training, Employment and Entrepreneurship Support Project (Formation professionnelle, Insertion et appui ? l?Entreprenariat des jeunes Ruraux, FIER) targets young rural women and men and aims to empower them by facilitating their access to economic and employment opportunities in the agricultural sector. The FIER project supports vocational training and facilitates the financing of income-generating agricultural activities proposed by young rural entrepreneurs. During the project's implementation period (2014-2022), 100,000 young rural people are due to benefit from vocational training, some 15,000 income-generating activities set up by young rural entrepreneurs aged between 18 and 40 will be created and financed, and 5,000 young rural people will have better employment prospects. Originally implemented by the Ministry of Employment and Vocational Training (Minist?re de l?emploi et de la formation professionnelle) in Sikasso and Koulikoro, the FIER project was then extended to Kayes and S?gou. The proposed GEF project will build on lessons learned from the FIER project for the aspects related to the training of young agripreneurs (Output 3.4). This includes information presented in the mid-term review of FIER[2].

19. **Programme for the promotion of agroecological cropping systems and soil protection in Mali:** this programme under preparation will be funded by the German cooperation and executed by DNA (2022-2026; USD 17.7 million). It will intervene in the Kayes region (as well as Koulikoro and Sikasso) to implement an agroecology approach similar to that of the proposed project. Its expected results (to be confirmed) will be: i) the institutions responsible for the implementation of the programme (DNA promoter, other public services involved, NGOs, private companies, village structures) have developed knowledge of agroecological and soil and water conservation approaches and are able to apply them on the basis of an integrated participatory approach; ii) varioous measures for local knowledge transfer have a sustainable impact; iii) the supply of inputs for ecological production (quality seeds of improved/adapted varieties, organic manure/natural fertiliser, biopesticides, etc.) to family farms is improved; and iv) soil and water conservation and agroforestry measures are implemented and the basis for their management and maintenance is created. Given the evident opportunities for synergy between these two initiatives, specific coordination will be sought in the inception phase of the proposed project, with a view to inform the final formulation of the German cooperation-DNA project.

20. **Strengthening integrated approaches to build the climate resilience of vulnerable rural communities and agricultural production systems in the central regions of Segou in the Republic of Mali**: this LDCF project (USD 3.6 million, PIF to be approved), to be implemented by IFAD and executed by AEDD, will aim 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-sylvo-pastoral and fish farming practices. Lessons learned will be shared, in particular on APFS (Output 2.3 of the IFAD project) and development of land-use plans (Output 1.2). All

relevant information and knowledge generated by the FAO-GEF-LDCF project will be made available IFAD and AEDD during the PPG phase of the IFAD-LDCF project.

[1] Namely Y?liman?, Nioro du Sahel and Di?ma.

[2] Available here.

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. In addition to national priorities described in Section 1.I.A, the proposed project will contribute to Mali?s objectives set out in several strategic documents, as synthesised below.

2. **National Adaptation Programme of Action (NAPA) and National Adaptation Plan (NAP)** Process: Mali?s NAPA was submitted in 2007. Amongst the prioritised adaptation actions that will be supported by the proposed projects are: i) the adoption of climate-resilient varieties in agriculture; ii) the use of climate-smart agricultural techniques; iii) the strengthening of the innovation potential in the agricultural sector, in particular with women and the youth; and iv) fodder production. The NAP process was initiated in early 2014, and the Agence de l?Environnement et du D?veloppement Durable (AEDD) has been receiving support to ensure the proper representation of smallholder climate change adaptation needs in the NAP process. To ensure coherence with this NAP process, amongst other things, the AEDD is proposed to be a member of the Project Steering Committee of the FAO-GEF project, aligning activities and outputs to the NAP process. It should be noted that the AEDD is the National Designated Authority for the Green Climate Fund, and, as such, is ideally placed to help identify any potential synergies and/or risks of duplication between the proposed project and ongoing or future GCF projects in Mali.

3. **United Nations Framework Convention on Climate Change National Determined Contribution**: Mali submitted its Nationally Determined Contribution (NDC) under the UNFCCC in 2016. It includes a Greenhouse Gases (GHG) emission reduction target of -29% for the agricultural sector and -21% for land-use change and forestry. Specific avenues for reducing emissions include Assisted Natural Regeneration, measures to combat sand encroachment and strengthening of protected areas (over a total of 9 million ha), reforestation (325,000 ha), development of climate-smart agriculture (hydro-agricultural improvements on 92,000 ha), and realization of 3,300 km of transhumance routes and 400,000 ha of rangelands. The proposed project will contribute to these objectives through its Component 2. In terms of adaptation, the proposed project will contribute to several of Mali?s priorities set out in the NDC, and further reaffirmed in the ?Adaptation strategy for the agricultural sector, including small-scale agriculture 2019-2023?[1], as described below.

[1] AEDD. 2018. Strat?gie d?adaptation aux changements climatiques du secteur de l?agriculture notamment la petite agriculture 2019-2023.

Table 19. Contribution to Mali?s adaptation priorities set out in the NDC.

Adaptation priority (NDC)	Project contribution
Forest management for the restoration of degraded ecosystems to reforest 325,000 ha, promote assisted natural regeneration and the fight against silting and strengthen the protection of protected areas over 9 million hectares	Overall, 40,000 ha of vegetated area ? forests, grassland, cropland, shrubs ? will benefit from improved land cover as a direct impact of project interventions. In addition, landscape management plans integrating LDN measures will be developed, covering 160,000 ha in the three prioritised climatic zones (Output 2.1).
Development of intelligent and climate change resilient agriculture, for the hydro-agricultural development of 92,000 ha in the context of sustainable land management with the commitment of the State to devote 15% of the national budget to agriculture	Climate-resilient agriculture ? a key component of the agroecological transition ? will be fostered through Output 2.3 of the proposed project, as 15,000 agro-sylvo-pastoral producers participate in APFS and at least 40,000 additional producers from neighbouring communities will be trained through exposure visits to APFS and exchange with participating farmers. Overall, 10,000 ha will benefit from climate-resilient management[1] with efficient water management techniques (e.g. zai).
Rainwater harvesting and storage to contribute to universal access to drinking water and access to water for other uses, through the creation of 20 drinking water supply systems and 200 surface water catchments and surface water bodies for the benefit of 75,000 rural households (men and women). water supply systems and 200 surface water catchment structures and surface water bodies for the benefit of 75,000 rural households (men and women)	Although rainwater harvesting per se has not been selected as a prioritised project intervention, water management will be part of the improved, climate-resilient practices that will be planned for and disseminated through Component 2 of the proposed project. In addition, solar-powered irrigation systems will be implemented to support small-scale agriculture.
Climate change resilient pastoral development aiming at the materialisation of 3,300 km of transhumance routes to reduce conflicts between farmers and herders, the creation of 21 pastoral areas and perimeters with a total surface area of 400,000 ha	Under Output 2.1, at least 22 inter-communal and six inter-circle pastoral conventions will be reviewed, revised as required and supported for their implementation. This may include the materialization of transhumance routes and creation of pastoral areas. In addition, farmer-herder conflicts will be reduced through the implementation of Community Listening Groups (Output 2.2), and best practices for rangeland management will be disseminated under Output 2.3.

[1] Areas under climate-resilient management refers to land where improved agroecological practices will be implemented as a result of APFS training.

4. **UNFCCC National Communications (NC):** Mali submitted its Third NC to the UNFCCC in 2018. The proposed project will contribute to the objective of reduction of GHG emissions in the agricultural sector by 9,759 kT CO2-eq in 2025, and to the objective of increase of carbon sequestration in the Land Use, Land-Use Change and Forestry (LULUCF) sector by 21% in 2030. In terms of adaptation, the following prioritized actions will be supported by the proposed project:

i) Assisted Natural Regenation for deforested areas; ii) livelihood diversification in rural areas to desincentivize rural communities to harvest and sell fuelwood; iii) participatory elaboration of landscape management plans at the local level; iv) restoration of degraded soil; and v) production of fodder. In July 2020, Mali received support from the GEF to prepare its Fourth NC, with the technical assistance of UNDP. This process will be executed by the AEDD; synergies will be sought between this project and the NC preparation process, especially in terms of information sharing. In particular, opportunities for the Fourth NC to reflect the anticipated adaptation benefits of the agroecological transition supported by the proposed will be discussed with the AEDD, as relevant.

5. **UNFCCC Technology Needs Assessment (TNA) for adaptation and mitigation**: Mali submitted its Second TNAs for adaptation and mitigation to the UNFCCC in 2012. In terms of adaptation, the proposed project will contribute to cover some of the technology needs in the agricultural sector, namely: i) fodder culture practices; ii) land management to prevent erosion due to runoff; and iii) adoption of climate-resilient crops. In terms of mitigation, relevant objectives are: i) reduction in the use of chemical fertilizers and increased use of compost; ii) increased use of improved cookstoves; iii) decrease in land use changes, from forest to pastures and agicultural fields; and iv) reforestation.

6. **National Biodiversity Strategy and Action Plan (NBSAP**): Through its engagement in the Convention on Biological Diversity (CBD), Mali has committed in its revised National Biodiversity Strategy and Action Plan (2014) to reduce by half the pace of degradation and thinning out of natural habitats, including forests, by 2020 (Objective 5). In addition, the proposed project will contribute to several of the NBSAP?s other objectives through its Component 2, including:

? Objective 1: Malians, including decision-makers, women and youth at the local level, are aware of the value of biological diversity, the risks it faces and the measures to be taken for its conservation and sustainable use;
? Objective 2: biodiversity values are integrated into sectoral development plans, strategies and policies and into development planning at the national, regional and local levels as well as in the poverty reduction strategy;
? Objective 4: the government, civil society and business actors take action to ensure sustainable production and consumption and keep the impacts of natural resource use within safe ecological limits;
? Objective 13: ecosystems that provide essential services are restored and safeguarded, taking into account the needs of women, local communities and poor and vulnerable populations;
? Objective 14: ecosystem resilience is enhanced through climate change adaptation and mitigation measures as well as measures to combat desertification; and
? Objective 19: funding mechanisms, with a view to increasing funding for biodiversity conservation activities, are put in place and financial resources are sufficiently mobilised.

7. **CBD National Report**: Mali submitted its sixth National Report to the CBD in 2018. Among the prioritised actions towards which the proposed project will contribute is the protection of the Bafing chimpanzee?s sanctuary located in and around the Manantali watershed. The Bafing sanctuary will benefit from project interventions in its buffer zones. In addition, the proposed project will work towards a greater awareness from local authorities and communities on the importance of preserving biological diversity.

8. Mali published its **Drought National Plan** 2021-2025 in 2020. The proposed project aligns with several of the recommended actions set forth in this Plan, including:

? Action 6: develop resilience projects for vulnerable groups (women and people with disabilities);

? Action 8: involve women in decision making and management of drought programs and projects;

? Action 16: disseminate resilient technologies to rural producers, including women;

? Action 18: encourage plantations of fast-growing tree species for domestic use;

? Actions 20 & 30: encouraging the practice of resilient rural production (agroforestry, livestock, fishing);

? Action 25: implement runoff reduction activities that promote the infiltration of water into the soil; and

? Action 28: promoting sustainable and resilient agriculture.

9. **United Nations Convention to Combat Desertification (UNCCD) National Action Program**: Mali has established a National Action Program in the context of the UNCCD (2000). The proposed project will contribute to several of its national objectives, including: i) enhancing stakeholder?s capacity to manage natural resources; ii) protecting forested areas by promoting the sustainable use of fuelwood; iii) improving the sustainable management of drinking and irrigation water resources. The project will also contribute to some of the specific objectives for the Kayes region: i) raising awareness on the importance to fight land degradation; and ii) incentivizing communities to adopt sustainable agricultural practices and technologies, both traditional and modern. In the context of Mali?s engagement with the UNCCD, the country adopted Land Degradation Neutrality (LDN) targets[1] in February 2020. Specific contributions from the proposed project towards LDN targets are described in the table below. It should be noted that the Sahelian, Pre-Guinean and Sudanian zones ? which are the three zones covered by the project target area ? are cited in Mali?s LDN target-setting report as prioritised areas for LDN implementation.

[1] GoM. February 2020. Programme de d?finition des cibles nationales de la Neutralit? de d?gradation des Terres. Rapport National NDT Mali

10. Mali has committed to implement all the **Sustainable Development Goals**, with an emphasis[2] on SDGs 16, 9, 2, 8, 15, 3, 4, 6, 7, 11, 5 and 17 (by order of priority). The proposed project will directly contribute to SDG targets 8.2, 8.3, 8.6, 8.10, 15.1, 15.2, 15.3, 15.5, 15.9, 3.3, 4.4, 4.7, 6.4, 5.5 and 17.6.

[1] GoM. February 2020. Programme de d?finition des cibles nationales de la Neutralit? de d?gradation des Terres. Rapport National NDT Mali

[2] GoM. 2016. Identification et op?rationnalisation des priorit?s de d?veloppement durable du Mali.

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. Internally, the knowledge management approach will focus on information sharing, regular dialogue at all levels and the dissemination of documents. Externally, it will focus on the dissemination of information to partners (government, civil society, etc.) and to beneficiaries. Appropriate channels of communication (technical guidelines, radio, posters, brochures etc.) will be used to target specific stakeholders. This will include international platforms such as the upcoming FAO Regional Technical Platform for Africa and the Global Farmer Field School Platform.

2. Supervision and monitoring missions will be organised during project implementation. A framework for gender-sensitive Monitoring & Evaluation (M&E) will be developed before implementation starts to identify relevant indicators and procedure for feedback and reporting. Special emphasis will be laid on targeting the most relevant parameters that can be examined and collected internally. The information collected in the context of M&E will feed into activities for knowledge management, identify and share good practices, identify problems and constraints, and promote the continuous improvement of the project and its contribution to the implementation of national and regional objectives on food security and environmental protection.

3. Throughout the PPG phase, special attention has been given to incorporate lessons learned from past relevant projects into this projet?s design. In particular, the tables below identify how key lessons learned and recommendations from the Terminal Evaluation of relevant GEF-funded projects in Mali have been taken into account.

Table 22. Capitalisation on key lessons learned and recommendations from the Terminal Evaluation of FAO-GEF project #4822[111] ?Strengthening Resilience to Climate Change through Integrated Agricultural and Pastoral Management in the Sahelian zone in the Framework of the Sustainable Land Management Approach?.

Key lessons learned & recommendations	Capitalisation in proposed project
Main successes	
The APFS approach differs from the previous Farmer Field Schools (FFS) approach in that it focuses on a strong integration between agriculture and livestock, with most of the targeted stakeholders being both farmers and breeders. It therefore has a clear comparative advantage.	The same approach has been taken throughout the PPG phase and will be implemented during project execution.
The setting up of 121 APFS has fostered regrouping in all the villages targeted by the project. In the majority of villages, conflicts between farmers and breeders related to the management of agro-pastoral resources are mostly resolved by APFS	APFSs to be established by the project are expected to have similar positive impacts on conflict reduction. In addition, specific dispositions will be taken to directly facilitate conflict resolution, including the creation of Dimitra listening groups (Output 2.2).
The project has provided women with access to innovative CCA practices to improve their incomes. For example, VSLAs have helped to mobilise significant credit funds to finance development activities for women and men in APFS according to some APFS members. 42 VSLAs mobilised 1,187 members, 914 of whom were women (77 percent).	The project adopts a strengthened, gender-responsive approach. For example, the choice of value chains to be supported under Component 3 (e.g. horticulture and neem seed oil) was directly influenced by the will to specifically support women. See also Section 3.

