



GEF-6 PROJECT IDENTIFICATION FORM (PIF)

PROJECT TYPE: Full-sized Project
 TYPE OF TRUST FUND: GEF Trust Fund

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PART I: PROJECT INFORMATION

Project Title:	Scaling up a multiple benefits approach to enhance resilience in agro- and forest landscapes of Mali's Sahel regions (Kayes, Koulikoro and Ségou)		
Country(ies):	Mali	GEF Project ID: ¹	9293
GEF Agency(ies):	AfDB (select) (select)	GEF Agency Project ID:	
Other Executing Partner(s):	Ministry of Rural Development; other: CILSS, Association La Voûte Nubienne	Submission Date:	13.07.2016
GEF Focal Area(s):	Multi-focal Areas	Project Duration (Months)	60
Integrated Approach Pilot	IAP-Cities <input type="checkbox"/> IAP-Commodities <input type="checkbox"/> IAP-Food Security <input type="checkbox"/>	Corporate Program: SGP <input type="checkbox"/>	
Name of parent program:	[if applicable]	Agency Fee (\$)	817,477

A. INDICATIVE FOCAL AREA STRATEGY FRAMEWORK AND OTHER PROGRAM STRATEGIES²

Objectives/Programs (Focal Areas, Integrated Approach Pilot, Corporate Programs)	Trust Fund	(in \$)	
		GEF Project Financing	Co-financing
LD-1 Program 1 (select) (select)	GEFTF	1,162,329	20,069,612
LD-3 Program 4 (select) (select)	GEFTF	1,162,329	5,034,808
(select) CCM-2 Program 4 (select)	GEFTF	2,640,183	20,069,613
(select) (select) SFM-2	GEFTF	1,000,000	5,034,808
(select) CW-2 Program 3 (select)	GEFTF	2,640,183	10,000,000
Total Project Cost		8,605,023	60,208,841

B. INDICATIVE PROJECT DESCRIPTION SUMMARY

Project Objective: To enhance food security and multiple environmental benefits through sustainable, resilient and healthy agro- and forest ecosystems in the Sahelian regions of Mali based on a landscape approach						
Project Components	Financing Type ³	Project Outcomes	Project Outputs	Trust Fund	(in \$)	
					GEF Project Financing	Co-financing
1. Promoting integrated landscape planning and management for multiple objectives and resilience	TA	1.1 Cooperative planning mechanisms enable consideration of multi-functionality and enhance landscape protection 1.2 Enabling frameworks strengthened to promote a landscape-based approach in planning and decision-making at	1.1.1 Collaborative planning platforms held in 5 districts to enhance multi-stakeholder dialogue and involvement in landscape management, and reconcile development and environment trade-offs (involve district and commune officials, communities, CSOs, private sector, etc.) 1.2.1 Preparation and adoption of integrated landscape management plans in at least 3 districts: participatory land-use plans developed with local authorities, communities, and other stakeholders to generate both development and environmental benefits	GEFTF	1,229,289	7,448,516

¹ Project ID number will be assigned by GEFSEC and to be entered by Agency in subsequent document submissions.

² When completing Table A, refer to the excerpts on [GEF 6 Results Frameworks for GETF, LDCF and SCCF](#).

³ Financing type can be either investment or technical assistance.

		sub-national levels	<p>1.2.2 # of landscape/development plans that integrate multiple functions, uses and resilience, including forestry services</p> <p>1.2.3 Commune guidelines and action plans (at least 10) developed for reducing hazardous waste burning with stakeholder involvement (in collection, treatment and valorization), and integrated within the larger land-use plans</p> <p>1.3 Increased capacity and awareness of institutional and local actors to apply a landscape approach and promote sustainable development through INRM</p> <p>1.3.1 Differentiated training targeting relevant stakeholders: # of trainings in INRM, managing ecosystems sustainably and implementing participatory land-use plans</p> <p>1.3.2 5,000 land users and 200 district staff trained in INRM and understanding links between multiple land uses within landscapes (agriculture, forestry, fisheries, mining, energy, conservation, etc.)</p>			
2. A productive, protected, and healthy landscape to maintain diverse ecosystem goods and services (agro and forest)	Inv /TA	<p>2.1 Landscape level scale-up of SLWM, SFM and INRM delivers both ecosystem and development benefits:</p> <ul style="list-style-type: none"> ○ Agro-ecosystem functionality and productivity enhanced through measures and technologies that reduce land degradation, improve resilience and local livelihoods ○ Improved agro-forest and forest landscape maintains flows of forest ecosystem goods and services (provisioning, regulating, supporting) ○ More vegetative cover increases carbon sequestration (in soils and trees) and reduces GHG emissions 	<p>2.1.1 5,000 ha under sustainable land or pastoral management with climate-smart techniques (soil conservation, trees in crop or grazing systems, mixed/inter-cropping, low till, improved grazing, revegetation of rangelands, etc.)</p> <p>2.1.2 2,000 ha of croplands under conservation agriculture practices: crop rotation, crop diversification, etc. with drought-resistant seed varieties distributed to households and farmer organizations in 5 districts</p> <p>2.1.3 # of small investments in rural hydro-agricultural infrastructure: rainwater harvesting, efficient irrigation on 500 ha, 15 pastoral watering points</p> <p>2.1.4 3,000 farmers and herders adopt good SLWM, agro-sylvo and pastoral practices suitable to drylands</p> <p>2.1.5 Ha under improved forest management:</p> <ul style="list-style-type: none"> - 2,500 ha of woodlots and nurseries for fuelwood harvesting - 3,000 ha reforested via assisted natural regeneration - 2,500 ha under agro-forestry for the promotion of non-timber forest products - 5 community forests (one in each district of 300 ha) established and sustainably managed - Community planning committees formed for community forests and woodlands 	GEFTF	2,622,483	9,310,646

	Inv	<p>2.2 Pressures on forest ecosystems are reduced through INRM and community-based interventions which better livelihoods while reducing land and forest degradation</p> <p>2.3 Promoting sound waste management within targeted landscapes further reverses environmental degradation and enhances healthy ecosystems, evidenced by activities to reduce harmful chemicals and wastes:</p> <ul style="list-style-type: none"> o waste valorization o pilots to reduce dioxin and furan emissions at dump sites o reduced open burning practices and uPOPs 	<p>2.2.1 # of alternative income generating options identified and adopted in communities based on agro-forestry, ANR, sylvo-pastoralism, etc.</p> <p>2.2.2 30 local producer or community groups and authorities trained to undertake SLFM, and sustain activities</p> <p>2.2.3 1 rural habitat program in 10 communities (local market and transfer of know-how) based on the construction of rural bioclimatic structures using Nubian Vault (NV) technology for private and community use [400 NV rural households (12,000 m²) and 40 NV community buildings (2,800 m²) are studied, built and validated, with green jobs created and 12,000 tons of potential GHGs mitigated]</p> <p>2.3.1 3 pilot composting units (1 per region) for agricultural use</p> <p>2.3.2 BAT/BEP adopted for uPOPs, agricultural and municipal waste management in at least 20 communes</p> <p>2.3.3 # of innovative technologies for waste valorization, mainly for organic fertilizer, are successfully deployed for a more sustainable agriculture (biogas digesters, manure management, others)</p> <p>2.3.4 # of initiatives to reduce, reuse and recycle solid waste to further protect the landscape: collection of compostable municipal waste in select municipalities, implemented with a PPP approach and support of local NGOs</p> <p>2.3.5 Quantifiable and verifiable tons of POPs eliminated or reduced in 3 regions</p>	GEFTF	1,065,384	12,414,195
				GEFTF	2,048,815	18,621,291
3. Learning, monitoring, and adaptive management	TA	3.1 Increased decision-support tools needed to apply a landscape approach and cooperatively plan and design INRM strategies	<p>3.1.1 # of 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</p> <p>3.1.2 # of commune resource, land use and forest maps</p>	GEFTF	573,668	3,413,903

	Inv/TA		3.1.3 BAT/BEP assessed for uPOPs, agricultural and municipal waste management 3.1.4 Sustainable financing plan assessed for waste management (tax, subsidy, royalties or public-private partnerships) 3.2 Lessons captured and knowledge disseminated 3.2.1 Best practice guidelines on SLM and SFM developed for the extension and training conducted in 3 districts and used in component 2 activities (with recommendations on reconciling land-use tradeoffs) 3.2.2 Knowledge management for lessons learned from an applied landscape approach disseminated at various scales 3.3 Project impact monitored and evaluated 3.3.1 A framework developed for effective monitoring and adaptive management of the land use plans, including delineation of roles among key stakeholders 3.3.2 A M&E system established and used to assess and monitor project impact and its multi-focal area GEBs	GEFTF	655,621	3,724,258
Subtotal					8,195,260	54,932,809
Project Management Cost (PMC) ⁴				GEFTF	409,763	5,276,032
Total Project Cost					8,605,023	60,208,841

For multi-trust fund projects, provide the total amount of PMC in Table B, and indicate the split of PMC among the different trust funds here: (5% from each CC, LD, C&W)

C. INDICATIVE SOURCES OF CO-FINANCING FOR THE PROJECT BY NAME AND BY TYPE, IF AVAILABLE

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Amount (\$)
GEF Agency	African Development Bank	Grants	25,589,812
GEF Agency	African Development Bank	Loans	25,589,812
Recipient Government	Government of Mali	In-kind	5,777,503
Beneficiaries	Beneficiaries (local authorities and communities)	In-kind	1,251,714
CSO	Association La Voute Nubienne (AVN)	Grants	2,000,000
Private Sector	Private organizations (hospitals, enterprises, etc), waste recyclers and handlers	Unknown	
Total Co-financing			60,208,841

D. INDICATIVE TRUST FUND RESOURCES REQUESTED BY AGENCY(IES), COUNTRY(IES) AND THE PROGRAMMING OF FUNDS ^{a)}

GEF Agency	Trust Fund	Country/Regional/Global	Focal Area	Programming of Funds	(in \$)		
					GEF Project Financing	Agency Fee (b) ^{b)}	Total (c)=a+b

⁴ For GEF Project Financing up to \$2 million, PMC could be up to 10% of the subtotal; above \$2 million, PMC could be up to 5% of the subtotal. PMC should be charged proportionately to focal areas based on focal area project financing amount in Table D below.