Small-scale mining (a risk that was not taken into account in the project design), particularly in the Kita district bordering Kenie?ba district, is increasing to the detriment of all development initiatives in mining areas. The establishment of APFS has, however, promoted the dissemination of know-how and livelihood opportunities and in some cases diverted young people and women away from mining areas, as in the case of two young people we met who converted to (improved traditional) beekeeping and cuniculture.	Land-use planning to be developed and support to be brought to agroecology practices are expected to decrease the attractivity of mining activities, in particular for women and youths. In particular, specific activities will be dedicated to create sustainable opportunities for youths (Output 3.4).
Sustainability risks	
The financial factor and the insecurity of the project intervention area are the two main risks for the sustainability of the project. However, these risks can be minimised by building the capacity of agro-pastoralists on resilient practices that are within their reach. In addition, the networking of stakeholders through a functional WhatsApp link, and the Village Savings and Loan Associations which have been set up, are elements that strengthen the resilience of agro-pastoralists and render their achievements sustainable.	The same approach is followed by the proposed project. Access to finance will be strengthened through the development of he Benso Jamanu network of Caisses de R?silience, and financial literacy training will be provided. Although insecurity risks are largely beyong the project?s control, the proposed interventions will contribute to reduce the risks of conflicts over natural resources and improve the capacity of local stakeholders to resolve such conflicts, thereby contributing to create conditions for improved security in the target circles.
The diversification of activities through agro-pastoral practices aimed at rehabilitating ecosystems, is an important factor in promoting adaptation. However, land tenure remains a problem in the intervention area. The weak capacities of the beneficiaries in terms of good governance represent a high risk for the sustainability of the achievements	Land-use planning and governance will be strengthened under Component 1.
Execution & implementation	
The project has faced a number of institutional difficulties, including the question of its anchoring or its attachment to ESDA, which caused a seven-month blockage, and the departure of some project staff. These difficulties had an impact on progress towards the project's mid-term outcomes.	All measures will be taken to ensure an efficient financial management of the project. The capacities of the execution partner in this respect were satisfactorily evaluated during the PPG phase.
Project design	
The main weakness observed concerns the lack of consideration of agro-pastoral product processing and/or conservation, which not only increase productivity but also give more added value to the processed products.	This has been incorporated into the APFS curricula.
Recommendation 1 (to FAO and ESDA, with high importance). **Advocate for the institutionalisation of the APFS approach.** In order to address the uncertain stability of stakeholders within certain structures, the project has to seek the institutionalisation of the APFS approach from the Ministry of Agriculture	The APFS approach will be further upscaled through this project.

Recommendation 2 (to national structures [DNA, DNPIA], FAO, with high importance). **Build the capacities of VSLA members.** The staff of these VSLAs needs to be more structured and trained to promote effective and efficient governance of resources in order to ensure their sustainability. Some members need to be trained in simplified bookkeeping and financial statements.	The capacity of VSLA / AVEC members will be strengthened (Component 3).
Recommendation 5 (to the Project Team, FAO, GEF and ESDA, with moderate importance). **Draw lessons from the weakness and difficulties in mobilising co-financing** to avoid this happening again in future projects involving co-financing.	Extensive consultations with co-financing partners have been conducted during the PPG phase to ensure that prospective partners are fully aware of what cofinancing entails. In addition, a co-financing partners group will be established under Component 4, and frequent meetings will be organised to foster technical cooperation beyond financial aspects.
Recommendation 6 (to FAO, national structures [DNA, DNPIA, Mali Meteorological Agency, IER], with high importance). **Consolidate project achievements such as the transformation of APFS into cooperatives and cooperative union, and contribute to their scaling up with the new GEF project in the Kayes region.** This complementary programme must also provide for the centralisation and dissemination of good agro-pastoral practices, in particular through the implementation of a small-scale programme.	The proposed project is the materialisation of this recommendation.
Mainstreaming of gender and specific social contexts	
The lack of a specific analysis differentiated according to the socio-economic and socio-environmental realities of the three districts selected as the project intervention area, has resulted in a global planning model that is not gender-specific and often inadequate in relation to the practical and strategic needs of the project's female and male beneficiaries.	The gender analysis of the proposed project takes into account the specificities of the target circles in terms of the situation of women.
However, gender mainstreaming is insufficiently analysed in the project document in the sections dealing with the assessment and justification of the project feasibility. Indeed, the relevance analysis does not take into account women's vulnerability to climate change and its consequences on the project's resilience and adaptation activities. Furthermore, no reference is made to social discrimination and the unequal access of women pastoralists and agro-pastoralists to productive resources, which limit their equitable participation in achieving the objectives of APFS.	Significant efforts have been made to develop a fully-fledged gender analysis (Section 3) and associated Gender Action Plan.
The implementation of water and soil conservation practices (Zai?, half-moon ...) by women requires specific support to ensure access to additional labour for this hard and exhausting work.	This has been taken into account in the GAP. A Vallerani system will be acquired to mechanise half-moons.

Table 23. Capitalisation on key lessons learned and recommendations from the Terminal Evaluation of UNDP-GEF (LDCF) project #3776 ?Enhancing Adaptive Capacity and Resilience to Climate Change in the Agriculture Sector in Mali?[2].

Key lessons learned & recommendations	Capitalisation in proposed project
The appropriation and perpetuation of climate change considerations through their inclusion in the communes' PDSECs has also enabled communal elected officials to have a better visibility on the actions to be undertaken in terms of the choice of specific measures and their respective costs.	Under Output 2.1 of the proposed project, at least 22 integrated sustainable landscape management plans (SCATs) and 17 PDSECs will be developed by COFOs and relevant bodies for demonstration sites, addressing agro-sylvo-pastoral food system adaptation priorities, and facilitating sustainable production intensification, and sustainable use and conservation of land and biodiversity.
Beneficiary ownership of project interventions was facilitated through the participatory approach in the analysis of future climate change impacts and the identification of adaptation and resilience building measures.	The APFS approach to be implemented under Output 2.3 is participatory by essence, as the menu of best adaptation practices to be disseminated will be demand-driven and collectively elaborated with beneficiaries (Activity 2.3.7).
The strengthening of the capacities of communal decision-making bodies, in particular through the creation and support for the functioning of the Comit?s Consultatifs Communaux (CCC), has been an experience that has made it possible to mobilise both the elected representatives and the agents of the deconcentrated technical services for better planning and concerted implementation of the various actions to demonstrate adaptation measures.	The CCCs were local consultation committees created *ex-nihilo* by the UNDP-GEF project to support the local coordination of commune-level project activities. While the proposed project will fully support the participatory coordination of activities at the local level (e.g. through CECs), it was decided not to create new consultative bodies that are not already planned for by the Malian legislation, of *de facto* already existing in the target circles. This is to avoid duplication of bodies, limit meeting fatigue and contribute to streamline local governance. As a result, the proposed project will rather support the strengthening of COFOs and CECs than create new CCCs.
A thorough baseline assessment should be undertaken at the start of each large-scale project. Without an understanding of the socio-economic conditions prevailing prior to the implementation of a project, it is rather difficult to determine the actual impacts of a project. It is important to ensure that, at the PPG stage, sufficient funds are allocated to undertake a rigorous baseline assessment. A baseline assessment should not be based on secondary data, but should include a mix of primary and secondary data.	The extensive baseline studies (TAPE, CMT) conducted during the PPG phase with primary data collection have enabled to build the project intervention strategy on a comprehensive understanding of the baseline situation with respect to climate adaption practices, agroecology and the development of territorial markets.

With regard to the M&E system implemented, the Results Framework should be well thought out, coherent and aligned with the SMART criteria. An analysis of the results framework should be undertaken at the start of the project as a matter of priority. A robust M&E plan should be developed at the outset of the project and validated with the project Project Steering Committee. Ideally, the M&E plan should specify the different indicators, measurement methods, means of verification, methodology to be used and reporting requirements. All these elements lead to the implementation of a sound M&E system.	All indicators embedded in the Results-Based Framework are SMART. Under Activity 4.1.1, the MEL plan will be co-develop with additional indicators, tools and the monitoring strategy for the project?s activities, including roles and responsibilities as well as a timeline and budget.
According to the ProDoc, the Project Steering Committee was supposed to meet twice a year. However, they only met once a year. It is important that the PSC meets frequently, or at least as foreseen in the ProDoc, in order to take high-level decisions. The PSC has a well-defined purpose and should have fulfilled the requirements specified in the ProDoc to provide support to the Project Management Unit and ensure the smooth running of the project.	The PSC will meet in person once a year to maximize cost efficiency. However, additional virtual (no-cost) PSC meetings can be held virtually as needs arise.

Table 24. Capitalisation on key lessons learned and recommendations from the Terminal Evaluation of FAO-GEF (LDCF) project #3979 ?Integrating Climate Resilience into Agricultural Production for Food Security in Rural Areas?[3].

Key lessons learned & recommendations	Capitalisation in proposed project
The GCP/MLI/033/LDF project has meant that those responsible for partner organizations in the project, as well as third parties, could be well informed about CCA and FFS approaches in order to support the implementation and application of these approaches in the field.	The same approach has been taken throughout the PPG phase and will be implemented during project execution.
Ownership of the project by the country is very satisfactory in technical and operational terms, and moderately satisfactory in political and financial terms.	The OPIM execution modality will enhance financial and political ownership by the country.
Development and training in CCA and FFS approaches are medium- and long-term investments that also benefit from the setting up of many other programmes and projects. The interlocutors of the evaluation team were almost unanimous in stating that there should be a sequel to this well-conceived, well-established and well-coordinated programme.	The same approach will be implemented during project execution.

Considering the importance of the FFS approach for agricultural extension in Mali, FAO and its partners in project GCP/MLI/033/FLA should consider expanding what has been gained from the CCA and FFS approaches, which have been proven on the ground in Mali. These activities deserve to be disseminated to all producers and agricultural producers, through public and private organizations	This recommendation is at the core of the project?s intervention strategy.
In order to support the different frameworks, organizations and networks of facilitators, as well as to ensure the quality of their services in the Field Schools, it is recommended that the FAO, through the Country Office in Mali, as well as through technical support in other offices at regional level and headquarters if necessary, support the National Board of Agriculture in the development and implementation of a multi-year national plan for agricultural extension on the basis of FFS, and that a National Centre for FFS Extension is created.	This was discussed directly with the GoM during the PPG phase. At this stage, and given the current risks associated with institutional instability at the national level, it was collectively decided that most project interventions should focus on the decentralised level.
In the case of projects funded by GEF in francophone countries, the FAO/LFE liaison office should ensure that project teams have access to documents in French (for example, guidelines and procedural documents, follow-up reports, etc.) to allow the projects to report in French as one of the official languages of the United Nations.	Provisions have been made in the project budget to make all key documents available in French (including Mid-Term Review and Terminal Evaluation) for easier dissemination.

Table 25. Capitalisation on key lessons learned and recommendations from the Terminal Evaluation of UNDP-GEF (LDCF) project #5192 ?Strengthening the Resilience of Women Producer Groups and Vulnerable Communities in Mali?[14].

Key lessons learned & recommendations	Capitalisation in proposed project
The formulation of a project should be realistic enough regarding absorptive capacities, procedures and mechanisms for implementation in the national context and the actual needs in time and financial resources.	The proposed project was designed through a participatory approach, including with extensive consultations with both local and national stakeholders. This, combined with the experience of FAO and the PPG team generally in the implementation of relevant initiatives in Mali, made it possible to calibrate the ambition of capacity-building activities, which aim to be wide-reaching but not unrealistic in terms of audience size or technical complexity.
A thorough analysis of the institutional, economic, technical and environmental feasibility of each specific action in a locality is essential for the success of the action.	This was conducted during the PPG phase, and will be further implemented during the implementation of Component 1 activities, which specifically aim to embed project interventions into enhanced local governance for landscape and adaptation management.

Close monitoring of the execution of works by companies is strongly recommended for the realisation of structural works according to the envisaged timetable and in a quality adapted to the realities of the locality.	Although not many such structural work are planned by the proposed project, some market infrastructures will be built under Component 3. To ensure optimal monitoring of this work, specific local supervisor will be recruited (specific budget has been assigned to cover these costs).
Initial management training is insufficient; it is necessary to provide local support in the medium term to ensure that the rural population really takes ownership and absorbs the new knowledge.	The APFS curricula will be implemented over 18 months, specifically to ensure that sustained support can be brought to local communities over several agricultural seasons, thereby improving the ?absorption rate? of shared knowledge.
An effective monitoring system adapted to objectively measure the quality of the project's actions and its effects is crucial for its good management. SMART indicators with clearly defined baselines and targets as well as data collection methods should be developed from the start of the project. The mobilisation of specialised technical assistance at the PMU is appropriate for this crucial phase of strategic planning and project management.	This is planned for in the proposed project: SMART indicators have been incorporated in the Results-Based Framework and an extensive MEL plan will be developed under Activity 4.1.1. A full-time M&E Officer will be recruited at project inception (draft ToRs are presented in Annex U).
Co-financing by other projects is a potential opportunity for strengthening the efforts of a project, but generally not a financial source to be foreseen for the implementation of project activities.	Co-financing arrangements have been extensively discussed with co-financing partners during the PPG phase. All foreseen cofinancing will be in-kind and specific technical coordination opportunities have been identified with CIRAD (cf. Annex S).
The Paris Declaration on Aid Effectiveness is still hypothetical, more efforts are needed to coordinate and create synergies between projects/PTFs for aid to become more effective.	The creation of the co-financing partner coordination group will contribute to this outcome.
Women represent the essential link for activities initiated in rural areas in view of their role in household management, and especially for their involvement in agricultural production and income-generating activities.	The role of women has been fully embraced in the proposed project design. An extensive gender analysis and Gender Action Plan have been developed and informed the project intervention strategy (Section 3).

4. NB: lessons learned from the UNEP-GEF project ?Scaling up and replicating successful sustainable land management and agroforestry practices in the Koulikoro region of Mali? due to terminate soon will also be collected with AEDD at project inception.

5. Significant budget (cf. Annex A2) has been assigned to knowledge-management activities, as summarised in the table below.