					(a)		
AfDB	GEFTF	Mali	Land Degradation	(select as applicable)	2,324,657	220,843	2,545,500
AfDB	GEFTF	Mali	Climate Change	(select as applicable)	2,640,183	250,817	2,891,000
AfDB	GEFTF	Mali	Multi-focal Areas	SFM	1,000,000	95,000	1,095,000
AfDB	GEFTF	Mali	Chemicals and Wastes	(select as applicable)	2,640,183	250,817	2,891,000
Total GEF Resources					8,605,023	817,477	9,422,500

a) Refer to the [Fee Policy for GEF Partner Agencies](#).

E. PROJECT PREPARATION GRANT (PPG)⁵

Is Project Preparation Grant requested? Yes No If no, skip item E.

PPG AMOUNT REQUESTED BY AGENCY(IES), TRUST FUND, COUNTRY(IES) AND THE PROGRAMMING OF FUNDS

Project Preparation Grant amount requested: \$200,000					PPG Agency Fee: \$19,000		
GEF Agency	Trust Fund	Country/ Regional/Global	Focal Area	Programming of Funds	(in \$)		
					PPG (a)	Agency Fee ⁶ (b)	Total c = a + b
AfDB	GEF TF	Mali	Land Degradation	(select as applicable)	100,000	9,500	109,500
AfDB	GEF TF	Mali	Climate Change	(select as applicable)	50,000	4,750	54,750
Total PPG Amount					150,000	14,250	164,250

F. PROJECT'S TARGET CONTRIBUTIONS TO GLOBAL ENVIRONMENTAL BENEFITS⁷

Provide the expected project targets as appropriate.

Corporate Results	Replenishment Targets	Project Targets
1. Maintain globally significant biodiversity and the ecosystem goods and services that it provides to society	Improved management of landscapes and seascapes covering 300 million hectares	<i>Hectares</i>
2. Sustainable land management in production systems (agriculture, rangelands, and forest landscapes)	120 million hectares under sustainable land management	14,500 <i>Hectares</i>
3. Promotion of collective management of transboundary water systems and implementation of the full range of policy, legal, and institutional reforms and investments contributing to sustainable use and maintenance of ecosystem services	Water-food-ecosystems security and conjunctive management of surface and groundwater in at least 10 freshwater basins;	<i>Number of freshwater basins</i>
	20% of globally over-exploited fisheries (by volume) moved to more sustainable levels	<i>Percent of fisheries, by volume</i>
4. Support to transformational shifts towards a low-emission and resilient development path	750 million tons of CO _{2e} mitigated (include both direct and indirect)	1,295,143 t CO ₂ eq
5. Increase in phase-out, disposal and reduction of releases of POPs, ODS, mercury and other chemicals of global concern	Disposal of 80,000 tons of POPs (PCB, obsolete pesticides)	2g TEQ p.a <i>metric tons</i>
	Reduction of 1000 tons of Mercury	<i>metric tons</i>
	Phase-out of 303.44 tons of ODP (HCFC)	<i>ODP tons</i>

⁵ PPG requested amount is determined by the size of the GEF Project Financing (PF) as follows: Up to \$50k for PF up to \$2m (for MSP); up to \$100k for PF up to \$3m; \$150k for PF up to \$6m; \$200k for PF up to \$10m; and \$300k for PF above \$10m. On an exceptional basis, PPG amount may differ upon detailed discussion and justification with the GEFSEC.

⁶ PPG fee percentage follows the percentage of the Agency fee over the GEF Project Financing amount requested.

⁷ Provide those indicator values in this table to the extent applicable to your proposed project. Progress in programming against these targets for the projects per the *Corporate Results Framework* in the [GEF-6 Programming Directions](#), will be aggregated and reported during mid-term and at the conclusion of the replenishment period. There is no need to complete this table for climate adaptation projects financed solely through LDCF and/or SCCF.

6. Enhance capacity of countries to implement MEAs (multilateral environmental agreements) and mainstream into national and sub-national policy, planning financial and legal frameworks	Development and sectoral planning frameworks integrate measurable targets drawn from the MEAs in at least 10 countries	<i>Number of Countries:</i>
	Functional environmental information systems are established to support decision-making in at least 10 countries	<i>Number of Countries:</i>

PART II: PROJECT JUSTIFICATION

1. *Project Description.* Briefly describe: 1) the global environmental and/or adaptation problems, root causes and barriers that need to be addressed; 2) the baseline scenario or any associated baseline projects, 3) the proposed alternative scenario, GEF focal area⁸ strategies, with a brief description of expected outcomes and components of the project, 4) incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and co-financing; 5) global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF); and 6) innovation, sustainability and potential for scaling up.

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

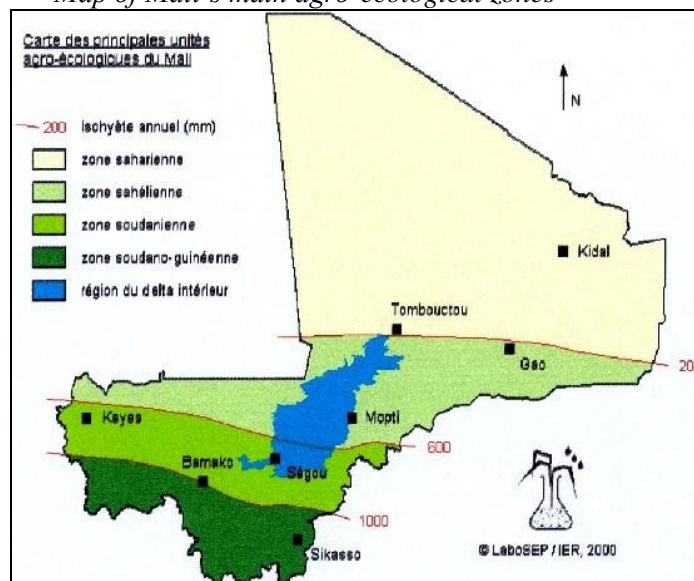
One out of eight people globally suffers from hunger. Most of these people live in Africa's Sahel, one of the world's poorest and most fragile regions. Lying at the heart of its vulnerability are challenging and increasingly degrading environmental conditions difficult for sustaining livelihoods. The region faces protracted food insecurity, rural poverty and susceptibility to climatic change, resulting from periodic drought, poor harvests and difficult socio-economic systems. Various factors account for the Sahel's environmental crisis, both endogenous and anthropogenic, particularly the combined effects of reduced and erratic rainfall, a difficult agro-ecological and bioclimatic context, and population pressures via unsustainable practices that have contributed to the deterioration of agro- and forest ecosystems. The region is seeing an increasing trend towards environmental degradation (of croplands, woodlands, grasslands, etc.) and water scarcity, a growing problem particularly in the Saharan and Sahelian zones. To ease the strain, Sahelian landscapes must be restored, optimized, and underlying causes of degradation targeted through a holistic approach that considers the multi-functionality of land. Natural resource regeneration cannot keep pace with annual population growth, currently estimated at over 3%, which puts increasing pressures on ecosystems. Environmental issues must thus be assessed in terms of the fragility of the resource base in relation to the ever-increasing needs of the population.

The rate of land degradation in the Sahelian belt is a growing global concern given impacts on soil, biodiversity, hydrological processes, and forests which undermine the natural assets and systems upon which rural communities and economies depend. FAO has reported that over 80% of the region's land is degraded and further degrading. Extensive removal of vegetation as a direct consequence of human actions is resulting in increasing deforestation and desertification. Parts of Mali, for example, including Timbuktu, are now more Sahara than Sahel, exemplifying this trend. Moreover, the frequency and severity of droughts has increased over the past decades. It is expected that average temperatures will rise by 3-5 C by 2050 across the Sahel. The region has been characterized historically by strong bioclimatic variations but the added impacts of a changing climate pose increasingly significant obstacles. Mali's Sahelian zones will be some of the areas most affected.

Mali is a large landlocked country with diverse agro-climatic zones stretching from Sahara desert in the north (covering 60% of the country), Sahel across the middle, to more fertile lands with higher annual rainfall in the south and Niger and Senegal River basins. Four agro-climatic zones based on average precipitation are found: Saharan, Sahelian, Sudanese savanna, and Guinean savanna (see map below). Average rainfall is low although there is a strong north-south gradient which translates into a highly diverse agro-ecology. The majority of economic activity, food production, and population are concentrated in southern Mali, but the Sahelian population is growing fast as well. The two largest rivers of West Africa, the Niger and the Senegal, run through Mali. Their rich ecosystems and floodplains constitute important agricultural and fishing resources. However, successive droughts and reduced rainfall have seriously affected the extent of surface water.

⁸ For biodiversity projects, in addition to explaining the project's consistency with the biodiversity focal area strategy, objectives and programs, please also describe which [Aichi Target\(s\)](#) the project will directly contribute to achieving.

Map of Mali's main agro-ecological zones



Mali ranks among the ten poorest countries in the world and is highly dependent on natural resource sectors (agriculture, livestock, fisheries, mining). Combined, agriculture (mostly rain-fed, small scale subsistence farming), fisheries and livestock employ about 80% of the population. Low levels of productivity together with a high population growth rate is resulting in vast land conversions to cope with rising food needs. 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, an expansion of degraded areas, and poverty as a major driving force underlying the degradation of assets on which people depend.

Poverty is thus both a cause and consequence of environmental degradation. Rural development is key to poverty reduction but the degradation of natural resources constitutes a major challenge for growth and livelihoods. The degradation of soil is caused both by natural processes such as wind and water erosion but also by inappropriate agricultural and waste practices, overgrazing, and overexploitation of woodlands, resulting also by lack of income generating options, awareness of consequences and more sustainable techniques. Insecurity of tenure further undermines small land user's willingness to apply SLM practices over short gains. Land degradation is severest in Mali's Sahel and poses a major threat to livelihoods in the short and long term. The impacts of climate change on environmentally-weakened land use systems risks further exacerbating the severity of a fast depleting resource base. Without resilience, the percentage of people at risk of hunger rises as do projected economic losses.

Deforestation is also a growing problem as demand for food, fuelwood and charcoal continues to rise. About 92% of the population depends on wood for cooking, shelter and other energy needs, which means deforestation is driven by livelihood demands. According to the Direction Nationale des Ressources Forestières, Fauniques et Halieutiques (DNRFFH), more than 100,000 ha of forests disappear each year. A regressing vegetative and forest base in the Sahel has critical repercussions on rural well-being given negative impact on protective, provisioning, and supporting services. Bush timber has also traditionally been used for roofing; however, growing need for timber and straw is further contributing to ecosystem degradation. With rising resource scarcity and climate change, such shelter methods are becoming less viable and do not provide protection in the face of shifting weather patterns. Furthermore, natural pastures for livestock are also in constant reduction as a result of overgrazing and vegetation loss. There is a clear displacement of pastoralists leaving the north and moving south which increases competition between agricultural and pastoral land use and creates conflict between farmers and herders.

Overexploitation of Mali's resource base therefore has significant direct and indirect harmful impacts not only on the health of landscapes but also on human well-being. Combined with land and forest depletion, a general lack of sound waste management in Mali, and of awareness in the industrial and informal sectors about pollution and contamination, are causing further damage to ecosystems. These arise from pollution in various forms resulting from poor management

of waste, absence of modern waste treatment facilities (sanitary landfills, waste incinerators, etc.), and increasing agricultural, industrial and municipal waste in both rural and urban areas. Waste and untreated sewage infiltrate into soils and aquifers leading to contamination. Municipal and other types of wastes are usually dumped in open rural sites or eliminated through open burning practices, without consideration for recovery. Such extensive highly polluting practices are leading to the release of harmful chemicals, gases and particles into the air and landscape. Taking Bamako as an example, Bamako produces over 500,000 m³ of municipal waste each year, an amount expected to increase with rural migration and population growth. In smaller towns, less than 30% of garbage is collected regularly and uncollected waste is normally burned. Municipal solid waste is disposed in uncontrolled open discharge just outside cities or remains inside the city in the form of anarchic dumps. Although the level of facilities and services varies from one area, town and neighborhood to another, Mali generally lacks infrastructure and basic services for waste collection/treatment/management.⁹ Such a reality has huge repercussions on the health of landscapes, agro-ecosystems, and humans. Waste and environmental degradation thus also go hand in hand, and as such, waste management should be integrated within considerations for the integrity of landscapes.

The primary barriers addressed by the project therefore are:

- overexploitation and unsustainable use and management of natural resources (land, forest, water) leading to low productivity and environmental degradation, with high vulnerability to climatic and other shocks;
- lack of knowledge at all scales on environmental consequences and options, including the interconnectivity of land use systems;
- weak institutional and local capacity for adopting integrated landscape management, with sectoral approaches that do not consider the multiple uses of landscapes and ecosystem services they provide.

At the core of any rural program for food security, there must be a focus on resilience, particularly important for the Sahel with highly vulnerable populations and fragile landscapes. Resilience is intrinsically and increasingly linked to environmental integrity and functionality of landscapes. In the absence of a sustainable and holistic management of natural resources and landscapes, interrelated environmental problems will increase and constitute a serious barrier to poverty reduction and environmentally sound growth. Mali has significant potential for increasing productivity due to its ecological diversity and water resources, with an estimated 12 million ha of arable land and 30 million ha of pastureland. However, natural assets must be used rationally and sustainably, with a focus on optimizing existing resources and balancing the multiple functions, uses, and actors within a landscape.

Narrow or ad-hoc approaches do not capture the cross-sectoral nature of environmental degradation and cannot systematically address its root causes. Resilience must be used as an overarching framework, unifying rural practices and needs, including sustainable NRM, food security, shelter, waste management, and landscape restoration, with a focus on adaptive management in order to continuously meet short and long-term priorities. INRM based on landscape approaches can be the foundation for sustained and resilient development in Mali.

2) The baseline scenario or any associated baseline projects

AfDB baseline project

The number of people affected by poverty and food insecurity is on the rise in the Sahel. Tackling the problem in this unique context requires building resilience within ecosystems and livelihoods, agricultural sector support and developing regional integration for addressing common problems that transcend political borders. AfDB's Program to Build Resilience to Food and Nutrition Insecurity in the Sahel (P2RS) has been designed with a 20 year timeframe to sustainably increase agro-sylvo-pastoral and fisheries productivity in the Sahel. In addition to a regional component, each country involved will implement its own national project. The baseline of the GEF project will be the Mali project of the P2RS (for USD 60.2 million) which concerns interventions in the regions of Kayes, Koulikoro, and Ségou.

Within these regions, the project targets 34 out of the 166 most vulnerable communes in Mali that do not yet benefit from any resilience project or program. Moreover, this is an area that has been hit hard by internal strife since 2012, further underlying its extreme socio-economic vulnerability and the need for intervention. The P2RS Mali project will be

⁹ <http://www.medwelljournals.com/fulltext/?doi=erj.2009.81.86>

critical in contributing to achieving and sustaining the objectives of the recently signed peace agreement in terms of employment creation, poverty reduction, and socio-economic development in the Sahelian belt.

P2RS Mali seeks to eliminate the structural causes of acute and chronic food and nutrition crises by increasing production, developing infrastructure and basic social services, and diversifying income options. The strategy is based on the development of stock breeding, irrigation schemes, markets for inputs, and agricultural and livestock products as well as enhancing the capacity of agricultural sector private, public and community institutions. To this end, the project will construct water and pastoral facilities in targeted rural districts and assist vulnerable households to enhance agricultural productivity by sustainably managing natural resources and improving market access. The baseline will be implemented over a five-year period through three components which cover:

1. **Rural Infrastructure Development:** This component aims to develop rural infrastructure and improve the necessary production, processing and agricultural marketing measures to increase the competitiveness of agricultural products. The component is divided into four sub-components covering activities in irrigation, soil restoration, pastoralism, processing and marketing, and basic social facilities.
2. **Development of Value Chains:** This component targets a sustainable increase in the productivity of major agro-sylvo-pastoral and fisheries systems. A value chain approach based on growth sub-sectors will be used to secure and increase access to and marketing of agricultural products. Activities and capacity building will promote the sustainable development of all agricultural sub-sectors, improvement of market access and financing, promotion of employment, and strengthening of nutrition.
3. **Program Management:** The last component defines and implements the institutional structure for the management and coordination of the project, including procurement, monitoring and evaluation, and communications.

Baseline scenario for chemicals and waste aspect

Mali is in the process of developing various municipal waste management strategies and the Government is seeking assistance for implementing advanced management practices and technologies that could reduce the environmental impacts of unsound waste management and open burning. These issues are reflected in Mali's NIP. According to the Global Partnership on Waste Management, Mali's highest priority waste streams are municipal solid waste, industrial waste, and waste plastics, with areas of priority action related to the regulatory framework, financial gaps, and technical and scientific capacities. Some waste management regulations exist; however, not all waste streams are adequately addressed, including e-waste and new uPOPs. Technical guidance, new equipment and increased awareness are seen as urgent, including on the risks and alternative uses of organic and agricultural waste.¹⁰

The Mali government is also currently promoting policies to increase agricultural productivity which will result in an increase in agricultural waste. However, sound waste management practices are still inadequate. If open burning of mixed wastes and biomass residue is not properly addressed, uPOPs release may dramatically rise. Mali's NIP indicates that the initial estimate of uPOPs release was 39 g TEQ/a, and that open burning contributed 3.4 g TEQ/a, ranking only second after the transport sector. Waste incineration ranked third, contributing 2.5 g TEQ/a. High levels of exposure over time, such as by waste management workers and scavengers, will lead to respiratory problems, greater susceptibility to disease, and an increase in cancer, in addition to the critical resultant environmental pollution and soil contamination.