Knowledge management activities by output	**Key deliverables**	**Budget USD**	**Year 1**				**Year 2**				**Year 3**				**Year 4**				**Year 5**			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4

Knowledge management activities by output	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Output 1.1: Capacity of at least 22 local landscape committees (COFOs) strengthened to effectively integrate climate change adaptation and vulnerability considerations, as well as land resources use and biodiversity conservation into sustainable landscape management plans.																						
Activity 1.1.1: Amongst the target communes, select at least 11 COFOs in the northern landscape and 11 COFOs in the southern landscape and develop tailored effectiveness barrier assessments (including capacity needs assessment) for each of them.	Barrier assessments	8,110																				
Activity 1.1.2: On the basis of the capacity needs assessment, develop tailored training programmes for each COFO	Training programmes	725																				
Output 1.2: Five multi-stakeholder platforms established at the level of and around territorial markets, in order to effectively engage multiple stakeholders (private sector, CSOs, local administration ?) involved in ASP food systems resilience and sustainable land use and biodiversity conservation planning and investment.																						

Knowledge management activities by output	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Activity 1.2.3: Produce and disseminate an annual stocktaking brief summarising the outcomes of each platform.	Annual stocktaking brief summarising the outcomes of each platform.	1,000																				
Output 1.3: At least 100 people from national and regional institutions have the capacity to conduct climate change vulnerability and environmental impact assessments at the landscape level, providing the evidence for planning and investment.																						

Knowledge management activities by output	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Activity 1.3.1: Conduct a capacity needs assessment at the national (DNA, DNEF, AEDD, DNPIA, DNP, IER, APCAM, NGOs) and regional (DRA, DREF, DRPIA, DRP, CRA, CRRA, NGOs, territorial collectivities) levels to identify key capacity gaps related to climate change vulnerability and environmental impact assessments at the landscape level.	Capacity needs assessment	23,215																				

Knowledge management activities by output	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Activity 1.3.2: In coordination with universities and vocational training centers, develop specific training curricula for each type of identified audience to bridge the capacity and awareness gaps analysed through Activity 1.3.1.	Training curricula	3,775																				

Knowledge management activities by output	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Activity 1.3.3: Produce training material, embed learning (including elearning) material in relevant existing curricula within universities and vocational training centers and conduct training sessions planned under Activity 1.3.2.	Training material	4,485																				

Knowledge management activities by output	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Activity 1.3.5: Accompany the 100 trainees to conduct mock, or, when feasible, real-life climate change vulnerability and environmental impact assessments and have them report on their experience in a critical & learning-by-doing perspective.	Mock & real-life climate change vulnerability and environmental impact assessments	10,420																				
Output 1.4: At least 100 people from national and regional institutions have the capacity to conduct efficient monitoring of climate change resilience, land and biodiversity use and conservation, resulting from integrated sustainable landscape management interventions.																						

Knowledge management activities by output	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Activity 1.4.1: Conduct a capacity needs assessment at the national (DNA, DNEF AEDD, DNPIA, DNP, IER, APCAM, NGOs) and regional (DRA, DREF, DRPIA, DRP, CRA, CRRA, NGOs, territorial collectivities) levels to identify key capacity gaps related to the monitoring of climate change resilience, land and biodiversity use and conservation.	Capacity needs assessment	4,485																				

Knowledge management activities by output	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Activity 1.4.2: In coordination with universities and vocational training centers, develop specific training curricula for each type of identified audience to bridge the capacity and awareness gaps analysed through Activity 1.4.1.	Training curricula	2,175																				

Knowledge management activities by output	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Activity 1.4.3: Produce training material, embed learning (including elearning) material in relevant existing curricula within universities and vocational training centers and conduct training sessions planned under Activity 1.4.2.	Training material	4,485																				
Activity 1.4.4: Accompany the 100 trainees to conduct mock, or, when feasible, real-life monitoring and have them report on their experience in a critical & learning-by-doing perspective.	Mock and real-life monitoring reports	4,485																				

Knowledge management activities by output	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Output 2.1: At least 22 integrated sustainable landscape management plans (SCATs) and 17 PDSECs developed by COFOs and relevant bodies for demonstration sites, addressing agro-sylvo-pastoral food system adaptation priorities, and facilitating sustainable production intensification, and sustainable use and conservation of land and biodiversity.																						
Activity 2.1.1: Conduct B-INTACT assessments of land management options proposed by COFOs in 20 selected communes, including communes in the vicinity of biodiversity-rich areas (in conjunction with Activity 2.1.1). Organise participatory discussions of B-INTACT outcomes.	B-INTACT output, meeting reports	10,000																				
Activity 2.1.5 Conduct a climate risk assessment for the project target areas.	Climate risk assessment	10,900																				
Output 2.2: In coordination with COFOs and supporting active engagement of multiple (and sometimes conflicting) resource users in planning and management, at least 100 Community Listening Groups (Dimitra Clubs) established and animated.																						

Knowledge management activities by output	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Activity 2.2.1: In at least 20 communes, conduct a participatory diagnostic of existing CECs and identify potential capacity gaps.	Diagnostics	84,500																				
Activity 2.2.2: As per the results of Activity 2.2.1, promote the Dimitra approach within existing community listening groups (CECs) or, where absent, establish Dimitra clubs in at least 20 communes.	Training reports	85,000																				
Output 2.3: At least 15,000 agro-sylvo-pastoral producers participate in Agro- Pastoral Field Schools (APFS) and at least 40,000 additional producers from neighbouring communities are trained through exposure visits to APFS and exchange with participating farmers.																						

Knowledge management activities by output	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Activity 2.3.1: Design a training curriculum for agro-sylvo-pastoral activities to be conducted with APFSs	Training curriculum	42,765																				
Activity 2.3.2: Provide recycling training to 12 experienced master trainers on three modules, namely: i) awareness raising on gender aspects; ii) nutrition; and iii) agroecology.	Training reports	14,357																				

Knowledge management activities by output	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Activity 2.3.3: Establish six training centres and train 150 APFS facilitators through Memorandum of Understandings and retraining of existing DNA trainers on the integration of crop/livestock systems into APFS.	Training reports	200,384																				
Activity 2.3.5: Implement 600 APFSs in selected zones and train 12,000 agro-pastoralists in the APFS approach according to the training curriculum established by the project	Training reports, Diversity Field For a outputs	1,132,000																				

Knowledge management activities by output	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Activity 2.3.6: Organise sessions to retrain APFS facilitators in PY2 and PY3 on the basis of potential capacity gaps reported during PY1 and PY2. Organise annual stocktaking workshops for facilitators in PY 2, 3, 4 and 5.	Training reports, stocktaking reporrts	100, 198																				
Activity 2.3.7: Organise participatory community analysis of climate risks by each APFS and identify local CCA measures and technologies.	Participatory climate risk assessment outputs	Included in 2.3.6.																				

Knowledge management activities by output	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Activity 2.3.9: Facilitate communication between the APFSs through open-house days, exchange visits and national meetings.	Programme of activities, event & open-house reports	69,000																				
Output 3.1: Best practices developed and disseminated to support the agroecological transition of ASP communities, with a focus on women empowerment																						
Activity 3.1.1: Assist local stakeholders with the development of business plans for horticulture in at least 40 target communes ? including budget planning for input provision.	Business plans & training reports	48,880																				
Activity 3.1.6: Conduct tailored business training for women and youth involved with the Dakan platform.	Training reports	Included in budget for 3.4																				

Knowledge management activities by output	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Activity 3.1.8: Assist local stakeholders with the development of business plans for small livestock and poultry in at least 40 target communes ? including budget planning for input provision.	Business plans & training reports	2,175																				
Activity 3.1.12 : Support the development of business plans for the commercial production and marketing of compost locally.	Business plans & training reports	2,175																				

Knowledge management activities by output	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Activity 3.1.13: Build the capacities of ambulant dairy vendors in terms of dairy health/nutrition so that they become ambassadors of better nutrition and production.	Training reports	39,300																				
Activity 3.1.17: Provide marketing and business training to the dairy cooperative members in Di?ma.	Commercial plans & training reports	Included in budget for 3.1.13																				
Output 3.2: In connection with the Centre d?Appui ? la Microfinance et au D?veloppement (CAMIDE), innovative financial mechanisms set up to leverage funding and facilitate investments in support of an agro-ecological transition.																						

Knowledge management activities by output	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Activity 3.2.4: Sign agreements with CAMIDE and other partners ? as needed ? to implement the terms of references developed under Activities 3.2.2 and 3.2.3.	Training reports	140,000																				
Output 3.3: Participatory certification systems elaborated in partnership with the private sector, civil society and international sustainability certification initiatives to facilitate access to markets																						
Activity 3.3.3: Sign agreements with AMSD or other partners ? as needed ? to implement the terms of references developed under Activity 3.3.2.	Training reports	60,000																				
Output 3.4: The Junior Farmer Field and Life School approach implemented to catalyse innovation in support of an agroecological transition and restore the attractivity of the agricultural sector.																						

Knowledge management activities by output	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Activity 3.4.1: Conduct a detailed mapping and analysis of relevant programmes and investments underway in Mali, including their target groups (e.g. youth 15-40; young adolescents 15-17) and strategies adopted	Mapping and analysis of relevant programmes and investments underway in Mali	5,110																				
Activity 3.4.2: Carry out a rapid analysis of agricultural sectors, including in terms of farmers' organisations, to identify and evaluate the value chains that are more attractive to rural youth and that offer the best market opportunities.	Analysis of agricultural sectors	1,450																				

Knowledge management activities by output	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Activity 3.4.3: Based on the assessments produced trough Activities 3.4.1 and 3.4.2, develop and implement JFFLS curricula tailored to the Di?ma and Kita circles.	JFFLS curricula	1,450																				
Activity 3.4.4: Accompany young people trained in JFFLS through established Public Private Partnerships (PPP) by facilitating their access to markets and productive resources in collaboration with national partners	Activity reports with lessons learned	26,850																				

Knowledge management activities by output	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Activity 3.4.5 Organise participatory workshops to identify a mechanism to facilitate the allocation of land to organised groups of young women and men with agricultural projects.	Workshop reports	3,730																				
Activity 3.4.6: Organise exchange visits and study tours for youths within the country or to other countries in the sub-region.	Exchange visit reports	65,720																				
Output 4.1: Project Monitoring, Evaluation & Learning plan developed and implemented																						

Knowledge management activities by output	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Activity 4.1.1: Co-develop and implement the MEL plan, identifying indicators, tools and the monitoring strategy for the project?s activities, including roles and responsibilities as well as a timeline and budget.	MEL plan and project reporting outputs (cf. M&E section)	Part of budget for M&E officer																				

Knowledge management activities by output	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Activity 4.1.4: Carry out at least two studies assessing the effect of APFS on participating farmers? farming practices, environmental performance, livelihoods; and the cost-benefits of the APFS and JFFLS approach for participating farmers. Focus on specific effects for women, as key actors in the agroecological transitions. Studies will combine quantitative assessments with qualitative assessments. They should be carried out in collaboration with national and international research institutes.	Studies	xxx																				

Knowledge management activities by output	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Output 4.2: A Learning, Outreach & Communication Strategy developed and implemented, including capitalisation of agroecological innovations, coordination and awareness-raising meetings with co-financing partners																						
Activity 4.2.1: Publish annual briefs on the project?s accomplishments, experiences and lessons learned. Share these briefs with national and regional public institutions, national and international development organisations and NGOs.	Annual briefs on the project?s accomplishments, experiences and lessons learned.	18,868																				

Knowledge management activities by output	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Publish at least five thematic videos documenting key activities conducted by the project with challenges, difficulties, lessons learned and recommendations. The themes may include: i) developing ?Caisses de R?silience? and AVECs; ii) using the Delfino plough to restore degraded land with mechanised za? (including a description of operational costs); and iii) practical examples of mainstreaming CCA and biodiversity conservation into local land-use and development plans; iv)	At least five thematic videos documenting key activities conducted by the project	N/A																				

Knowledge management activities by output	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Activity 4.2.3: Organise biannual meetings of the cofinancing partners to exchange lessons learned and share knowledge, co-chaired by the GEF national Focal Point.	Meeting reports	3,000																				
Activity 4.2.4: Support the HIH initiative by feeding information gathered through M&E activities and implementation of specific tools (e.g. TAPE and B-INTACT) in the Geospatial Platforms. Liaise with HIH custodians to identify other avenues for collaboration.	HIH outputs (incl. datasets & GIS information)	15,000																				

Knowledge management activities by output	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Activity 4.2.5: Organise knowledge exchange visits, both nationally and regionally, with relevant development partners, CSOs and academia. Collaborate with academia to publish at least four scientific papers to document the impact of the project activities from a scientific perspective.	Knowledge exchange visit reports, scientific papers	115, 000																				

Knowledge management activities by output	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Activity 4.2.6: In PY 2, 3, 4 and 5, organise a regional seminar on the agroecological transition in West Africa for relevant governmental officers, development partners, NGOs and CSOs. These seminars will include field visits.	Reports from the regional workshops	128,000																				

Knowledge management activities by output	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Activity 4.2.7: Organise information and knowledge exchange on APFS, including with the Central Africa Field School Network, African Forum For Agricultural Advisory Services, Global FFS Platform etc	Blog posts, articles, datasets etc.	10,000																				
Output 4.3: Project mid-term and final evaluations undertaken																						

Knowledge management activities by output	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Activity 4.3.1: Conduct an independent mid-term review. Publish the mid-term review report in English and French for easier dissemination in Mali. Organise a workshop with co-financing partners and other relevant institutions to discuss the findings from the review and identify appropriate measures to be implemented as a result.	Mid-term review (available in French and English) Workshop report	36,210																				

Knowledge management activities by output	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Activity 4.3.2: Conduct an independent terminal evaluation. Publish the terminal evaluation report in English and French for easier dissemination in Mali. Organise a workshop with co-financing partners and other relevant institutions to discuss the findings from the review and ensure that recommendations are disseminated beyond the sole audience of implementing and executing institutions so that they can inform other initiatives.	Terminal evaluation (available in French and English) Workshop report	48,660																				

Knowledge management activities by output	Key deliverables	Budget USD	Year 1				Year 2				Year 3				Year 4				Year 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Activity 4.3.3: Conduct a terminal TAPE assessment and produce a comparative report to identify agroecological transition dynamics in the Kayes region.	Terminal TAPE assessment, validation workshop reports	50,000																				
Activity 4.3.4: Conduct a terminal B-INTACT assessment of the selected communes studied under Activity 2.1.2 and produce a comparative report to identify gains in MSA through the project interventions.	Final B-INTACT assessment, comparative report with baseline situation	10,000																				

[1] Two in Kayes (one for producers and one for officers), two in Kita (one for producers and one for officers), one in Di?ma and one in Bafoulab?.

[1] Note: formal recommendations issued in the Terminal Evaluation are identified as such in the table.

[2] Source: Appavoo J, Doucour? D. 2016. Evaluation finale : renforcer la capacit? d'adaptation et la r?silience aux changements climatiques dans le secteur agricole au Mali. Final evaluation report.
[3] Source : FAO. 2018. Final evaluation of the project ?Integrating Climate Resilience into Agricultural Production for Food Security in Rural Areas of Mali?. Project Evaluation Series.