There are a number of regional interventions, with GEF support, centered on enhancing the regulatory framework, monitoring and institutional capacity for sound chemicals and waste management and POPs reduction. These include the UNEP projects 'Continuing Regional Support for the POPs Global Monitoring Plan under the Stockholm Convention in the Africa Region' and 'Capacity strengthening and technical assistance for the implementation of the Stockholm Convention National Implementation Plans (NIPs) in Africa Least Developed Countries of the ECOWAS sub-region'. The latter's objective is to build capacity to implement country NIPs in an effective manner, while contributing to strengthen related capacities and creating enabling environments in the ECOWAS sub-region. These projects are linked to other ongoing 'health and environment' programs in the region and continent related to institutional coordination, regulatory frameworks and public policy, including the 'Pan African Program to reduce chemical risks to human health

¹⁰ <http://www.unep.org/gpwm/InformationPlatform/CountryNeedsAssessmentAnalysis/Mali/tabid/106554/Default.aspx>

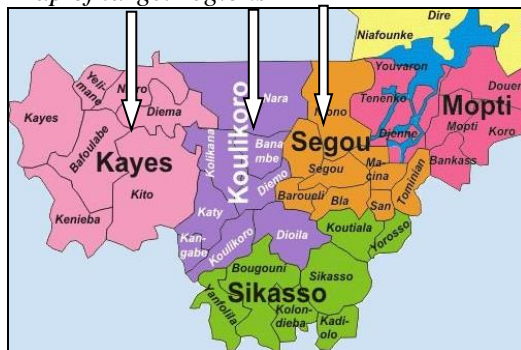
and the environment', which began as a follow-up to the 2008 adoption of the Libreville Declaration on Health and the Environment. Mali is also currently reviewing and updating its NIP. This is good timing for coordination of related projects and activities upon which to concretize on-the-ground interventions on waste management. The AfDB-GEF project will build upon this baseline scenario through experiences gained, the strengthened regulatory framework, and the improved technical and institutional capacities to actualize field-level activities within the project's targeted landscapes.

3) *The proposed alternative scenario, with a brief description of outcomes and components of the project*

The GEF project aims to apply a landscape approach to INRM in target districts, with considerations for the linkages between multiple ecosystem functions and services. A landscape approach can be generally defined as a framework or method that integrates considerations and activities for multiple land uses within a given area, in a way that ensures sustainable use of resources while at the same time strengthening measures to alleviate poverty.¹¹ Landscape approaches seek to provide tools for managing land to achieve concurrent social, economic, and environmental objectives in areas where agriculture and other productive (or non) land uses compete with environmental and conservation goals. The principles of such an approach particularly emphasize stakeholder involvement, adaptive management, and multiple objectives to reconcile tradeoffs.¹²

The regions of the proposed project, located in west-central Mali, are Kayes, Koulikoro and Ségou (see map below), specifically their northern most districts. These regions are characterized by Sahelian ecological and climatic conditions, and comprise the transition grassland and savanna zones between the northern desert and the southern Sudano ecosystems. According to a recent World Bank study, environmental shocks are the primary risk factors for rural groups in Mali and most common in the Sahel, while economic shocks dominate in urban areas. Given difficult agro-ecological conditions, the ultimate goal of the project is to reduce poverty in rural areas by enhancing resilience of the landscape and those living on it, based on restoring and preserving the ecological integrity of Sahelian agro-and forest ecosystems.

Map of target regions



Fully in line with GEF6 directives and priorities of having more integrated projects with strong potential for GEBs and alignment with national priorities, this GEF project for Mali will incorporate four focal areas (LD, CCM, SFM and CW) within a landscape-based framework. It is envisioned as a multi-focal project based on a multiple benefits approach to enhance landscape health and resilience of the rural territory, with a holistic consideration of agro- and forest ecosystems, rural household needs (food, income, shelter, etc.), and also climate change (adaptation and mitigation). Most landscapes provide a diverse range of goods, services and values. They have multiple uses and purposes which are valued in different ways by different stakeholders, meaning that tradeoffs exist. The landscape approach acknowledges these tradeoffs and addresses them through a spatially-defined and INRM-based method that tries to reconcile various stakeholder needs, priorities and objectives.

The objective of the proposed project is to increase or maintain agro- and forest ecosystem productivity based on INRM, with the idea to restore and protect the overall health and functions of the landscape and the provision of ecosystem services for the benefit of multiple uses and users. It aims to build resilience in both ecosystems and communities. The

¹¹ Denier, L., Scherr, S., Shames, S., Chatterton, P., Hovani, L. and Stam, N. (2015). *The Little Sustainable Landscapes Book*, Global Canopy Programme: Oxford.

¹² Sayer, J., et al. 2013. Ten principles for a landscape approach to reconciling agriculture, conservation, and other competing land uses. *PNAS* 110(21): 8349-8356.

project's reliance on a landscape approach supports it to address resilience across the landscape as a way to significantly reduce environmental tradeoffs and vulnerability. The project will do this through activities for strengthening planning and management of the resource base, sustainable agriculture and pastoral management, measures for the restoration and improvement of forests and agro-forestry landscapes, and waste management for incremental ecological integrity. Activities will form a strategic intervention for reducing land and forest degradation in targeted landscapes, enhancing carbon sequestration in those agricultural and forest landscapes, improving overall soil and ecosystem health, and increasing awareness at all levels on the value of adopting an integrated approach to NRM.

Outcomes and components

Project activities will promote resource planning and management that simultaneously address socio-economic and climatic priorities. By doing this, it addresses the development-conservation nexus, and supports corresponding solutions. The project will work at three levels based on three separate components: Component 1 supports adoption of a programmatic framework in the target districts and tools for enhanced planning, cooperation and capacity building for landscape-based actions. Component 2 involved application of the approach by implementing field measures for sustainable INRM practices, with full involvement of communities as well. Component 3 consolidates the information base for decision-making and monitoring, and supports learning at scale. The components are described below:

Component 1: Promoting integrated landscape planning and management for multiple objectives and resilience

Cooperative planning mechanisms are important to enhance effective landscape management and enable consideration of its multi-functionality, for the ultimate aim of its protection. A process of information and perspective exchange helps arrive at an understanding of the landscape's conditions, uses, challenges and opportunities. Component 1 will center on activities which bring together relevant stakeholders for participatory dialogue through the establishment of multi-stakeholder/multi-sector platforms geared towards collaborative planning and coordinated action. District platforms will be established for rural actors to dialogue and agree on the 'mosaic' of land-uses and targets, and to integrate sector-based thinking within a more holistic approach to reconcile various interests. During PPG, the project will delineate the type of coordination mechanism to be developed and the spatially-defined target areas, with strong consideration for landscapes enduring, or at high risk of, soil and forest degradation.

Many social and environmental problems have to be tackled at a range of scales, only possible through a holistic methodology that brings together relevant actors working across the landscape. The platforms will bring together different institutions and stakeholders with sectoral responsibilities, including local authorities, communities, CSOs and private sector actors, to strengthen the enabling framework for landscape decision-making at sub-national levels. They will be tasked with the preparation and adoption of integrated landscape management plans. The plans will integrate considerations for multiple needs, adaptive management and resilience, and will include guidelines and actions for sustainably enhancing productivity, forest protection and sound waste management. The platforms will help remove barriers and disincentives, and ensure broad-based approval of the land-use plans. They will also guarantee a more synergistic approach to the implementation of the plans, resulting in greater potential for successful landscape restoration in the long-term, with ensuing benefits across scales.

Component 1 will also support cross-cutting development of knowledge and capacities. The capacity of institutional and local actors at difference scales (sub-national, district, community) will be enhanced in order to effectively apply a landscape approach and promote INRM. Differentiated training targeting various stakeholder groups will help incorporate ecosystem-based thinking into planning and management, which will facilitate negotiation and implementation processes. Landscape actors will be better equipped to understand trade-offs, identify synergies and options for designing more sustainable resource management systems, which strengthen the ecological basis of production. This capacity building will be complemented by awareness raising and training linked to ground activities.

Component 2: A productive, protected, and healthy landscape to maintain diverse ecosystem goods and services (agro and forest)

Component 2 implements the landscape approach based on the plans developed for the target districts and ground level investments and technical assistance for the ultimate rehabilitation and protection of the landscape. A landscape level scale-up of sustainable NRM practices will provide both multifaceted gains by delivering environmental benefits (local and global) and livelihood improvements. The aim is to restore and maintain flows of agro- and forest ecosystem goods

and services (whether provisioning, regulating, or supporting). Community-based actions to reduce pressures on ecosystems will better livelihoods while reducing land and forest degradation, with added considerations for sound waste management to further protect the landscape. It is the project's largest component, given it integrates its multi-focal interventions.

Population growth in Mali is increasing demand for agricultural land both for subsistence production and cash crops. Moreover, poor knowledge on environmental threats and lack of options lead to short-term strategies with no investment in regeneration and preservation. Agricultural expansion and intensification are thus resulting in increasing pressures on forests, water, and pastureland which threaten varied ecological functions and could undermine efforts to meet future food needs. Despite agriculture being difficult in the Sahel's physical setting, there is potential for increasing agro- and forest ecosystem productivity through land rehabilitation. Component 2 activities will seek the restoration and protection of the resource base by reversing the loss of ecosystem services within degraded/ing landscapes. It will involve wide-scale adoption of SLWM, sustainable forestry and other INRM measures, suitable to a dryland context. Agricultural innovations and inputs that support sustainable production will be the focus of the field interventions.

Sahelian agro-ecosystems will be enriched through improved agro-sylvo-pastoral management, site-appropriate SLWM, improved agricultural techniques and inputs (such as drought resistant seeds), and integrated crop-tree-animal systems that concurrently enhance soil fertility, help protect water sources and habitats, and reduce carbon emissions from increased vegetative cover. Sustainable land and pastoral management will be sought particularly via climate-smart agriculture techniques, known to strengthen food security and deliver mitigation benefits. Specific activities will involve 5000 ha of cropland under measures for soil conservation, mixed/inter-cropping, improved grazing, conservation agriculture and small rural hydro-agricultural infrastructure (e.g. rainwater harvesting and improved irrigation).

Increasing demographic pressures and agricultural intensification are also specifically resulting in conversion of woodlands into land for cultivation, resulting in widespread loss of forest habitats. As such, component 2 activities will also seek to rehabilitate wooded areas in the landscape, improve forest management, and defend remaining forest ecosystems, thereby maintaining the provision of forest services and carbon stock. Techniques for increasing woody biomass will be adopted more widely by placing 9500 ha under woodlots, agro-forestry, ANR, and community forestry. These techniques are additionally important for economic diversification, creating new income activities, and conserving biodiversity, and will include the promotion of NTFPs and harvesting of fuelwood to reduce deforestation. They will also reduce vulnerability and pressure on agro and forest ecosystems by optimizing existing land and providing options.

As an additional measure to preserve landscapes and enhance rural wellbeing, component 2 will include a sustainable habitat program based on the construction of bioclimatic structures. Bush timber has traditionally been used for roofing but is further contributing to deforestation. Increasing regression of forested areas in Mali's Sahel means that traditional building techniques using timber are no longer feasible given they contribute to ecosystem degradation and do not provide protection in the face of changing weather patterns. This sub-component will thus promote safe and environmentally sound construction technologies which improve living standards and lessen overexploitation of local resources. The Association la Voûte Nubienne (AVN) works in the Sahel to offer sustainable Nubian Vault housing and shelter (based on three principles of a roof, a skill, a market), which improve economic circumstances, quality of life, and environmental protection. The architectural technique relies on simple structures with vaulted roofs using basic, readily available local materials (earth for making mortar and sun-dried mud bricks). The technique results in long-lasting, eco-sustainable housing with a low carbon footprint. This sub-component thus links well to LD, SFM and CCM objectives and involves incremental measures for forest protection.

Component 2 also integrates an aspect promoting the sound management of harmful chemicals and waste, in a further attempt to protect the landscape, human wellbeing, and address multiple land use issues, with a specific consideration for exploiting once harmful substances into a potential input for agriculture. The use and production of chemicals and wastes is expected to increase alongside Mali's projected agricultural intensification and economic growth. Addressing associated environmental and health hazards (rural and urban) is increasingly crucial in light of the limited understanding of risks to the landscape (contamination, degradation, etc.). The baseline project covers rural areas but with important urban centers as well. Major industrial plants are located in the towns of Ségou, Kayes, Sikasso, and Koulikoro, with industrial waste infiltrating into soil or aquifers. Modern waste treatment facilities are very limited and sound

reuse/recycling practices uncommon. In rural zones the shares of municipal waste decrease compared to agricultural wastes but both are highly detrimental given that their hazard nature is generally unknown or ignored by a large part of the population. People, many of which women, young and children, on a daily basis handle different kinds of waste that expose them and the environment to the adverse effects of chemicals, including uPOPs, newly listed industrial POPs, like polybrominated diphenyl ethers (PBDEs), heavy metals, and other toxic substances.

Municipalities in Mali are beginning to consider landscape-based strategies for managing resources and reshaping urban-rural linkages to ensure environmental protection. As many LDCs, Mali has recurring problems of open air burning, agricultural waste and poorly managed municipal waste disposal. Local economic interest groups collect daily waste using carts pulled by donkeys (figure below); however, transport to final discharge locations and treatment capacity (for breakdown and/or recycling) are poor, resulting in large open landfills. Consequently, open burning of waste is regularly practiced. Some small private actors in bigger cities provide basic collection services, creating employment opportunities in the process, but there is no larger private sector entity involved in urban waste management.

Fig: Open landfill in Koulikoro and waste collection in Kayes¹³



In its NIP, Mali has emphasized various priority issues related to waste management and POPs, including investments in waste reduction and treatment. The project will promote activities for the sound management of chemicals and wastes, which will serve as incremental measures for increasing landscape health. These will include: a pilot composting unit per region; Best Available Technologies (BAT) and Best Environmental Practices (BEP) adopted for agricultural and municipal waste management in at least 20 communes, including sanitary landfill operations; a program for the collection and recycling of compostable municipal waste in select municipalities, implemented with a PPP approach and support of local NGOs; and technologies for waste valorization, mainly for organic fertilizer (biogas units, etc.). BAT/BEP will be promoted for the sound management of municipal and hazardous waste with the establishment of controlled landfills. Pilot activities will involve the collection, recycling, treatment and valorization of solid and organic waste into fertilizer for agricultural use; and will reduce extensive open burning practices. The separation of organic matter and other recyclable wastes directly from households and public structures will be promoted. Feasibility studies and opportunities will be explored for public-private partnerships (PPP) for recycling, valorization and/or resource recovery. The PPG phase will involve stakeholder analysis, consultations and define the details of activities, investments and possible partnerships (with local authorities, private sector, and NGOs). Options for waste separation and treatment/composting plants for agricultural and municipal waste streams will be investigated and a financing plan to sustain activities will be assessed. Moreover, related commune action plans will be developed and integrated within the larger landscape management plans. Awareness raising on recycling, exposure risk and chemical safety (targeting authorities, communities, private sector, etc.) may parallel technical training on sampling and monitoring (to be determined based on other partner interventions).

Concurrent to all the above activities, knowledge will be strengthened through targeted awareness-raising and outreach programs that foster practical and technical learning for the benefit of beneficiaries, CSOs, local authorities, etc. Training will be promoted in a diverse set of SLWM and SFM skills and gaps in knowledge. For example, this will include demonstration of new forest product production which ensures protection of resources while at the same time generating revenue from them. Component 2 activities for SLWM and SFM will be demand-driven and community managed. Community-level committees will be formed and trained to supervise and manage functions as determined by the nature

¹³ <http://maliactu.net/koulikoro-mobilisation-generale-pour-la-gestion-des-dechets-solides/>; <http://www.jumelage-quetigny.fr>

of the intervention. Community groups and stakeholders will be empowered to prioritize their needs and help design the field initiatives. Their difficulties and the need to introduce technology packages and livelihood options suitable to specific agro-ecological zones and changing climatic patterns will be a clear concern. The CW focused sub-component also thus looks to enhance knowledge on tools for managing and valorizing solid wastes within institutions and communities, and strengthen capacity for environmentally sound management (ESM).

Component 3: Learning, monitoring, and adaptive management

Component 3 promotes and facilitates learning, monitoring, and decision support tools as necessary aspects of a landscape approach. It will support the preparation and adoption of tools and guidelines addressed at stakeholders and institutional authorities to help them better understand, cooperatively plan, monitor and implement the approach and plans. The component looks to improve the analytical tools, information base, and monitoring systems for better planning and stakeholder engagement. Key activities include: tools for spatial assessment, mapping and planning, action research, and knowledge products plus guidelines for extension, which will be applied through component 2. Such products help promote INRM scale up by connecting field activities to information and knowledge sharing. Component 3 also helps in the formulation of better informed land-use plans and serves as a basis for field activity selection and their monitoring.

Continual learning and adaptive management are considered fundamental principles in a landscape approach and will underpin the entire project approach. Learning and effective revision require continual adjustment in which new knowledge is derived from multiple sources. Component 3 comprises knowledge management, experience dissemination, and strong M&E, both for project implementation (including of the land use plan targets), impact, and the assessment of GEBs related to the four focal areas used. To facilitate shared learning, information needs to be made widely available to increase understanding of tradeoffs within landscapes and best practices for the Sahel. The GEF project supports targeted learning on INRM and assessments will directly feed into the design, development, and monitoring of SLWM, SFM and ESM of waste activities. Component 3 can subsequently enable the eventual scaling-up and replication of the lessons learned through Component 2, using the platform and mechanisms created in Components 1 and 3 to share experiences within and among the targeted sites and relevant stakeholders at all scales.

4) The incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and co-financing

In the Sahel, a structural approach is needed to cope with multifaceted vulnerabilities and threats. Landscapes have multiple purposes, each of which is valued in different ways by different stakeholders. Landscape approaches seek to achieve social, economic, and environmental objectives in areas where agriculture and other land uses compete with environmental goals. Improving ecosystem integrity in the Sahel necessitates laying emphasis on the complexities and multiple needs demanded by fragile ecosystems. The project seeks an approach to natural resource planning, use and management that can restore and protect the health, functional integrity and resilience of ecosystems. GEF funds will be used to adopt such an approach. The incremental aspect of the project is to apply such a framework in target Malian districts by facilitating the development of management plans and the implementation of their integrated elements. It will provide a basic framework for joint thinking among multiple stakeholders to help balance competing demands on land, for meeting different priorities, and delivering equitable benefits.

P2RS will be financed through grants and loans. For Mali, co-financing will come from an AfDB grant and loan of an equivalent total amount of USD 51 million, a government contribution of USD 7,777,503 and beneficiaries of USD 1,251,714. The contribution of beneficiaries will be in kind by bearing the operation and maintenance costs of select infrastructure and facilities. GEF funding will complete on-the-ground activities and align the project to the GEF2020 vision (i.e. scaling up, integration, resilience, sustainability).