[4] Source: Halle B, Doumbia S. 2020. Evaluation finale du projet financ? par le LDCF ? Renforcement de la r?silience des groupements de femmes productrices et des communaut?s vuln?rables aux changements climatiques au Mali ? ou ? Projet Mali-Femmes ?. R?gions de Koulikoro, Kayes et Sikasso.

[5] Two in Kayes (one for producers and one for officers), two in Kita (one for producers and one for officers), one in Di?ma and one in Bafoulab?.

9. Monitoring and Evaluation

Describe the budgeted M and E plan

1. Project oversight will be carried out by the PSC, FAO-GEF Coordination Unit and relevant technical units in FAO headquarters. Oversight will ensure that: i) project outputs are produced in accordance with the project results framework and leading to the achievement of project outcomes; ii) project outcomes are leading to the achievement of the project objective; iii) risks are continuously identified and monitored and appropriate mitigation strategies are applied; and iv) agreed project global environmental and adaptation benefits are being delivered.

2. The FAO-GEF Coordination Unit and HQ Technical Units will provide oversight of GEF financed activities, outputs and outcomes largely through the semi-annual project progress reports, annual PIRs, periodic backstopping and annual supervision missions.

3. Project monitoring will be carried out by the PMU. Project performance will be monitored using the project results matrix, including indicators (baseline and targets) and annual work plans and budgets. At project inception, the results matrix will be reviewed to finalise identification of: i) outputs; ii) indicators; and iii) any missing baseline information and targets. A detailed M&E plan, which builds on the results matrix and defines specific requirements for each indicator (data collection methods, frequency, responsibilities for data collection and analysis, etc.) will also be developed during project inception by the M&E Officer appointed at the PMU, and reviewed and approved by the PSC, and FAO.

Table 26. Monitoring & Evaluation plan.

M&E activity	Responsible parties	Timeframe	GEF Budget (USD)
Inception workshop	Project Management Unit (PMU)	Within two months of project document signature	USD 10,200
Project inception report	Project Manager	Within two weeks of inception workshop	None
Meetings of the Project Steering Committee	PSC	Annually	USD 10,000 per year= 50,000
Project Progress Reports (PPRs)	Project Manager and M&E Officer	Every six months	None

Project Implementation Review report (PIR)	Project Manager	Annually in July	None
Project monitoring	M&E Officer	ongoing	USD 108,000
International travels	M&E	ongoing	USD 3,730
Co-financing reports	FAO Mali Representation office	Annually	Co-financing
Mid-term Review	FAO Mali Representation office	In the 3rd quarter of the 3rd year of the project	USD 40,000
Terminal Evaluation	Regional Office FOR Africa (RAF) ? Regional Evalaution Specialist	At least three months before operational closure	USD 40,000
Terminal report	FAO Mali Representation office / PMU	Within two months of project closure	USD 7,000
Total Budget			**USD 258,930**

[1] This budget only covers formal M&E requirements. Additional M&E activities (e.g. final TAPE assessment, implementation of B-INTACT tools) will be conduced and are budgeted under Component 4. The detailed budget in Annex A2 also includes provision for the recruitment of an M&E Officer.

4. Specific reports that will be prepared under the M&E program are: i) project inception report; ii) Annual Work Plan and Budget (AWP/B); iii) Project Progress Reports (PPRs); iv) annual Project Implementation Review (PIR); v) technical reports; vi) co-financing reports; and vii) Terminal report. In addition, assessment of the relevant GEF-7 core indicators (see Annex A1: Project Results Framework) will be required at mid-term and final project evaluation.

5. **Project Inception report**. It is recommended that the PMU prepare a draft project inception report in consultation with the FAO Lead Technical Officer (LTO), the FAO Budget Holder (BH), and other project partners. Elements of this report should be discussed during the project inception workshop and the report subsequently finalised. The report will include a narrative on the institutional roles and responsibilities and coordinating action of project partners, progress to date on project establishment and start-up activities and an update of any changed external conditions that may affect project implementation. It will also include a detailed first year AWP/B, a detailed project monitoring plan. The draft inception report will be circulated to the PSC for review and comments before its finalization, no later than one month after project start-up. The report should be cleared by the FAO BH, LTO, the FAO-GEF Coordination Unit, and will be uploaded in FAO?s Field Program Management Information System (FPMIS) by the FAO BH.

6. **Results-based Annual Work Plan and Budget (AWP/B)**. The draft of the first AWP/B will be prepared by the PMU in consultation with the joint FAO Project Task Force and reviewed at the project inception workshop. The inception workshop inputs will be incorporated and the PMU will submit a final draft AWP/B within two weeks of the Inception Workshop to the BH. For subsequent AWP/B, the PMU will organise a project progress review and planning meeting for its review. Once comments have been incorporated, the BH will circulate the AWP/B to the LTO, the FAO-GEF Coordination Unit, for comments/clearance prior to uploading in FPMIS by the BH. The AWP/B must be linked to the project?s Results Framework indicators so that the project?s work is contributing to the achievement of the indicators. The AWP/B should include detailed activities to be implemented to achieve the project outputs and output targets and divided into monthly timeframes and targets and milestone dates for output indicators to be achieved during

the year. A detailed project budget for the activities to be implemented during the year should also be included together with all monitoring and supervision activities required during the year. The AWP/B should be approved by the PSC and uploaded on the FPMIS by the FAO BH.

7. **Project Progress Reports (PPR)**: PPRs will be prepared by the PMU based on the systematic monitoring of outcome indicators identified in the project?s Results Framework (Annex A1). The purpose of the PPR is to identify constraints, problems or bottlenecks that impede timely implementation and to take appropriate remedial action in a timely manner. PPRs will also report on projects risks and implementation of the risk mitigation plan. The Budget Holder has the responsibility to coordinate the preparation and finalisation of the PPR, in consultation with the PMU, FAO LTO, and FAO FLO. After LTO, BH, and FLO clearance, the FLO will ensure that project progress reports are uploaded in FPMIS in a timely manner.

8. **Annual Project Implementation Review (PIR)**: The PMU (in collaboration with the BH and the LTO) will prepare an annual PIR covering the period July (the previous year) through June (current year) to be submitted to the FAO-GEF Coordination Unit Funding Liaison Officer (FLO) for review and approval no later than (check each year with GEF Unit but roughly end June/early July each year). The FAO-GEF Coordination Unit will submit the PIR to the GEF Secretariat and GEF Evaluation Office as part of the Annual Monitoring Review report of the FAO-GEF portfolio. PIRs will be uploaded on the FPMIS by the FAO-GEF Coordination Unit.

9. **Technical reports**: Technical reports will be prepared by national, international consultants and partner organisations under LoAs as part of project outputs and to document and share project outcomes and lessons learned. The drafts of any technical reports must be submitted by the PMU to the FAO BH, who will share it with the FAO LTO. The LTO will be responsible for ensuring appropriate technical review and clearance of said report. The BH will upload the final cleared reports onto the FPMIS. Copies of the technical reports will be distributed to project partners and the Project Steering Committee as appropriate.

10. **Co-financing reports**: The FAO BH, with support from the PMU, will be responsible for collecting the required information and reporting on co-financing as indicated in the Project Document/CEO Request. The PMU will compile the information received from the executing partners and transmit it in a timely manner to the FAO LTO and BH. The report, which covers the period 1 July through 30 June, is to be submitted on or before 31 July and will be incorporated into the annual PIR. The format and tables to report on co-financing can be found in the PIR.

11. **Terminal report**: Within two months before the end date of the project, and one month before the Terminal Evaluation, the PMU will submit a draft Terminal report to the FAO BH, and LTO. The main purpose of the Terminal report is to give guidance at ministerial or senior government level on the policy decisions required for the follow-up of the project, and to provide the donor with information on how the funds were used. Accordingly, the Terminal report is a concise account of the main products, results, conclusions and recommendations of the project, without unnecessary background, narrative or technical details. The target readership consists of persons who are not necessarily technical specialists but who need to understand the policy implications of technical findings and needs for insuring sustainability of project results.

Evaluation provisions

12.

1. An independent **mid-term review** (MTR) will be carried out at project mid-life in terms of expenditure and/or overall project duration, tentatively in the second quarter of project year 3. The BH will arrange an independent MTR in consultation with the Project Steering Committee (PSC), the Project Management Unit (PMU), the lead technical o?ce (LTO) and the FAO-GEF Coordination Unit in FAO headquarters. The MTR will be conducted to review progress and effectiveness of implementation in terms of achieving project objective, outcomes and outputs. The MTR will allow mid-course corrective actions, if needed. The MTR will provide a systematic analysis of the information on project progress in the achievement of expected results against budget expenditures. It will refer to the project budget (see Annex A2) and the approved AWP/Bs. It will highlight replicable good practices and key issues faced during project implementation and will suggest mitigation actions to be discussed by the PSC, the LTO and FAO-GEF Coordination Unit.

2. The GEF evaluation policy foresees that all medium and large size projects require a separate **terminal evaluation**. Such evaluation provides: i) accountability on results, processes, and performance; ii) recommendations to improve the sustainability of the results achieved; and iii) lessons learned as an evidence-base for decision-making to be shared with all stakeholders (government, execution agency, other national partners, the GEF and FAO) to improve the performance of future projects. The Budget Holder (BH) will be responsible to contact the Regional Evaluation Specialist (RES) within six months prior to the actual completion date (NTE date). The RES will manage the decentralized independent terminal evaluation of this project under the guidance and support of OED and will be responsible for quality assurance. Independent external evaluators will conduct the terminal evaluation of the project taking into account the ?GEF Guidelines for GEF Agencies in Conducting Terminal Evaluation for Full-sized Projects. OED will provide technical assistance throughout the evaluation process, via the OED Decentralized Evaluation Support team ? in particular, it will also give quality assurance feedback on: selection of the external evaluators, terms of reference (TOR) of the evaluation, draft and final report. OED will be responsible for the quality assessment of the terminal evaluation report, including the GEF ratings. After the completion of the terminal evaluation, the BH will be responsible to prepare the management response to the evaluation within four weeks and share it with national partners, GEF, OED and the FAO-GEF CU.

Disclosure

14. The project will ensure transparency in the preparation, conduct, reporting and evaluation of its activities. This includes full disclosure of all non-confidential information, and consultation with major groups and representatives of local communities. The disclosure of information shall be ensured through posting on websites and dissemination of findings via knowledge products and events. Project reports will be broadly and freely shared, and findings and lessons learned made available.

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[1] This budget only covers formal M&E requirements. Additional M&E activities (e.g. final TAPE assessment, implementation of B-INTACT tools) will be conduced and are budgeted under Component 4. The detailed budget in Annex A2 also includes provision for the recruitment of an M&E Officer.

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. The proposed project will generate socio-economic benefits by maintaining and enhancing the resource base on which the local communities in the target circles rely for their livelihoods.

2. Moreover, the project will support women and men small-scale producers in the target landscapes in accessing markets and modern value chains. It thereby aims to realise socio-economic benefits for the herders and farmers, while incentivising them to manage their resources sustainably. The project will thus works towards achieving full and productive employment and decent work in rural areas.

3. The project adopts a human rights-based approach, and this includes the right to Decent Rural Employment. This concept will guide the activities implemented under Component 3 of the proposed project. It will particularly promote employment creation and enterprise development, while aligning to the other dimensions of Decent Rural Employment, including:

? governance and social dialogue (support participation of rural poor in local decision-making and governance mechanisms empowering women and youths in particular);

? social protection (promote safer technology for small-scale and commercial agriculture in extension support programmes); and

? standards and rights at work (support socially responsible agricultural production, provide access to tools to limit hard working conditions).

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		

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.

Section B: Environmental and Social risks from the project ? ESM Plan

Risk identified	Risk Classification	Mitigation Action (s)	Indicator / Mean(s) of Verification	Progress on mitigation action

ESS #3 Plant and Genetic Resources for Food and Agriculture	Moderate	? As part of the agroecological approach, the project will support the upscaling of locally adapted crop varieties and agroecological farm management practices. ? The focus will be on agro-sylvo-pastoral production practices for land restoration, climate change adaptation and sustainable intensification practices that allow better livelihoods while facilitating restoration of land and biodiversity in grasslands and biodiversity-rich forests. ? The project will train local facilitators to work with farmers to identify existing perennial and annual crop varieties that are used and well adapted to local socio-ecological conditions, and improve their production. ? As part of the project, local governance structures (such as COFOs) and mechanisms will be strenghtened to more effectively implement and monitor climate change adaptation through sustainable landscape management plans ? Local market actions will facilitate the commercialization of locally adapted crops and other products, which will be informed by discussions in a number of multi-stakeholder platforms on the topic.	# of smallholder farming households who are applying locally adapted agro-ecological (i.e. SLM and agro-ecology) production practices (e.g. reduced tillage, crop selection, intercropping, crop rotation, biological pest control) # of products or services with strong potential in terms of women and youth empowerment, support to the agroecological transition and increased livelihood resilience, strengthened through the implementation of commercial plans # of agro-pastoralists supported through APFS # local landscape committees COFOs strenghtened # of people from national and regional institutions strengthened on monitoring and assessing land and biodiversity use and conservation # of sustainable landscape management plans revised to better integrate climate change adaptation and vulnerability considerations, as well as land and biodiversity use and conservation Mean Species	N/A

Supporting Documents

Upload available ESS supporting documents.

Title	Module	Submitted
ESS certificate (PIF)	**CEO Endorsement 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).