GEF funds will allow the project to better address drivers of and solutions to environmental degradation by concurrently balancing considerations for socio-economic development, poverty alleviation, food security, and climate change adaptation, all of which are fundamentally interlinked in Mali's fragile rural landscapes. GEF will help promote a cross-sectoral, holistic approach to landscape management to reverse the decline in ecosystem services and reduce impacts from habitat degradation (e.g. overexploitation, harmful chemicals, agricultural waste), climate change, pollution and resource overexploitation. Moreover, GEF funding will allow the integration of two additional aspects into the project's landscape approach: waste management and shelter. Both have a clear role in ecosystem degradation and their insertion

into the project aims to make it even more holistic by targeting additional uses of - and pressures to - that landscape.

In the target landscapes, GEF funds will allow the creation of multi-stakeholder platforms involving public and private sectors and civil society to facilitate consultation, participatory planning and roll-out of activities. A participatory planning process will help better address land use priorities and specific needs at village level. The GEF incremental process begins with a participatory problem/option analysis and results in plans and activities for INRM interventions. Specific interventions will be tailored to improve land use practices based also on priorities identified by communities themselves, with their involvement in implementation made possible.

Fully in line with GEF6 aspirations, this multi-focal area project for Mali envisions an intervention based on a multiple benefits approach and an all-inclusive concern for ecosystem health and rural needs. The project emerges from national priorities discussed at Mali's NPFE in June 2015 and has been developed as an operation combining several of the GEF strategic goals. It is an ambitious project given its nature and innovative mix of focal areas. Contributions from Mali's LD and CCM allocations plus SFM and CW focal areas will enable the project to target a bigger spectrum of environmental pressures and apply cross-cutting responses to the development/environment nexus. These focal areas will each have a role in the project's landscape-based approach and help target multiple issues that affect ecosystem integrity. GEF will promote the scale-up, and bottom-up implementation, of SLWM activities to improve agro-sylvo-pastoral systems, flow of agro-ecosystem services, and reduce pressures on the resource base (LD-1, LD-3). CCM and SFM funds will be used in activities that lead to reduced emissions from forest and land-based sources, including open burning of agricultural and other wastes, and through measures for improved management practices in agriculture, forest, and land-use sectors (CCM-2, SFM-2). Improved forest management will reduce pressure on forest ecosystems, avoid deforestation and increase carbon sequestration capacity from greater vegetative cover. Moreover, environmentally-friendly construction techniques that further contribute to reduced deforestation and GHG emissions will be additional incremental elements to this project (CCM-2). CW-2 funds will integrate activities for achieving a progressive reduction of harmful chemicals, wastes and uPOPs emitted from unsound waste management and open burning practices. A healthier, greener landscape, which supplies sustainably diversified production and sustains agro- and forest ecosystem services, contributes to reducing fragility of the landscape and communities. Activities will together respond to the needs of households and ecosystems, forming a strategic intervention for reducing land and forest degradation, enhancing carbon stock, and improving overall landscape health.

Interventions meant to regenerate degraded landscapes help break the cycle of food insecurity, vulnerability and environmental degradation. The GEF funds will allow the project and stakeholders to reconcile environmental protection and development through interventions in different elements of a matrix, which seek livelihood goals, economic gains, and/or conservation, within the context of the AfDB baseline. The GEF-AfDB partnership will be synergistic, permitting investments in agro- and forest ecosystems so they become more productive, diversified, better conserved and more resilient. The project will address underlying human-induced causes of ecosystem degradation. In addition to improving infrastructure, value chains, and market linkages, as planned in the baseline, incremental activities in SLWM, SFM and environmentally sound waste management will complement and add a holistic perspective to the baseline project, such that the food crises resulting from the general nature of the Sahelian landscape will be reduced.

Most of the CW funds will be used to promote BAT/BEP for sound management of municipal waste. The incremental reasoning of the CW component arises from the fact that waste will be treated and also valorized for use in agriculture, thereby linking the sub-component strategically to project objectives on sustainable agriculture. The baseline project will seek to develop productive investments using the pilot units, and this will be assessed during project appraisal. During PPG, detailed activities will be defined and co-financing from private sector and local authorities will be assessed. The aim is to also underline the costs of inaction and in parallel demonstrate that feasible measures exist to reduce uPOPs releases and other contaminants, and turn once harmful substances into a potential to be exploited for productive purposes. By integrating waste management considerations within the landscape approach, the GEF intervention is by its nature highly incremental per se.

Without GEF, the integrity and sustainability of the natural assets of Mali's Sahelian regions will continue to degrade to the detriment of the environment, economy and livelihoods. As areas continue to experience population growth, natural vegetation will be systematically cleared for food production and land-use competition will intensify. These

unsustainable patterns will exacerbate poverty and curb the future growth potential of the target regions and country as a whole. Without the project, actual ground interventions on ESM, including uPOPs emissions, would also not be implemented. The absence of GEF funding would hinder the baseline intervention in addressing long term environmental degradation issues. However, with GEF support, root causes of resource degradation will be targeted through a multi-scale, multi-sectoral and multi-stakeholder approach to INRM which will help ensure preservation of agro- and forest ecosystems for the long-term viability of Malian Sahel. Agro-ecosystem productivity over time will be enhanced, with reduced deforestation and land degradation as well as decreased vulnerability of rural households to climatic, economic or political shocks. Through the planned interventions, a large section of the Sahelian population can better cope and bounce back from the impacts of recurrent drought and degrading soils, thus greatly improving their food security, health and nutrition. GEF resources will make both the AfDB regional and Mali projects more effective in their objectives.

5) Global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF)

The project will realize important environmental - both local and global - benefits linked to the targeted GEF focal areas, in addition to livelihood benefits, enhanced by the use of a landscape approach. First and foremost, more broadly, it will result in enhanced productivity and protection of Mali's agro- and forest ecosystems. The application of the landscape approach to natural resource planning, use and management will better restore and protect the health, functions and resilience of the entire landscape for different benefits.

Component 2 implements the landscape approach that concurrently meets a diverse range of local needs (e.g. food or crop production; water availability; alternative income; rural shelter); reduces harmful chemicals and wastes that are absorbed into ecosystems; and contributes to global environmental benefits (e.g. reduced land and forest degradation, net reductions in land-based and deforestation-induced GHG emissions). The project's integrated approach will deliver numerous GEBs by enhancing vegetative cover and maintaining various ecosystem services in fragile priority landscapes. The expected increase in vegetation cover by harnessing water, protecting woody biomass, soil conservation and the increase of agro-sylvo-pastoral lands will contribute to safeguarding the services provided by agro- and forest ecosystems and the direct or indirect sequestration of carbon. The GEF support will help Mali reduce land degradation as a consequence of agricultural expansion, deforestation and soil fertility loss. Raising soil organic matter and increasing the quantity of woody and other biomass will increase carbon sequestration in land and trees. Enhanced agricultural practices will enhance soil quality while reducing agro-based GHG emissions. Improved forest management, targeting forest depletion drivers and mitigation, will enhance the social and environmental benefits provided by forests (in terms of provisioning, regulating, or supporting services). Restored tree landscapes help stabilize micro-climates and reduce CO2 emissions. Through the AVN activities, ecological structures will be built within communities, further contributing to environmental protection and reduced emissions (in addition to increasing environmental stewardship and new economic opportunities based on a stimulated local market for housing).

In meeting objectives under the Stockholm Convention, the project will demonstrate alternatives to preventing POPs formation from open burning of different categories of wastes, such as agricultural residues and municipal wastes. Increased awareness of the health, environmental and economic impacts and gains to be made from ESM will help lead to action. By avoiding human and animal contact with waste, reducing contamination of water sources (surface and groundwater) and agricultural fields, the load of pollutants that enter the landscape and food chain will be reduced. Additionally, as open burning practices are also significant contributors to GHGs, such as carbon dioxide and methane, project activities will give a positive contribution to CCM, in addition to those already delivered by the SLM, SFM and sustainable housing related activities.

Global benefits will cut across the four GEF focal areas to result in: (i) a reduction in the negative trend and severity of land degradation in target landscapes (soil degradation, desertification and deforestation); (ii) increased land area under SLM and SFM which reverses the decline in agro- and forest ecosystems in the Sahel; (iii) vegetative cover restored in areas of degraded croplands, rangelands, and woodlands; (iv) target landscapes are able to support increased production due to healthy ecosystems, with agro- and forest ecosystem services restored/maintained in support of human livelihoods; (v) reduced pressures on natural resources from competing land uses and users in the wider landscape; (vi) reduced GHGs and increase in carbon stock, over time, through increased vegetation cover, conservation agriculture, restored forest landscapes and avoided deforestation; (vii) reduced health and environment risks caused by the unsound management of chemicals and wastes, particularly by open burning, thus protecting populations as well as reducing

emissions to the atmosphere, (viii) the phasing out of agricultural use of POP pesticides through the promotion of BAT/BEP; (ix) the protection of human health and the environment through reduction of emissions originating from unsustainable municipal and agricultural waste operations; (x) reduced emissions from forest and land-based sources, including open burning of agricultural and other wastes, and through improved measures in agriculture, livestock, forest, and land-use sectors; and (xi) increased resilience to climate change within production systems and communities.

According to a recent FAO forestry report¹⁴, the forest area in Mali has been decreasing 79 (1000 ha) per year from 6,690 (1000 ha) in 1990 to 4,715 (1000 ha) in 2015 with an annual change rate of -1.4%. Deforestation has worsened since 1990 to reach the level of 146.0 (1000 ha/year) in 2010. In order to improve forest landscapes and maintain flows of forest ecosystem services, the project plans the following activities:

1) Avoid or reduce deforestation through forest protection/conservation. 5 community forests (of 300 ha in each district) will be established and sustainably managed by community planning committees.