Annex A1: Project Results Framework

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
Objective: Through the implementation of an agroecological transition approach, promote innovations in governance, production and finance in order to reduce the vulnerability of the small-holder agro-sylvo-pastoral food systems and livelihoods, reversing land degradation and halting the loss of globally significant biodiversity in fragile landscapes of the Kayes region							
	(i) Characterisation of Agroecological Transition (CAET) score. The CAET score is assessed based on the 10 elements of agroecology, namely diversity, synergies, efficiency, recycling, resilience, culture and food traditions, co-creation and sharing of knowledge, human and social values, circular and solidarity economy, and responsible governance	(i) The baseline CAET score in the Kayes region estimated through the PPG TAPE assessment is 55%.	N/A	(i) Average CAET score of a least 70% over the target circles, as areas with a CAET score of 70% and above are deemed to be advanced in the agroecological transition,.	(i) Terminal TAPE assessment	(i) The baseline assessment had a slightly different sample from the target circles, as it included K?ni?ba and did not include Kayes. However, it is assumed that this will not affect the overall significance of the indicator. 2.It is assumed that the project scale and lifespan will be sufficient to have an impact that translated in a significant increase of the CAET score.	TAPE team (FAO) and local partner

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
	(ii) Area of production land under improved and climate-resilient management	(ii) Agroecological practices are unevenly disseminated across the target circles, as shown by the TAPE assessment. 82,825 ha in the Kayes region either have stable or degrading productivity.	(ii) 50,000 ha under SLM, including: - 4,000 ha under climate-resilient management with efficient water management techniques implemented (e.g. zai) - 12,000 ha directly benefiting biodiversity	(ii) 160,000 ha under SLM, including: - 10,000 ha under climate-resilient management with efficient water management techniques implemented (e.g. zai) - 30,000 ha showing increased land productivity - 25,000 ha directly benefiting biodiversity	(ii) Field observations, activity reports and procurements, income generated through sustainable VCs, tool results (TAPE, Trends.Earth), training material and workshop reports, procurement contracts and ToRs, expert reports, communities? interviews.	Local communities grasp the opportunities offered by SLM and agroecological practices, and are willing to invest the required time and energy to make their livelihoods more resilient. No significant barriers to the uptake of agroecological practices remain thanks to the project interventions. SLM and agroecological practices promoted by the project lead to measurable and sustainable results on ecosystems productivity, biodiversity, and income generation.	M&E team with assistance of FAO HQ experts as required (Trends.Earth, TAPE), independent evaluators, contractors, execution partners

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
	(iii) Number of direct beneficiaries disaggregated by gender	(iii) 0. The total population of target communes is approx. 903,000 (734,000 in the northern landscape and 168,000 in the southern landscape). Approx. 64% (i.e. 578,000 women and men) of this population is involved in the agricultural sector.	(iii) 100,060 (50% women)	(iii) 200,120 (50% women)	(iii) Activity reports, workshop reports, procurement contracts and ToRs, expert reports, communities? interviews.	Terminal TAPE assessment	M&E team with assistance of FAO HQ experts as required (Trends.Earth, TAPE), independent evaluators, contractors, execution partners

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
	(iv) Household Dietary Diversity Score (DDS) disaggregated by commune and type of household (e.g. men-led vs. woman-led household for example) The HDDS is meant to reflect, in a snapshot form, the economic ability of a household to access a variety of foods. Studies have shown that an increase in dietary diversity is associated with socio-economic status and household food security (household energy availability).	(iv) The average household DDS measured at the regional level through the initial TAPE assessment is 65.	(iv) N/A	(iv) At least 20% increase in average household DDS score in the target circles	iv) Final TAPE assessment		
Component 1: Strengthened governance for climate-adapted agro-sylvo-pastoral food systems and sustainably managed productive landscapes							

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
Outcome 1: Strengthened governance structures more effectively implement and monitor climate change adaptation in sustainable landscape management plans, resulting in sustainable production intensification, adoption of agroecological approches, resilient livelihoods and improved use and restoration of land and ecosystems and conservation of biodiversity	(i) Number of multi-stakeholder committees supported to foster planning and investment into climate change adaptation and sustainable management of land and biodiversity at the landscape level, with participation to meetings disaggregated per gender	(i) A number of committees were established at the local level as required by Decree N?09-011 of 19 January 2009. Out of 129 communes in the Kayes region, 112 have formally established a communal COFO. However, these often do not fulfil the mandate assigned to them.	(i) At least 15 communal COFOs supported, with at least 40 % of women in COFO meetings supported by the project	(i) At least 22 communal COFOs supported, with at least 40 % of women in COFO meetings supported by the project	(i) Activity reports, workshop reports, procurement contracts and ToRs, expert reports.	Local institutions involved in natural resource management acknowledge the necessity to increase their capacity and engage with project supporting activities accordingly. The government in place supports the decentralisation process throughout and beyond the implementation phase.	M&E team, independent evaluators, contractors, execution partners

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
-	(ii) Number of local multi-stakeholder platforms established to support the role of territorial markets as key drivers for the agroecological transition, with disaggregated participation per gender	(ii) In the baseline, no multistakeholder platform centered around territorial markets exist.	(ii) Five multistakeholder platforms established around territorial markets with 50% of women?s participation in each platform	(ii) Five multistakeholder platforms established around territorial markets with 50% of women?s participation in each platform	(ii) Activity reports, procurement contracts and ToRs, expert reports, annual stocktaking briefs summarising the outcomes for each territorial market platform.	Stakeholders involved in territorial markets see the value of engaging in cross-sectoral discussions and participate actively in the platforms to be established.	
Output.1.1: Capacity of at least 22 local landscape committees (COFO) strengthened in areas identified the less advanced in the agroecological transition to effectively integrate climate change adaptation and vulnerability considerations, and land and biodiversity resources use into sustainable landscape management plans Output 1.2: Five multi-stakeholder platforms established at the level of and around territorial markets, in order to effectively engage multiple stakeholders (COFOs, private sector, CSOs, local administration etc.) involved in agro-sylo-pastoral food systems resilience and sustainable land use and biodiversity conservation planning and investment. Output 1.3: At least 100 people from national and regional institutions have the capacity to conduct climate change vulnerability and environmental impact assessments at the landscape level, providing the evidence for planning and investment. Output 1.4: At least 100 people from national and regional institutions have the capacity to conduct efficient monitoring of climate change resilience, land and biodiversity use and conservation, resulting from integrated sustainable landscape management interventions.							
Component 2: Integrated sustainable landscape management plans developed and implemented and innovative production practices and approaches demonstrated							

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
Outcome 2: In selected pilot sites, integrated sustainable landscape management plans are implemented, contributing to climate change resilient agro-sylvo-pastoral food systems, dissemination of agroecological approaches, sustainably intensified production, sustainable use and restoration of land and ecosystems and biodiversity conservation.	(i) Number of sustainable landscape management plans revised to better integrate climate change adaptation and vulnerability considerations, as well as land and biodiversity use and conservation	(i) Most communes in the target circles have SCATs. However, these often do not fully take into account climate change adaptation and vulnerability considerations, as well as land and biodiversity use and conservation. Most communes have PDSECs but several of them are due to expire in 2022 or 2023.	(i) At least 11 SCATs, eight PDSECs, 11 intercommunal pastoral conventions and three inter-circle pastoral conventions reviewed and revised, as required.	(i) At least 22 SCATs and 17 PDSECs reviewed and revised as (required), implemented and monitored by COFOs. At least 22 intercommunal and six inter-circle pastoral conventions reviewed, revised as required, and supported for their implementation.	(i) Revised SCATs, PDSECs, pastoral conventions, activity reports, workshop reports, procurement contracts and ToRs, expert reports.	COFOs are willing to proceed with the revision of planning documents. The government in place supports the decentralisation process throughout and beyond the implementation phase.	M&E team, independent evaluators, contractors, execution partners

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
-	(ii) Number of agro-sylvo-pastoral producers trained on innovative climate change adaptation and SLM practices	(ii) 0. The total population of target communes is approx. 903,000 (734,000 in the northern landscape and 168,000 in the southern landscape). Approx. 64% of this population is involved in the agricultural sector.	(ii) 5,000 (50% women)	(ii) 15,000 (50% women)	Surveys, project monitoring reports	Target beneficiaries enroll in APFSs. Enough facilitators can be mobilised and trained to set up the 600 APFSs required.	
-	(iii) Mean Species Abundance and economic impact of biodiversity conservation measures assessed through the B-INTACT tool in the buffer zones (at least 25,000 ha) of biodiversity-rich areas	(iii) To be determined during project implementation (Activity 2.1.1)	N/A	(iii) To be determined during project implementation (Activity 2.1.1)	Inception and terminal B-INTACT assessments (Activities 2.1.1 & 4.1.2)	The impact of the project intervention will be measurable by its termination.	PMU assisted by FAO B-INTACT specialist

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
Output 2.1: At least 22 integrated sustainable landscape management plans (SCATs) and 17 PDSECs developed by COFOs and relevant bodies for demonstration sites, addressing agro-sylvo-pastoral food system adaptation priorities, and facilitating sustainable production intensification, and sustainable use and conservation of land and biodiversity ? accompanied by at least 22 inter-communal and six inter-circle pastoral conventions reviewed, revised as required and supported for their implementation. Output 2.2: In coordination with COFOs and supporting active engagement of multiple (and sometimes conflicting) resource users in planning and management, at least 100 Community Listening Groups (Dimitra Clubs) established and animated Output 2.3: At least 15,000 agro-sylvo-pastoral producers participate in Agro- Pastoral Field Schools (APFS) and at least 40,000 additional producers from neighbouring communities are trained through exposure visits to APFS and exchange with participating farmers. APFSs will be organized to prioritise, experiment and co-create and disseminate innovative production practices, including: -Priority and scalable agro-sylvo-pastoral production practices (e.g. crop-animal-trees integration, reduced/no tillage, crop selection, intercropping, crop rotation, cover crops, agro-forestry, biostimulants, biological pest control etc.) introduced on agriculture land to restore degraded land and ecosystems, adapt to climate change and sustainably intensify and diversify productivity (avoiding further expansion of agriculture land into KBAs) - Priority and scalable climate change adaptation practices (e.g. zai, Delfino plow and Vallerani system, assisted regeneration of indigenous trees through pruning) introduced on grassland in order to restore land and biodiversity (avoiding further expansion into KBAs) - Priority and scalable restoration (e.g. reforestation, afforestation, forest fire and pest outbreak prevention planning) and sustainable use (e.g. selected harvest of fuelwood species, forest fire management, controlled access) practices introduced on biodiversity-rich forest ecosystems for ecosystem service and habitat conservation of globally significant biological diversity							
Component 3. Improved finance for and investment into climate change adapted livelihoods and sources of income of vulnerable agro-sylvo-pastoral communities							

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
Outcome 3: Selected mixed value chains are strengthened for improved and climate-resilient rural livelihoods of agro-sylvo-pastoral women and youth	(i) Number of products or services with strong potential in terms of women and youth empowerment, support to the agroecological transition and increased livelihood resilience, strengthened through the implementation of commercial plans	(i) Economic activities around many products that have potential in terms of women and youth empowerment, support to the agroecological transition and increased livelihood resilience, is not fully capitalised upon.	(i) At least three products or services	(i) At least five products or services	(i) Commercial plans, procurement documents, training attendance sheets, mission reports, surveys	Stakeholders in pre-identified VCs are willing to be supported to further develop their activities.	M&E team, independent evaluators,
-	(ii) Number of additional projects benefitting from improved access to micro-finance.	(ii) 0.	(ii) At least 100 projects benefitting from access to micro-finance.	(ii) At least 200 projects benefitting from access to micro-finance.	(ii) Ledgers, Benso Jamanu audits, activity reports, surveys	Communities from the target communes are willing to acces micro-finance instruments.	

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
-	(iii) Number of jobs created for youths supported through the Junior Farmer Field and Life School approach to catalyse innovation and restore the attractivity of the agricultural sector	(iii) The JFFLS is not implemented in the target circles of Di?ma (northern landscape) and Kita (southern landscape), which both show the strongest tendencies in terms of rural youth emigration (as per the baseline TAPE assessment).	(iii) At least 60 jobs created for youths enrolled and actively following the JFFLS curricula	(iii) At least 120 jobs created for youths enrolled and actively following the JFFLS curricula	JJFLS curricula, annual activity reports, surveys	There is enough demand from the youth in the target circles to enroll in JFFLS curricula, despite the strong youth emgration rate (or youth?s self-declared intent to emigrate)	
Output 3.1: Best practices developed and disseminated to support the agroecological transition of ASP communities, with a focus on women empowerment. Output 3.2: In connection with the Centre d?Appui ? la Microfinance et au D?veloppement (CAMIDE), innovative financial mechanisms set up to leverage funding and facilitateinvestments in support of an agro-ecological transition Output 3.3: Participatory certification systems elaborated in partnership with the private sector, civil society and international sustainability certification initiatives to facilitate access to markets Output 3.4: The Junior Farmer Field and Life School approach implemented to catalyse innovation in support of an agroecological transition and restore the attractivity of the agricultural sector							
Component 4: Knowledge management and outscaling							

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
Outcome 4: Project monitored, results captured and lessons learned widely disseminated.	(i) Existence and implementation of an M&E plan and a communication strategy	(i) No M&E plan, no communication strategy	(i) 1 M&E Plan, 1 communication strategy developed	(i) Existence and implementation of an M&E plan and a communication strategy	Evaluation reports (mid-term review, project interim reports etc.), knowledge platforms websites, number of visits of the website and documents downloads, knowledge products, communication products	Sectoral institutions involved in natural resource management acknowledge the necessity to increase cross-sectoral and regional collaboration and participate (lead) accordingly	M&E team, independent evaluators
	(ii) Existence of a functional partnership in support of the agroecological transition	(ii) There are some fora for knowledge exchange and learning on agroecology in the Kayes region. These need to be complemented by additional knowledge exchange initiatives, including through workshops, regular meetings between co-financing partners, collaboration with academia and field visits	(ii) Animation of a partnership in support of the agroecological transition, with at least 6 meetings with co-financing partners (on a biannual basis), workshops, collaboration with academia and field visits	(ii) Animation of a partnership in support of the agroecological transition, with at least 12 meetings with co-financing partners (on a biannual basis), workshops, collaboration with academia and field visits	Attendees lists, meeting reports	Co-financing partners are mobilised for knowledge exchange and willing to engage in technical cooperation.	M&E team, independent evaluators

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
Output 4.1: Project Monitoring, Evaluation & Learning plan developed and implemented Output 4.2: A Learning, Outreach & Communication Strategy developed and implemented, including capitalisation of agroecological innovations, coordination and awareness-raising meetings with co-financing partners Output 4.3: Project Mid-term and Final Evaluations undertaken							

[1] Source: FAO. 2019. TAPE Tool for Agroecology Performance Evaluation 2019 ? Process of development and guidelines for application. Test version.
[2] Systems with a CAET score below 50% are non-agroecological systems (that may be market oriented conventional agriculture as well as subsistence level); from 50 to 70% systems are in transition to agroecology and above 70% systems are advanced agroecological systems.
[3] Source: Trends.Earth, data collated over the 2000-2019 period.
[4] These areas include areas benefitting from landscape management plans (SCAT), development plans or pastoral conventions revised to include climate change adaptation, NRM and biodiversity conservation.
[5] Areas under climate-resilient management refers to land where improved agroecological practices will be implemented as a result of APFS training.
[6] These areas include areas benefitting from landscape management plans (SCAT), development plans or pastoral conventions revised to include climate change adaptation, NRM and biodiversity conservation.
[7] Areas under climate-resilient management refers to land where improved agroecological practices will be implemented as a result of APFS training.
[8] Source: Recensement G?n?ral Agricole 2004-2005. No more recent data was available as of March 2021.
[9] See for example Hoddinott J, Yohannes Y. 2002. Dietary diversity as a food security indicator.

[10] Target based on an average micro-credit of USD 500 per project. This target may be revised depending on observed scale of individual loans.
[11] Same as above.
[12] Support Center for Microfinance and Development

The two tables below show the connection between GEF and LDCF Core Indicators, project outputs and project budget.

GEF Core Indicators	Contributing components / outputs	Unit cost
CI3: area of land restored: 10,000 ha		
? Agricultural land: 4,000 ha	2.3	@ USD 168 (mostly cost of Vallerani system), however, additional resources will be invested will be provided through APFS (training)

? Forest & forest land: 1,000	2.3	@ USD 673 (mostly cost of Vallerani system), however, additional resources will be invested will be provided through APFS (training)
? Natural grass & shrublands: 5,000 ha	2.2 & 2.3	@ USD 134 (mostly cost of Vallerani system), however, additional resources will be invested through APFS (training)
CI4: Area of landscapes under improved practices: 160,000 ha		
? Area of landscapes under improved management to benefit biodiversity: 25,000 ha	1.1, 2.1, 2.3	Total costs: 40% of APFS investment to be directed to communes in the vicinity of KBAs; implementation of B-INTACT tool; mainstreaming of BD into land-management plans. Overall, unit cost of USD 41 per ha
? Area of landscapes under sustainable land management in production systems: 135,000 ha	1.1, 2.1, 2.3	Total costs: revision of land-use plans, investment through APFS, irrigation systems, preparation & implementation of pastoral conventions. Overall, unit cost of USD 16.6 per ha
CI11: Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment: 200,120	2.3, 3.1, 3.2, 3.3, 3.4	Please see breakdown in LDCF table (CI1) below.

LDCF Core Indicators	**Contributing components / outputs**	**Unit cost**
CI1: Total number of direct beneficiaries: 200,120		
? (LDCF Output 1.1.1) Total no. of direct beneficiaries from more resilient physical and natural assets: 40,000	2.3	Estimated number of people benefiting from restored ecosystems (total cost of USD 673,000) and irrigation systems (total cost of USD 350,000). Unit cost of USD 25

? (LDCF Output 1.1.2) Total no. of direct beneficiaries with diversified and strengthened livelihoods and sources of income: 160,000	2.3, 3.1, 3.2, 3.3	APFS: ? total cost of USD 1,388,000 for 15,000 direct trainees (unit cost of USD 92) ? In addition, at least 40,000 people will gain exposure to improved practices through exchange visits and informal knowledge exchange, for a total cost of USD 54,000 ? Unit cost for 55,000 APFS beneficiaries: USD 26 Component 3: overall, approx. 105,000 people are expected to benefit from IGAs, certification and micro-finance. Unit cost of USD 21
? (LDCF Output 1.2.1) Total no. of entrepreneurs supported: 120	3.4	JJFLS: 120 beneficiaries, for a unit cost of USD 893
CI2: Area of land managed for climate resilience: 135,000 ha		
? Ha of agricultural land: 54,000	1.1, 2.1, 2.3	Total costs: revision of land-use plans, investment through APFS, irrigation systems. Overall, unit cost of USD 19.5 per ha
? Ha of rural landscape: 81,000	1.1, 2.1, 2.3	Total costs: preparation & implementation of pastoral conventions, investment through APFS. Overall, unit cost of USD 14.7 per ha
CI3: Total number of policies/plans that will mainstream climate resilience: 39	2.1	Unit cost of USD 3,400 per plan (not counting implementation cost of pastoral conventions)
CI4: Total number of people trained: 15,200		
? of which total no. of people at line ministries: 100	1.3, 1.4	Unit cost of USD 260
? of which total no. of community /association members: 15,000	1.1, 1.2, 2.3, 2.2, 3.4	APFS: total cost of USD 1,388,000 for 15,000 direct trainees (unit cost of USD 92)
? of which total no. of extension service officers: 100	1.3, 1.4	Unit cost of USD 260 (not counting the extension officers who may be trained as APFS facilitators under Output 2.3)

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).

1. Response to pending comments from GEF Secretariat Review at PIF stage

	Comment	Response
1	Recent proposals from FAO showed a strong optimism at PIF level with cofinancing in grant or cash, creating a lot of expectations. However, these expectations were disappointing with a difficulty to confirm cofinancing in cash from partners and a difficulty also to mobilize core funds from FAO. We would like to avoid such situation, be sure that all named partners were contacted, and that there are high probabilities to see the cofinancing confirmed. please, explain the current level of dialogue with IDB, CPEAP, ATI, and inside FAO (number of meetings, minutes, notes, agreements...)	The cofinancing plan has been updated from the PIF to reflect accurate and relevant investments. A limited number of partners has been selected and engaged with, with a view to secure sound cofinancing partnerships. The detail of consultations is presented in Annex I2.
2	Is there a preliminary geo-reference to the project?s/program?s intended location? To be confirmed at CEO endorsement.	See Figure 3 and Section 1.b
3	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? To be confirmed at CEO endorsement.	See Annex I2.
4	Please, include a gender action plan in the PPG to influence the result framework. For the time being, gender issues are not properly mainstreamed, and we are not seeing actions against inequalities between men and women. Disaggregated data for the beneficiaries is not enough.	A detailed gender analysis and gender action plan have been prepared during the PPG phase (Section 3), with the help of a dedicated Gender Expert and through thorough literature review, interviews as well as community consultations in the field. In addition, gender aspects have been taken into account in the TAPE and MTM assessments; all these analyses have directly informed the project intervention strategy and results-based framework.
5	Is the case made for private sector engagement consistent with the proposed approach? To be checked at CEO endorsement.	Private sector engagement is described in Section 4.

6	The risk of drought is just mentioned: we would like to see a more elaborated reasoning on how the project will respond to droughts using GEF and LDCF resources.	The risk of drought belongs to the climate-related risks tackled by the project. Specific measures to be taken to address this risk include the promotion of water-efficient agricultural techniques, the restoration of 10,000 ha of degraded land through the innovative mechanised za? process (helping to optimise the use of precipitation by decreasing run-off) and the promotion of drought-resistant crops. In addition, a dedicated Climate Risk Assessment will be conducted in the inception phase of project implementation, with a view to further document potential impacts of droughts and suggest complementary coping strategies.
7	More is needed to improve KM and synergy with other initiatives, especially from GEF and LDCF.	Component 4 on knowledge management has been significantly upgraded from the PIF. In terms of coordination with other initiatives, specific knowledge-management opportunities (exchange visits, coordination meetings with cofinancing partners, seminars etc.) are planned to leverage synergies ? including with relevant GEF and LDCF initiatives in the region (e.g. upcoming projects ?Improving the climate resilience of agro-sylvo-pastoral production systems in Burkina Faso? and ?Restoration of degraded landscapes for sustainable food systems in the Peanut Basin and Eastern Senegal?). Whenever possible, the national GEF Focal Point will be invited and associated to knowledge management and coordination activities (e.g. the GEF Focal Point will co-chair biannual meetings of the cofinancing partners).

2. Response to comments from STAP at PIF stage

	Comment	Response

1	Minor isues to be considered during project design. STAP welcomes FAO?s GEF-LDCF project. The project seeks innovations in environmental governance, land management, and agricultural productivity to improve agro-sylvo-pastoral food systems and livelihoods. STAP is pleased the project recognized a comprehensive set of stressors, and their various linkages, which influence the target area; though further analysis of whether the intervention outcomes are sufficient to stay ahead of these would be useful. The theory of change depicts well these drivers and the asusmptions, but does not ask critically whether their impact may increase at a rate faster than is ameliorated by the intervention. To accompany the theory of change figure, STAP recoomends writing a narrative that describes the feedback loops, the causal pathways necessary to reach the project objective, the assumptions that underlie the success of the theory of change, and why this set of outcomes is necessary and sufficient to achieve the intervention title/goal. STAP also welcomes the project?s recognition to obtain and use climate information, and data, to assess the urgent and long-term adaptation needs of the project. STAP recommends using climate data and information combined with stakeholder assessments of climate risks to identify the key variables the project should address to achieve resilience of the targeted social-ecological system. To identify the key variables and map the causal pathways, STAP recommends applying a systems analysis during the project design, and assessing the needs for resilience, adaptaiton and transformational change. Given the current climate stressors affecting Mali, it is higly possible that a range of options, adaptationa nad tranformational change, will	? The ?Barriers and ?Alternative scenario? sections have been significantly updated and expanded to detail the reasoning behind the design of outputs, outcomes and impacts, as well as causal relationships behind them. ? A preliminary climate impact analysis has been included and supports the intervention rationale. A detailed Climate Risk Assessment will be conducted during the inception stage of project implementation to further substantiate and, as necessary, refine project interventions. This Climate Risk Assessment was initially planned to be carried out during the PPG phase but, due to national circumstances as well as difficulties related to the pandemic, it had to be postponed. ? USAID?s Climate risk profile for Mali has been used and referenced in the project document.

2	Yes, though component 3 in particular emphasises shorter-term actions without affirming the intent or mechanisms for these better value chains to actually improve livelihoods on the ground ? it would be useful to ensure the logic and actions that will ensure this link are clear, and perhaps shown as an outcome. Similarly, out scaling under Component 4 is unlikely to happen just by dissemination of results and awareness raising ? what complementary activities will ensure action uptake and implementation?	Both Components 3 and 4 have been substantially updated from the PIF, in particular to address the concerns raised by STAP.

3	Yes, a description of the connections between variables is given. STAP recommends applying systems thinking and developing a theory of change to map the feedback loops between the most important variables, building on the first part of the attached TOC. In addition, STAP recommends analysing the barriers to, and enablers of, scaling and transformational change. This will assist the project developers to assess the project?s resilience to climate and non-climate stressors, and identify challenges and opportunities for adaptation and, or, transformational change. STAP?s primer on theory of change can assist in this regard as well as the Resilience, Adaptation Pathways, Transformation guidelines. Please note that uncertainty in the levels and rates of climate change, as well as other changes such as demographic, technological, economic, etc is not discussed. In fact such uncertainty should lead to a critical assessment of the proposed intervention to ensure it is robust to these changes happening slower or faster or differently to the central assumptions taken here. This might result in some different actions to those proposed here. Note: section 1a.1(b) suggest that desire to reduce migrations towards cities; yet the project description raises the potential to engage with Diaspora NGOs in relation to investing remittances. This could come through as a stronger opportunity, see below, rather than seeing is as all negative. For example, the last barrier is access to credit, but this might be an explicit route to mitigating and even setting directions with regard to this barrier, implying the Diaspora NGOs and through them the diaspora itself might be engaged with to this end. This idea seems present but not well-articulated with its implications for perhaps	? The Theory of Change has been revised from the PIF. Barriers have been further described and substantiated by specific baseline elements arising from PPG studies (including TAPE and MTM assessments). ? Uncertainty, in particular in terms of climate variability, has been discussed in the project document. The risk table also includes uncertainty concerns. ? STAP?s suggestion on net soil water balance reporting is well noted and will be taken into account when conducting the detailed Climate Risk Assessment. ? The project strategy related to the use of remittances has been revised ? see ?Changes from the PIF? section. Overall, the project strategy related to youth emigration (documented by the TAPE assessment) and access to credit is outlined in the description of Component 3.

4	Only a baseline narrative is provided identifying projects that will complement this GEF/LDCF project.	A substantial baseline section has been added, with contribution from the TAPE and MTM assessments (also annexed to the project document).
5	Partly. Projects that will complement this GEF/LDCF investmnet are described, but the lessons are not obviously highlighted.	Lessons learned have been further described throughout the project document (e.g. box on lessons learned from APFS and Table 16 on capitalisation on lessons learned from the Terminal Evaluation of FAO-GEF project #4822.
6	STAP recommends developing a narrative that accompanies the theory of change figure. The assumptions should be part of this narrative. At present there are too many assertions such as ?for a that prompted dialogue?have the potential to ? diminish tensions?, we agree generally, but what is the evidence and is this enough in this context? In particular is this set of actions necessary and sufficient to achieve the desired outcomes?	The theory of change figure is supported by the thorough description of barriers, baseline situation and alternative scenario.
7	See above. Also note, Outcome 3, p38 ?Kayes region suffers from rural emigration?? ? understood but whilst one alternative is to incentivize the youth, another opportunity could be to actively mobilise their remittances to drive local entrepreneurship or even linked across regions per the Youth Incubators. Also Outcome 4 is dissemination the objective, or really to get resulting changed behaviour? If the correct outcome is specified, the TOC is more likely to identify the right set of actions to achieve it.	Noted, please see proposed redesign of Components 3 and 4.

8	See above. Whether this set of actions is necessary and sufficient to effect the desired change should be addressed explicitly, as should the question of whether these actions collectively can plausibly achieve improvements faster than the pressures from climate change, demographic change, conflict, etc undermine these outcomes.	Please see response to Comment 6 above.
9	The project recognises ??there is need to have information and data on CC vulnerability of agro-sylvo-pastoral small holder food systems in order to address urgent and long-term needs?. However, it remains unclear how climate data, or an assessment of resilience, adaptation, and, or, transformational change needs will be used to design the project. Monitoring and learning needs to be better related to the TOC generally.	Component 4 has been significantly revised to become more ambitious with respect to M&E as well knowledge management and upscaling potential. Climate information will be used in particular to tailor APFS curricula to specific vulnerabilities co-identified with communities themselves.
10	Yes. However, STAP encourages the project developers to use the land degradation neutrality baseline and LDN indicators that Mali will be using in addition to the number of hectares. These LDN indicators, in particular soil organic carbon, is a better representation for land-based global environmental benefits. A key issue for LDN is that of leakage ? it is not enough to improve a particular land type on one area, that land type must not then be degraded elsewhere ? the totality of LDN objectives may be beyond this intervention but it should at least be observing whether good outcomes are being outweighed by clearing or degradation elsewhere.	The Results-Based Framework has been thoroughly revised from the PIF. In particular, and as suggested by STAP, a sub-target of Objective Indicator (ii) is ?30,000 ha showing increased land productivity?. This will directly contribute to Mali?s LDN target of ?Decreasing by 50 per cent the area of forest, cultivated land and pasture, affected by a decline in net land productivity, that is about 1,000,000 ha?.

11	The project will embed an array of climate resilient activities to increase its resilience to climate change. The project also will use early warning systems, and make use of other technologies and approaches. However, a deeper analysis should be undertaken of whether there might be interventions that are more robust to uncertain levels of climate changes, and a consideration of an adaptation pathways approach to ensure unintended path dependencies do not reduce future adaptativeness. In particular it would be useful to do some simple calculations to ask whether the plausible rates of improvement in productivity or livelihoods derived from the interventions here are greater or less than plausible rates of deterioration due to climate, increasing demands from population increase, or other changes, and are the value chains being supported able to persist/expand in the face of climate change, changes in demand, etc? If not in any of these cases, are there completely different solution options?	Comment partly addressed: see response to Comment 3. Although the project developpers do understand STAP?s suggestion and reasoning, given the relative flexibility embedded in APFS curricula to meet local specificities and remain demand-driven, the suggested calculations seemed difficult to carry out at PPG stage.
12	Yes, the proposal is innovative in its design, particularly for its methods on policy, and financing. STAP encourages the project developers to also describe further how it plans to scale these innovations in the context of achieving systems change and durable outcomes. Transformational change and long-term impact may depend on innovation. STAP suggests for the project developers to consult its paper on enduring outcomes.	Please see redesign of Component 4 for greater ambition and further description of synergies & knowledge-exchange potential.