2) Foster reforestation by establishing 2,500 ha of woodlots and nurseries, 3,000 ha reforested via assisted natural regeneration, and 2,500 ha under agro-forestry.

Furthermore, we assume that SFM will provide additional benefits to the forested area based on better management of target areas and enrichment, and we add this consideration to the final estimation. According to FAO's 2010 Global Forest Resources Assessment, the estimate of average forest carbon stock per ha in Mali is 23 tons of carbon per ha.

1) Estimating global environmental benefits from reduced deforestation

The project intends to reduce deforestation by establishing 5 community forests of a total 1,500 ha over 5 years, which is 300 ha for each year. We use the average forest carbon stock per ha for Mali of 23 t/ha. Assuming improved forest management has direct carbon benefits of reducing deforesting by 300 ha per year for five years, carbon benefits are 34,500 t or 126,615 t CO₂ eq benefits. This is calculated as follows:

5 years x 300 ha per year x 23 t carbon per ha = 34,500 t carbon benefits

or 34,500 t carbon x 3.67 = 126,615 t CO₂ eq benefits

(3.67 is the conversion factor for changing carbon benefits to CO₂ eq benefits)

We believe that the project will continue to reduce the deforestation rate by 300 ha per year for an additional 15 years after the project ends. The indirect benefits are 103,500 t carbon benefits or 379,845 t CO₂ eq benefits:

300 ha per year x 15 years x 23 t carbon per ha = 103,500 t carbon benefits

or 103,500 t carbon x 3.67 = 379,845 t CO₂ eq benefits

We also assume, however, that deforestation will not stop totally during the course of the project or after. As such, using a conservative estimation of 30% of the remaining deforestation rate, the total direct and indirect benefits from reducing deforestation is 41,400 t carbon benefits or 151,938 t CO₂ eq benefits, calculated as follow:

$(34,500 + 103,500) * 30\% = 41,400$ t carbon or or 151,938 t CO₂ eq benefits,

2) Estimating global environmental benefits from reforestation

The project intends to promote reforestation on 8,000 ha based on 2,500 ha of woodlots/nurseries, 3,000 ha ANR, and 2,500 ha under agro-forestry. We know that there is some minimal existing vegetation cover in the target (savanna) areas, so we estimate a baseline of 5 t carbon/ha. We also estimate that the project can reach an average of 15 t carbon/ha after 5 years which is 10t carbon per year. Assuming that reforestation will occur for 5 years, direct benefits of reforestation will be:

8,000 ha x 10 t carbon per ha per year x 5 years = 80,000 t carbon benefits

or 80,000 t carbon x 3.67 = 293,600 t CO₂ eq benefits

If reforestation endures and trees continue to grow for an additional 15 years after the end of the project, indirect benefits will be:

8,000 ha x 23t carbon per ha per year = 184,000 t carbon benefits

or 184,000 t carbon benefits x 3.67 = 675,280 t CO₂ eq benefits

¹⁴ FAO, Global Forest Resources Assessment, 2010. <http://www.fao.org/docrep/013/i1757e/i1757e.pdf>

Therefore, the total direct and indirect benefits from reforestation is 264,000 t carbon benefits or 968,880 t CO₂ eq benefits.

As mentioned, we finally assume that enhanced SFM will provide additional carbon benefits (additional stock) to the forested area by using a conservative estimation of 5 t c/ha over 9,500 ha. We will then have 47,500 t carbon benefits or 174,325 t CO₂ eq benefits.

In sum, we expect total benefits (direct plus indirect, with added considerations and assumptions as explained above) through reduced deforestation, reforestation and SFM of 352,900 t carbon benefits, or 1,295,143 t CO₂ eq benefits.

During PPG, the EXACT tool or an equivalent will be used to make a more detailed calculation of carbon benefits. Those calculations will also be based on better data on type of forest, woodland, or habitat, exact values, etc.

The main quantifiable GEBs (to be further defined during PPG phase¹⁵) are:

- 5,000 ha of land under SLM in production systems (agriculture and rangelands), contributing also to Mali's Land Degradation Neutrality target setting;
- Avoided deforestation and forest degradation (% reduction lost tbd);
- Enhanced carbon stock through SFM, reforestation, etc. (on a total 9,500 ha) with a cumulative avoided GHG emissions of 352,900 tons of carbon benefits (direct and indirect CO₂ emissions reduction or 1,295,143 t CO₂ eq)¹⁶;
- Project activities related to AVN methods will lead to an additional 350,000 tons of CO₂ mitigated. It is expected that the rural housing sub-component will be expanded beyond the project life as a result of training and creation of a local market. About 20,000 AVN rural houses are expected to be developed in the years following, with a total CO₂ emission reduction of 350,000 tons (20 tons CO₂ avoided per house of 25m² over 30 years life¹⁷).
- Reduced prevalence of harmful chemicals and waste and reduced uPOPs released into the environment (air and land), with concurrent reduction of the exposure levels of humans and ecosystems to harmful chemicals and wastes: 2g TEQ p.a decline in dioxins and furan emissions resulting from the reduction of open burning practices, improved management of municipal solid waste, and reduced chemical pollutants and contamination.

While delivering GEBs, the activities will concurrently improve the livelihoods of direct and indirect beneficiaries, especially smallholders involved in agriculture and pastoralism. The project aims to strengthen a trend towards sustainable management, regeneration and protection of Sahelian landscapes with an additional focus on enhancing local livelihoods. The main socio-economic positive impacts as a result of this will be: improvement and diversification of agricultural and forest productivity leading to secured food production and security; reduced vulnerability to climatic and economic shocks; income generation (especially for women and youth); improved access to basic socio-economic facilities; improved environmentally sound waste management leading to enhanced human health.

6) Innovativeness, sustainability, and potential for scaling up

A landscape approach entails managing land by considering the natural and human systems that depend on it. It is people-centered and addresses the needs of those who live, work and shape these landscapes. The approach's principles are innovative, and emphasize integration of development and environmental priorities with continuous adaptation as necessary to meet shifting needs and objectives. This project's multiple benefits approach to address a multiplicity of productive, social and environmental needs (local and global) first and foremost underlines its innovativeness. This may be a first or one of few GEF projects integrating LD, CCM, SFM and CW focal areas using a landscape approach. Fully in line with GEF6 and GEF2020 priorities for multiple scales and integration, the project aims to eliminate structural rural causes of the Sahelian crisis by bringing together relevant actors under a platform for collective dialogue and planning to rehabilitate and maintain the viability of ecosystems. Looking at the broader landscape scale allows projects to address a far greater number of factors and stakeholder needs from the outset, which likely increases the probability of

¹⁵ The project targets related to CW focal area will be calculated in more detail following assessments to be undertaken as part of the PPG phase.

¹⁶ http://www.cdclimat.com/IMG/pdf/14_Etude_Climat_EN_Deforestation_and_carbon_markets.pdf

¹⁷ For AVN technology CO₂ emission reduction, see http://www.lavoutenubienne.org/sites/default/files/stock/documents/marketing_promotion/15-11-19_AVN_Plaquette-VN-habitat-bascarbhone_FR-light.pdf

successful outcomes. Allowing stakeholders to decide on resource use in such a manner that community, economic and conservation interests are more balanced has potential to be much more sustainable.

The project is additionally innovative by addresses competing demands on resources, while considering the physical features of the landscape itself and the socio-economic and socio-political drivers that affect land use, particularly for agriculture, forestry and water. Innovation is also related to: the elimination of production and human-induced constraints; technical innovations for drylands that are more ecologically appropriate and socio-economically sustainable; and working at different scales. In parallel to the enhancement of agro-sylvo-pastoral systems, this project is additionally unique by integrating housing and sound waste management aspects into its landscape approach, thus giving fuller consideration to landscape health and resilience, which concurrently reduce pressure on land and forest.

The implementation of measures that are economically, financially and technically viable will help ensure the feasibility and sustainability of project interventions. Sustainability can be achieved only by ensuring participation of all relevant stakeholders, including communities, in the design of activities based on diversified needs; considering competing needs for land uses within a given area; monitoring actions on the territory; and enhancing technical and organizational capacities at all levels to facilitate knowledge and uptake of technologies. The project will seek each. The design of activities is additionally articulated around the following principles: careful sizing and targeting of infrastructure; stakeholder participation and ownership (men and women); involvement of beneficiaries in all stages of planning and implementation; quality of facilities and equipment; and the viability of production activities suitable to the agro-ecological zone thereby ensuring durability. Sustainability aspects will be further enhanced by building capacity of beneficiaries and decentralized staff in the adoption of INRM. The AVN approach also has long term sustainability impacts. Its activities stimulate a value chain for bioclimatic constructions able to become self-sufficient. Sahelian community members will be trained in the new AVN technique, thus building a local housing market and additional economic opportunities that will last beyond the project lifetime. When this occurs, AVN withdraws from the territory and targets a new area: hence the potential for scale-up of ecological habitat measures which reduce environmental degradation. Capacity building will not be limited to sensitization and training of the various project stakeholders, but it will also include monitoring/guidance, coaching and practical application of acquired knowledge (thus linking all three project components), helping ensure post-project continuity.