13	STAP welcomes the stakeholder consultation that have taken place, and the detailed plans for future engagements to ensure that the drivers of degradation and stressors are identified for effective project design. In the final project document, STAP recommends describing how the stakeholders? roles will contribute to achieving the project outcomes.	Please see Annex I2.
14	STAP welcomes the plan to effectively engage and empower women as a result of the project. While pursuing gender actions, STAP encourages the project developers to think whether gender considerations hinder the full participation of an important stakeholder group? If so, how will these obstacles be addressed And given 60% diaspora remittances are directed to women, there should be sensitivity in any re-alignment of these.	Please see fully-fledged Gender Analysis and Gender Action Plan, as well as gender considerations embedded in TAPE and MTM assessments. The project no longer proposes to try to tap into remittances, but has developed a more viable alternative as described in the components?sections.
15	Yes, when the TOC is developed more fully during the project design, the project developers may wish to consider whether they have included the relevant projects to extract learning. And also revisit the range of partners/stakeholders engaged for example, the Diaspora NGOs have disappeared in this list.	Please see response to Comment 5. The project strategy relating to diaspora NGOs has been changed, as it appeared too complex and inefficient to focus the PPG phase on this direction.

3. Response to comments from GEF Council Members at PIF stage

Germany

	Comment	Response

1	Germany strongly urges FAO to clarify how it draws lessons from similar existing projects, especially climate adaptation efforts supported by UNDP and GIZ (funded by BMU) and small-scale irrigation projects funded by German financial and technical cooperation at country-level, and by the Spanish cooperation in Kayes. Before starting implementation, FAO should also reach out to the ?Green Innovation Centres? financed by German technical cooperation, focusing on value chain approaches in rural Mali, as well as WFPs ?Sahel Resilience Initiative?, also active in the region.	Lessons learned from the baseline, GIZ-funded project PADRE (Projet d?Appui ? la D?centralisation et ? la R?gionalisation) have been incorporated into the project design, especially with respect to the support brought by PADRE to the Di?ma CLOCSAD. The Green Innovation Centres for the Agriculture and Food Sector (GIC) programme is described in Section 6b as one of the baseline projects which has inspired some of the project?s interventions. In particular, investments from the GIC programme in the circles of Y?liman?, Nioro du Sahel and Di?ma are particularly relevant in terms of climate-smart agricultural practices as well as value chain support. During the implementation phase of Output 2.3 and Component 3, detailed coordination and lessons learned will be collated from this programme to further help identify the best practices that can be supported through the APFSs as well as specific value chains that have proven efficient. Although the Kayes region is not a prioritised zone identified through the integrated Context Analysis of WFP?s ?Integrated Resilience in the Sahel? initiative, some of the lessons learned from value chain support by this programme could indeed be useful to incorporate in Component 3?s selection of value chains. Coordination will be sought under this Component with WFP.
2	Germany asks to clarify whether significant political and legal framework conditions were analyzed and whether the project?s alignment with the national land law (Loi Fonci?re) and associated action plan, as well as the National Small Irrigation Program (PNIP), was assessed. If not, Germany recommends including a section on the project?s contributions to these action plans, as well as potential synergies.	The proposed project is fully aligned with the Agricultural Land Tenure Law (2017), which established the various local committees in charge of land management as well as conflict resolution. The proposed project supports the implementation of this law insofar as it will develop the capacity of these very committees under Component 1, with a view to help them fulfil the mandates assigned to them. The proposed project will directly contribute to Objective 1 set by the Programme National d?Irrigation de Proximit? (PNIP), namely ?implementing functional hydro-agricultural schemes in response to the demand of the populations over 132,000 ha of land?. Even though the PNIP?s results-based framework expired in 2020, the proposed project will work directly with the Direction Nationale du G?nie Rural and its extension offices to ensure that irrigation systems implemented under Component 2 are in line with official priorities.
3	Germany suggests reviewing the project document as to identify whether remittances, which are particularly relevant in the Kayes region, could be harnessed to contribute to project objectives.	Please see response to Comment 5 from STAP. The project strategy relating to diaspora NGOs has been changed, as it appeared too complex and inefficient to focus the PPG phase in this direction.

4	Germany asks to revise the stakeholder engagement section to identify capacities and weaknesses of partner organizations, incl. the National Directorate for Agriculture (DNA) and Food Security Commission (Commissariat de Securit? Alimentaire). If significant risks are identified, the risk section should be updated accordingly.	The stakeholder engagement section has been revised. In addition, an assessment of the operational capacities of three potential partner organisations ? namely DNA, AEDD and DNEF ? is being conducted by an independent, international auditor prior to the institutional arrangements being finalised. This is in line with FAO?s Operational Partners Implementation Modality (OPIM) procedures. The execution partner will be selected based on this assessment, and mitigation action to any identified risks will be incorporated into the project design.
5	Germany further asks for further elaboration on the link between the NDC/NAP process and the project components, outcomes, and indicators.	Coordination with the NAP process is further detailed in Section 7.
6	Germany recommends submitting the project proposal for discussion to the donors' group in Mali (Groupe Th?matique Economie Agricole Rurale), coordinated by FAO and German development cooperation. In this context, Germany also suggests establishing cooperation with the Programme for the Support of the National Strategy for Adaptation to Climate Change in Mali, implemented by GIZ.	Please note that coordination will also be sought with the ?Programme for the promotion of agroecological cropping systems and soil protection in Mali? under formulation to be funded by the German Cooperation and executed by DNA.
7	Germany welcomes that gender-sensitive approaches are explicitly considered in two out of the four project components. Germany would appreciate if the remaining two components would also include the aspect of gender equality.	Please see the extensive gender action plan developed during the PPG phase that addresses this concern (Section 3).

Canada

	Comment	Response
1	It?s not clear whether the project is demand-driven and addresses specific environmental and adaptation problems including the root causes and barriers that to be addressed?	The project is demand-driven and addresses the specific problems, as reflected in the new Stakeholder Engagement Plan, Alternative Scenario section, and alignment with national strategies and plans.
2	It?s not clear whether the project s aligned with the relevant GEF focal area elements as defined by the GEF 7 Programming Directions (Biodiversity, climate change mitigation, climate change adaptation, land degradation or will the project contribute to the delivery of Global Environmental benefits against GEF-7 targets for core indicators?	Please see Section 1.4 and Annex F. The GEF and LDCF financing focuses on delivering global environmental benefits and adaptation benefits, adopting an agroecology approach, which also embraces a number of socio-economic and enabling environment benefits.

3	It?s not clear whether the project is consistent with national priorities and more specifically is aligned and will support/contribute to Malian sectoral development priorities and action Plans (National Poverty Reduction Strategy, PNISA, PRISA, NAP, PNIP, Programme national du d?veloppement de l??levage) or national reports and assessments under the relevant conventions?	Please see Section 7, which responds to the question of alignment with national priorities.
4	It?s not clear whether the project is capitalizing on previous GEF funded projects in Mali as the GEF6 project developed by AfDB on the regions of Kayes, Koulikoro and Segou?	Please see Section 6b (first project described).
5	It?s not clear whether the project s promoting and will contribute to coordination trough institutional project/program arrangement including management, monitoring and evaluation with bilateral/multilateral initiatives/projects/ programs in the targeted area?	The project will contribute to such coordination, as described in Section 6b. The donor group to be established and supported by the project will also contribute to this objective.
6	It?s not clear whether the project is integrating gender context and specific and realistic gender strategy include a gender action plan and result framework promoting WEE and Genders transformative approach?	Please see the gender analysis that was carried out during PPG and the gender action plan that was developed consequently. (Section 3).
7	It?s not clear whether the project is considering potential major risks, including the consequences of climate change but also security/instability in the current Mali context 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?	Please see the Risk analysis (Section 5A). Furthrmore, a thorough climate change risk assessment is planned for during project implementation.
8	Is the design / planning processes was based and prioritized a participative approach and strong national and local stakeholders (including engagement and ownership (Government departments, regional technical services, Local government and municipalities, farmer and women organisations, development NGO, private sector promoting a demand-driven and not a supply- driven approach?	Yes, a participatory approach was followed throughout the development process, both during PIF development and the PPG phase. This is thoroughly reflected in Annex I2 and Section 2. Also the approaches adopted for the implementation phase emphasise the role and importance of inclusiveness and participation in decision-making, management and monitoring.

9	It?s not clear whether the project is able to confirm co-financing resource amount taking into account the Malian context and experience learned. Donors and International development community partnershave showed in the past too much strong optimism creating a lot of expectation that were disappointing in the implementation phase of their project. It might be relevant in order to foster institutionalization and local ownership to identify formalized contribution from the national budget?	Please see co-financing letters annexed to the project document. Extensive discussions with the co-funders have been conducted during the PPG phase to ensure that pledged co-financing would actually be delivered.
10	It?s not clear whether the project has potential for innovation, sustainability and scaling up in long term range through national political and institutional mechanisms and include a strategy and identify means for future engagement to transfer accountability and governance responsibility to national and local stakeholders?	Please see Section 1.7.
11	More clarification should be also requested on identification of clear objectives against GEF Work Program Core indicators (adaptation?) and Global Environment Benefit (GEB)	Please see Annex F.
12	More clarification should be also requested on co-financing: including expected amounts, sources and types of co-financing (consistent with the requirements of the GEF Co-Financing Policy and Guidelines).	Please see co-financing letters annexed as well as Section 1.5 (Incremental/additional cost reasoning).
13	More clarification should be also requested on Gender strategy and action plan with Gender integration in the Performance Management framework	Please see the gender analysis and action plans elaborated during the PPG phase (Section 3) as well as the revised Results-Based Framework (Annex A1).
14	More clarification should be also requested on alignment with national and regional, development priorities and coordination (including implementation arrangement) with other GEF, LDCF and relevant sectoral development projects of other partners in the targeted region	Please see Sections 6b and 7.
15	More clarification should be also requested on value for money Analysis	All proposed interventions have been selected based on effectiveness but also efficiency criteria. One example is the exchange visits to be organised under Output 2.3 so that farmers who do not benefit directly from APFS training can be exposed to best climate-smart practices, thereby increasing the potential impact of the project investment.
16	More clarification should be also requested on strategy and action plan to ensure sustainability of project results/achievement	Please see Section 1.7.

USA

1	Provide more detail on how the proposal plans to address any issues of limited capacity that arise, based on the complexity of the project.	The project is complex, but builds on expertise and knowledge that is available nationally and locally. Furthermore, not 1 single partners will be entrusted with the delivery of the full project, but rather an array of different stakeholders and development partners will be engaged to deliver specific activities and outputs. FAO, as technical agency and GEF agency, will provide technical oversight and support.
2	Consider the need to adjust the time frame of the project to fully achieve the outcomes described that encourage local ownership rather than direct delivery by the project itself.	The project duration is 5 years, maximising time for the generation of results on the ground, within the limitations of the project management costs. Furthermore, during the PPG phase already, different stakeholder groups have been engaged in the process, therefore mobilising critical actors for uptake and integration of project results in the medium to long term.
3	In reference to component 3 outputs, provide additional information on how to develop the skills and will to implement this project beyond the cooperative membership. Was this reorientation toward a circular economy sought by the cooperatives or the regional or sub-regional governments of Kayes?	Circular economy is part and partial of the agroecological transition approach (it is one of ten elements), and key stakeholders in Kayes called for this approach to develop the rural areas in a resilient, equitable and sustainable fashion. In particular, youths consulted during the PPG phase showed a keen interest to engage with such activities.
4	The proposed Delfino plowing technique requires a specially built, robust plow and typically requires a powerful all-wheel drive tractor, both of which are very expensive. Please clarify how to deal with these costs. Does the project intend to provide these directly or find a sustainable approach to deliver these plowing services through private service delivery?	The equipment and training requirements associated with the use of the Delfino techniques have been well identified. Although this technique has not been used in Mali before, consultations were held with the FAO Burkina Faso office, which has been implementing the Delfino technique with success. Communicating with FAO BF allowed to budget for realistic acquisition, operation and maintenance costs. These have been reflected in the project budget adequately. Since the equipment is currently not available in Mali, it has been decided to acquire it. During project implementation, specific modalities for the sustained maintenance and use of the equipment will be discussed with DNA, so that it can deliver additional benefits beyond the scope of the project interventions.

5	In addition, we expect that FAO in the development of its full proposal will: ? Provide more information on how beneficiaries, including women, have been involved in the development of the project proposal and will benefit from this project; ? Engage local stakeholders, including community-based organizations, environmental non-governmental organizations and the private sector in both the development and implementation of the program; and ? Provide more information on how the implementing agency and its partners will communicate results, lessons learned and best practices identified throughout the project to the various stakeholders both during and after the project.	? A full gender analysis and gender action plan have been developed during the PPG phase and have been integrated into the project document. ? Annex I2 includes the stakeholder engagement plan, and CSOs, NGOs, and other organized forms of the beneficiary communities are important stakeholders considered at all levels of the project, throughout its cycle. ? A section on knowledge management lays out how results and lessons are being captured, developed and disseminated.

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

GCP /MLI/061/LDF PPG Grant Approved at PIF: **66,494**			
Project Preparation Activities Implemented	***GETF/LDCF/SCCF Amount ($)***		
	Budgeted Amount	***Amount Spent Todate***	***Amount Committed***
(5013) Consultants	38,940	7,179	
(5014) Contracts	4,950	0	
(5021) Travel	8,910	0	
(5023) Training	13,694	0	
Total	**66,494**	**7,179**	59,315

GCP /MLI/059/GFF PPG Grant Approved at PIF: **133,506**			
Project Preparation Activities Implemented	***GETF/LDCF/SCCF Amount ($)***		
	Budgeted Amount	***Amount Spent Todate***	***Amount Committed***
(5013) Consultants	79,060	12,679	
(5014) Contracts	10,050	41,898	
(5021) Travel	19,090	891	
(5023) Training	26,306	0	
Total	**133,506**	**55,468**	78,038

ANNEX D: Project Map(s) and Coordinates

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

See Figures 2, 3, 6, 12 and 16.

ANNEX E: Project Budget Table

Please attach a project budget table.

FAO Cost Categories	Unit	No. of units	Unit cost	Component 1		Component 2		Component 3		Component 4		M&E	PMC	Total GEF	OP: DNA	Other Executing Entities		FAO Support Services	Total GEF
				1.1	Total	2.1	Total	3.1	Total	4.1	Total					DNEF	AEDD		
5013 Consultants																			
Implementation of B-INTACT	Lump sum	2	10000	0	**0**	10,000	**10,000**	0	**0**	10,000	**10,000**		0	20,000			20,000		20,000
International expert in capacity-building on climate vulnerability & EIA	Days	29	400	11,600	**11,600**	0	**0**	0	**0**	0	**0**	0	0	11,600			11,600		11,600
International agro-pastoral field school expert	Days	30	400	0	**0**	12,000	**12,000**		**0**		**0**			12,000	12,000				12,000
International climate risk assessment expert	Days	40	400	0	**0**	16,000	**16,000**	0	**0**	0	**0**	0	0	16,000			16,000		16,000
International agroecology expert(s)	Days	50	500	0	**0**	25,000	**25,000**	0	**0**	0	**0**	0	0	25,000	25,000				25,000
Sub-total international Consultants				11,600	**11,600**	63000	**63,000**	0	**0**	10,000	**10,000**	0	0	84,600	37000	0	47600	0	84,600
National climate risk assessment expert	Days	40	145	0	**0**	5,800	**5,800**	0	**0**	0	**0**	0	0	5,800			5,800		5,800
National expert in institutional capacity-building	Days	91	145	13,195	**13,195**	0	**0**	0	**0**	0	**0**	0	0	13,195			13,195		13,195
National expert in territorial market platforms	Days	152	145	22,040	**22,040**	0	**0**	0	**0**	0	**0**	0	0	22,040	22,040				22,040
National expert in capacity-building on climate vulnerability & EIA	Days	105	145	15,225	**15,225**	0	**0**	0	**0**	0	**0**	0	0	15,225			15,225		15,225
National expert in M&E for climate adaptation & BD conservation	Days	49	145	7,105	**7,105**	0	**0**	0	**0**	0	**0**	0	0	7,105			7,105		7,105
National expert in land management	Days	252	145	0	**0**	36,540	**36,540**	0	**0**	0	**0**	0	0	36,540			36,540		36,540
National expert in community listening groups & Dimitra approach	Days	255	145	0	**0**	36,975	**36,975**	0	**0**	0	**0**	0	0	36,975	36,975				36,975
National agroecology expert	Days	2	145	0	**0**	290	**290**	0	**0**	0	**0**	0	0	290	290				290
National nutrition & alimentation expert	Days	2	145	0	**0**	290	**290**	0	**0**	0	**0**	0	0	290	290				290
National commercial plans expert	Days	120	145	0	**0**	0	**0**	17,400	**17,400**	0	**0**	0	0	17,400	17,400				17,400
National recycling & environment specialist	Days	112	145	0	**0**	0	**0**	16,240	**16,240**	0	**0**	0	0	16,240	16,240				16,240
National JFFLS expert	Days	147	145	0	**0**	0	**0**	21,315	**21,315**	0	**0**	0	0	21,315	21,315				21,315
Local construction Supervisors	Days	160	100	0	**0**	0	**0**	16,000	**16,000**	0	**0**	0	0	16,000	16,000				16,000
Project Coordinator	Months	60	2250	28,400	**28,400**	28,400	**28,400**	28,400	**28,400**	0	**0**	0	49,800	135,000	135,000				135,000
APFS Master Trainer	Months	60	1800	0	**0**	108,000	**108,000**	0	**0**	0	**0**	0	0	108,000	108,000				108,000
M&E Officer	Months	60	1800	0	**0**	0	**0**	0	**0**	0	**0**	108,000	0	108,000	108,000				108,000
Communication Officer	Months	30	1800	10,800	**10,800**	12,600	**12,600**	12,600	**12,600**	18,000	**18,000**	0	0	54,000	54,000				54,000
Gender & Participatory territorial diagnostic Officer	Months	60	1800	0	**0**	54,000	**54,000**	54,000	**54,000**	0	**0**	0	0	108,000	108,000				108,000
Financial & Administrative Officer	Months	60	1600	0	**0**	0	**0**	0	**0**	0	**0**	0	96,000	96,000	96,000				96,000
Project Technical Assistant	Months	60	750	9,000	**9,000**	10,500	**10,500**	9,000	**9,000**	9,000	**9,000**	0	7,500	45,000	45,000				45,000
Local project Officers (three)	Months	180	1600	0	**0**	142,000	**142,000**	142,000	**142,000**	0	**0**	0	4,000	288,000	288,000				288,000
Sub-total national Consultants				105,765	**105,765**	435,395	**435,395**	316,955	**316,955**	27,000	**27,000**	108,000	157,300	1,150,415	1,072,550	0	77,865	0	1,150,415
5013 Sub-total consultants				**117,365**	**117,365**	**498,395**	**498,395**	**316,955**	**316,955**	**37,000**	**37,000**	**108,000**	**157,300**	**1,235,015**	**1,109,550**	**0**	**125,465**	**0**	**1,235,015**
5650 Contracts																			
Construction of market infrastructures	Lump sum	1	231,190	0	**0**	0	**0**	231,190	**231,190**	0	**0**	0	0	231,190	231,190				231,190
Translation	Lump sum	2	3,600	0	**0**	0	**0**	0	**0**	7,200	**7200**	0	0	7,200				7,200	7,200
Terminal TAPE assessment	Lump sum	1	50,000	0	**0**	0	**0**	0	**0**	50,000	**50000**	0	0	50,000	50,000				50,000
Audits	Lump sum	5	10,000	0	**0**	0	**0**	0	**0**	0	**0**	0	50,000	50,000				50,000	50,000
Spot checks	Lump sum	5	5,000	0	**0**	0	**0**	0	**0**	0	**0**	0	25,000	25,000				25,000	25,000
Terminal report	Lump sum	1	7,000									7,000		7,000				7,000	7,000
Mid Term Evaluation	Lump sum	1	40,000									40,000		40,000				40,000	40,000
Terminal Evaluation	Lump sum	1	40,000									40,000		40,000				40,000	40,000
Contract to support micro-finance services	Lump sum	1	155,000	0	**0**	0	**0**	155,000	**155,000**	0	**0**	0	0	155,000	155,000				155,000
Participatory video production for APFS & JFFLS	Lump sum	1	15,000	0	**0**	15,000	**15,000**	0	**0**	0	**0**	0	0	15,000	15,000				15,000
Maintenance of accounting software	Lump sum	2	4,000										8,000	8,000	8,000				8,000
Database system procurement, installation & training	Lump sum	1	13,000							13,000	**13000**			13,000	13,000				13,000
Website hosting	Monthly	54	100							5,400	**5400**			5,400	5,400				5,400
Printing of APFS training manuals	Lump sum	1	10,000	0	**0**	10,000	**10,000**	0	**0**	0	**0**	0	0	10,000	10,000				10,000
Contract to support the implementation of certification	Lump sum	1	70,000	0	**0**	0	**0**	70,000	**70,000**	0	**0**	0	0	70,000	70,000				70,000
5650 Sub-total Contracts				**0**	**0**	**25,000**	**25,000**	**456,190**	**456,190**	**75,600**	**75,600**	**87,000**	**83,000**	**726,790**	**557,590**	**0**	**0**	**169,200**	**726,790**
5021 Travel																			
Field visit	Lump sum	1	201,640	47,315	**47,315**	70,170	**70,170**	72,695	**72,695**	11,460	**11,460**	0	0	201,640	147,600		54,040		201,640
International travel	Lump sum	1	115,000	7,075	**7,075**	7,845	**7,845**	43,400	**43,400**	52,950	**52,950**	3,730	0	115,000	105,705		9,295		115,000
Domestic travel	Lump sum	1	70,000	0	**0**	0	**0**	0	**0**	70,000	**70,000**	0	0	70,000	70,000				70,000
5021 Sub-total travel				**54390**	**54,390**	**78015**	**78015**	**116095**	**116,095**	**134410**	**134,410**	**3730**	**0**	**386,640**	**323,305**	**0**	**63,335**	**0**	**386,640**
5023 Training																			
Workshop for SCAT revision	Lump sum	44	270	0	**0**	11,880	**11,880**	0	**0**	0	**0**	0	0	11,880			11,880		11,880
Workshop for revision of pastoral conventions	Lump sum	1	45,780	0	**0**	45,780	**45,780**	0	**0**	0	**0**	0	0	45,780			45,780		45,780
Workshop for Dimitra clubs/ listening groups	Lump sum	1	90,000	0	**0**	90,000	**90,000**	0	**0**	0	**0**	0	0	90,000	90,000				90,000
Workshop on APFS curricula	Lump sum	1	4,920	0	**0**	4,920	**4,920**	0	**0**	0	**0**	0	0	4,920	4,920				4,920
Workshop for master facilitators	Lump sum	1	10,685	0	**0**	10,685	**10,685**	0	**0**	0	**0**	0	0	10,685	10,685				10,685
Workshoping costs (APFS sessions)	Lump sum	1	16,000	0	**0**	16,000	**16,000**	0	**0**	0	**0**	0	0	16,000	10,000	6,000			16,000
Workshop recycling of facilitators	Lump sum	1	1,250	0	**0**	1,250	**1,250**	0	**0**	0	**0**	0	0	1,250	1,250				1,250
Workshop on horticulture	Lump sum	1	24,000	0	**0**	0	**0**	24,000	**24,000**	0	**0**	0	0	24,000	24,000				24,000
Workshop on land access for youths & women	Lump sum	1	2,000	0	**0**	0	**0**	2,000	**2,000**	0	**0**	0	0	2,000	2,000				2,000
Inception workshop	Lump sum	1	10,200	0	**0**	0	**0**	0	**0**	0	**0**	10,200	0	10,200	10,200				10,200
Workshop of cofinancing partners	Lump sum	1	6,718	0	**0**	0	**0**	0	**0**	6,718	**6,718**	0	0	6,718	6,718				6,718
Workshop on agroecology	Lump sum	1	75,000	0	**0**	0	**0**	0	**0**	75,000	**75,000**	0	0	75,000	75,000				75,000
Regional seminar on agroecological transition	Lump sum	1	30,000	0	**0**	0	**0**	0	**0**	30,000	**30,000**	0	0	30,000	30,000				30,000
Annual stocktaking workshops for APFS facilitators	Lump sum	4	15,000	0	**0**	60,000	**60,000**	0	**0**	0	**0**	0	0	60,000	60,000				60,000
Knowledge exchange with Central Africa Field School Network, AFAAS, Global FFS Platform etc.	Lump sum	1	10,000	0	**0**	0	**0**	0	**0**	10,000	**10,000**	0	0	10,000	10,000				10,000
APFS training costs	Lump sum	1	674,424	0	**0**	674,424	**674,424**	0	**0**	0	**0**	0	0	674,424	474,424	200,000			674,424
APFS facilitation fees	Per mo per APFS	12000	54	0	**0**	648,000	**648,000**	0	**0**	0	**0**	0	0	648,000	498,000	150,000			648,000
Training of Delfino operators	Lump sum	1	5,000	0	**0**	5,000	**5,000**	0	**0**	0	**0**	0	0	5,000	5,000				5,000
Training on Diversity Field Fora	Lump sum	1	55,000	0	**0**	55,000	**55,000**	0	**0**	0	**0**	0	0	55,000	55,000				55,000
Training through exchange sessions for APFS	Lump sum	1	55,000	0	**0**	55,000	**55,000**	0	**0**	0	**0**	0	0	55,000	55,000				55,000
Training material for APFS	Lump sum	1	78,350	0	**0**	78,350	**78,350**	0	**0**	0	**0**	0	0	78,350	78,350				78,350
Training on GIS for project staff	Lump sum	1	3,000							3,000	**3,000**			3,000	3,000				3,000
Meetings of the Project Steering Commit	Lump sum	5	10,000	0	**0**	0	**0**	0	**0**	0	**0**	50,000	0	50,000	50,000				50,000
5023 Sub-total training				**0**	**0**	**1,756,289**	**1,756,289**	**26,000**	**26,000**	**124,718**	**124,718**	**60,200**	**0**	**1,967,207**	**1,553,547**	**356,000**	**57,660**	**0**	**1,967,207**
5024 Expendable procurement																			
Small equipment for COFOs	Per COFO	22	2,434	53,550	**53,550**	0	**0**	0	**0**	0	**0**	0	0	53,550			53,550		53,550
Communication materials	Lump sum	1	35,430	7,000	**7,000**	0	**0**	0	**0**	28,430	**28,430**	0	0	35,430	15,000	10,000	10,430		35,430
Small equipment (fences, hand tool, water point equipment)	Lump sum	1	350,000	0	**0**	350,000	**350,000**	0	**0**	0	**0**	0	0	350,000			350,000		350,000
Seeds & organic fertiliser	Lump sum	1	50,000	0	**0**	50,000	**50,000**	0	**0**	0	**0**	0	0	50,000	50,000				50,000
Maintenance of Delfino plows & tractors (incl. parts)	Per year	4	72,000	0	**0**	288,000	**288,000**	0	**0**	0	**0**	0	0	288,000	288,000				288,000
Small equipment for improved livestock keeping (salt blocks etc.)	Lump sum	1	60,000	0	**0**	60,000	**60,000**	0	**0**	0	**0**	0	0	60,000	60,000				60,000
Chicken & chicken feed	Per HH	65	400	0	**0**	0	**0**	26,000	**26,000**	0	**0**	0	0	26,000	26,000				26,000
Chicken coops	Lump sum	450	400	0	**0**	0	**0**	180,000	**180,000**	0	**0**	0	0	180,000	180,000				180,000
Small livestock	Heads	1200	128	0	**0**	0	**0**	153,600	**153,600**	0	**0**	0	0	153,600	153,600				153,600
Livestock feed	Tons	50	360	0	**0**	0	**0**	18,000	**18,000**	0	**0**	0	0	18,000	18,000				18,000
Small tools (welding, hand tools)	Lump sum	1	95,000	0	**0**	0	**0**	95,000	**95,000**	0	**0**	0	0	95,000	95,000				95,000
Small equipment to operationalise Kita neem press	Lump sum	1	2,700	0	**0**	0	**0**	2,700	**2,700**	0	**0**	0	0	2,700	2,700				2,700
Fodder seeds	Lump sum	1	4,500	0	**0**	0	**0**	4,500	**4,500**	0	**0**	0	0	4,500	4,500				4,500
Dairy cows	Per 3 cows	20	915	0	**0**	0	**0**	18,300	**18,300**	0	**0**	0	0	18,300	18,300				18,300
Provision to support loans (small means of transportation for recycling businesses)	Lump sum	1	50,000	0	**0**	0	**0**	50,000	**50,000**	0	**0**	0	0	50,000	50,000				50,000
Radio broadcasts for Dimitra clubs	Lump sum	1	20,000	0	**0**	20,000	**20,000**	0	**0**	0	**0**	0	0	20,000	20,000				20,000
Video productions for Dimitra clubs	Lump sum	1	20000	0	**0**	20,000	**20,000**	0	**0**	0	**0**	0	0	20,000	20,000				20,000
5024 Sub-total expendable procurement				**60,550**	**60,550**	**788,000**	**788,000**	**548,100**	**548,100**	**28,430**	**28,430**	**0**	**0**	**1,425,080**	**1,001,100**	**10,000**	**413,980**	**0**	**1,425,080**
6100 Non-expendable procurement																			
Delfino plows and tractors	Lump sum	2	180,000	0	**0**	360,000	**360,000**	0	**0**	0	**0**	0	0	360,000	360,000				360,000
Provision to support loans (refrigerated trucks)	Lump sum	5	5,000	0	**0**	0	**0**	25,000	**25,000**	0	**0**	0	0	25,000	25,000				25,000
Solar radios for Dimitra clubs	Lump sum	1	5,000	0	**0**	5,000	**5,000**	0	**0**	0	**0**	0	0	5,000	5,000				5,000

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.

N/A

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.

N/A

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).

N/A