As it is also the aim to ensure long-term viability, the project will seek to promote and scale up successful activities to other areas via knowledge sharing to national institutions, to the region via the AfDB regional program through the CILSS network; and through other effective avenues for knowledge sharing, such as the recently established Regional BAT/BEP Forum for Western Africa, by which lessons on waste management, ESM and uPOPs release reduction can be disseminated at regional level. Through strong emphasis on sharing experience and lessons, the tools and measures used in the project could be widely replicated in the country and beyond. Given it embraces various socio-economic sectors (agriculture, forestry, shelter, waste, etc.) and related capacity building activities, it will create opportunity for awareness raising, training, strengthened coordination and collaboration between sectoral stakeholders, which are each conditions for scale up and replicability. The project promotes adaptive farmer centered participatory SLFM to identify locally-appropriate solutions to degradation for replication across communities but also administrative regions. The knowledge and skills gained by the community-level committees will further ensure long-term sustainability of the practices. Encouraging institutional actors to work with farmers will lead to the adoption and validation of a number of sustainable agricultural, pastoral, and INRM practices. It also influences how government institutions implement extension activities in rural communities, which has important implications for sustainability and potential for up-scaling. The knowledge and practical capacities will be in place, as well as enabling frameworks through the development of land use plans.

By focusing learning aspects on the benefits of a landscape approach and by demonstrating the gains to be made locally and nationally (via, for example, enhanced production, improved socio-economic indicators, etc.), there will be strong incentive at institutional and community levels to sustain the activities and mechanisms beyond project closure. The project is a real opportunity to strengthen growth in agriculture while conserving the productive capacity of the land on a significant portion of Mali's Sahel. GEF support will be critical to assist Mali promote and expand INRM, and ensure larger scale dissemination of SLFM to fight rural scarcities. The project will help Mali in its transformation towards a country and economy of more widespread landscape health, lower land degradation and low-carbon. The successful activities from Mali will become experiences for regional up-take and will have an effective avenue for dissemination.

The AfDB P2RS program offers a long term vision as the full program is planned for a 20 year period. At the same time, this regional dimension can feed new ideas into Mali's activities and contribute to developing synergy.

2. *Stakeholders.* Will project design include the participation of relevant stakeholders from civil society organizations (yes /no) and indigenous peoples (yes /no)? If yes, identify key stakeholders and briefly describe how they will be engaged in project preparation.

The project targets the most vulnerable households, subsistence smallholders and pastoralists in the Kayes, Koulikoro and Ségou regions, with special attention to women and children given their more acute vulnerability. The expected beneficiaries of the full AfDB project are about 580,000 farmers. The project will be designed with the active involvement of communities, regional authorities and other stakeholders as relevant (NGOs, private sector, etc.) in the target communes. In line with the baseline, it will be implemented through a participatory approach whereby all activities are carried out in close consultation with local stakeholders. Such people-centered approach applied at landscape scales will pay better attention to beneficiary concerns and local specificities/needs.

The landscape approach integrates sustainable management of ecosystems with sustainable production of food and other goods. A key focus of the project is to support community-level efforts to enhance production systems (i.e. sustainable agriculture, agro-forestry, improved livestock, etc.). Participatory land use planning at village level will primarily delineate land resources to accommodate multiple livelihood needs. A participatory project approach also entails the establishment of village committees in order to ensure the social organization of the work and supervise management and monitoring of activities. Because environmental degradation is not restricted to community boundaries, the project may also facilitate meeting of inter-village committees.

During baseline program identification, broad-based consultations and discussions were held with key institutions and stakeholders, including national bodies in charge of agriculture, fisheries, livestock, environment, health, and water. The consultative process was extended to civil society (NGOs, farmer organizations, etc.). Target areas were selected on the basis of exchanges and discussions with national officials, community representatives and international organizations involved in food insecurity initiatives. The baseline and GEF project will further establish a framework for dialogue, information sharing and conflict resolution; ensuring equitable access to services. The participatory mechanisms will be underpinned by a comprehensive program of information, awareness raising, and consultation with various stakeholders, including farmers and pastoralists, local officials/authorities, women associations, CSOs, etc. (i.e. representatives of the array of actors in the rural sphere). The aim is to ensure engagement by stakeholders for long-term impact.

The GEF interventions will promote collaboration with households and farmer organizations that are most exposed to fragility. Whenever possible, activities will be implemented with the support of CSOs to enhance reach and acceptance. The sustainable housing component will be led and implemented by the NGO La Voute Nubienne that specializes in this domain, with which a contractual agreement will be made. Partner CSOs will be engaged at PPG formulation and implementation stages, while consultations and involvement of municipalities and other actors for the waste management component will be pursued. PPP will be assessed for the CW components also during PPG phase. Local communities rarely participate in waste management practices such as waste segregation. Capacity building activities and public awareness are needed to better involve them in waste segregation and to minimize health and environmental risks.

The project will fall under the responsibility of the Ministry of Rural Development which will house a project management unit (PMU). A focal point will be established in each regional directorate of agriculture. The PMU will be composed of expert staff in operational, financial and sectoral needs (including agro-sylvo-pastoralism, M&E, gender, etc.). By encouraging beneficiary participation and access to decision-making processes, the project will build social capital and ensure a sustainable process for meeting the environmental and socio-economic needs of the target landscapes and communities.

3. *Gender Equality and Women's Empowerment.* Are issues on gender equality and women's empowerment taken into account? (yes /no). If yes, briefly describe how it will be mainstreamed into project preparation (e.g. gender analysis), taking into account the differences, needs, roles and priorities of women and men.

Gender inequality indices in Sahelian societies are among the lowest. Social indicators of women's status in terms of literacy rates, access to jobs, life expectancy and maternal and infant mortality are alarming. With growing resource

degradation, women's workload, responsibilities and risks have increased considerably as they cope with harsh and changing conditions. Women are often deprived of access to productive resources, including land, and are affected by lack of access to clean water, sanitation and energy due to traditional roles for collecting water and fuelwood. Given women carry out more than 65% of agricultural activities in the Sahel, gender inequality is damaging to agricultural growth. Women's role in the rural sphere and gender concerns must be analyzed and integrated into project design based on differentiated roles, realities and needs and the strong potential of women in enhancing food and nutritional security.

Mali ranked last out of 86 countries in the 2012 Social Institutions and Gender Index that measures discriminatory social institutions. In Mali's policy framework women have the same legal right as men to vote, participate in public life and access land. However, in reality, many obstacles prevent women from exercising their rights, including lack of access to credit and entrenched customary rights in the rural sphere. In many rural areas, customary law is predominantly applied and dictates that women are only entitled to poor quality land or use rights and not ownership over land. In rural Mali, land tenure and water rights are a source of conflict and this is expected to increase with population growth, climate impacts and degrading landscapes. Such realities will affect women disproportionately.

Social factors, primarily socially- and gender-determined occupational roles, also affect the level and frequency of exposure to chemicals and unsanitary conditions, and the consequential effects on health. This means communities must be informed directly about local level health risks and their responsibilities as regulators. Improving the management of domestic and municipal waste will have direct and differentiated benefits for women, normally responsible for household waste management and those most exposed to uPOPs emissions when wastes are burned in open air and backyards. An analysis of exposure levels based on socio-economic group will be undertaken with special attention to gendered roles within communities. Consequently, activities can be tailored to different risks and needs of women, men, children, the elderly, etc. to reduce exposure, target better management of hazardous waste, and have greater impact.

The project will take into account the socio-economic and gender dimension in all its components, seeking strong participation of women and youth. It will ensure the application of gender-sensitive infrastructure and technologies. It will enhance income-generating activities for women linked to enhanced agricultural productivity and the strengthening of capacities of women associations. The project will also focus on rural activities in which women have a recognized know-how (vegetable gardening, rice, small livestock, poultry, processing activities, etc.) and from which they can most benefit. Baseline training will additionally target their skills development in business planning, literacy, marketing techniques and financial management, thus strengthening entrepreneurship and empowerment at the local level.

Specific gender promotion activities may include: producing gender-disaggregated data throughout project implementation; analyzing tenure and raising awareness; women participation in production and income-generating activities; capacity building with specific targeting of women; strengthening the position of women's groups in agricultural and forestry product processing; identification of groups vulnerable to chemical exposure (subsequently ensuring that actions address gendered risks); facilitating women's access to factors of production; promoting gender-sensitive infrastructure which reduces the burden on women; ensuring equal access by men and women to information, capacity building and awareness campaigns; gender sensitive budgeting and planning; hiring a gender expert for the PMU; and ensuring female participation in decision making bodies.

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

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 project will have a strong reliance on adaptive management to mitigate all threats and risks below:

- i. institutional and organizational weaknesses: The project aims to build on existing structures, notably those of CILSS and national project executing agencies, which will help ensure smooth implementation. Experts in specific technical and organizational fields will be hired to form the PMU.
- ii. participation in multi-stakeholder platforms: institutional and governance concerns are identified as severe obstacles to implementation of landscape approaches. The risk is that participation in platforms and multi-stakeholder/sectoral planning may be low. The project aims to promote awareness raising and emphasize multiple benefits at scale,

- underlining the reconciliation of environment and development trade-offs as both stand to gain.
- iii. climate hazards: Climate threats (especially drought) will be mitigated by the project's direct focus on resilience and adaptation which will gradually contribute to lessen the impacts of climate variability. Planned activities, such as crop diversification, extension of resilient crops, water management, etc. will help to better cope with shocks and enhance the resilience of rural communities and the ecosystems upon which they depend.
 - iv. farmer/breeder and gender conflicts: will be mitigated through early engagement, dialogue, information sharing and mediation efforts and specific activities that take into account separate though interlinked realities and needs.
 - v. project/community conflicts: Mechanisms for dialogue and awareness raising will be established, including a communication plan, consultations, and development of training programs.
 - vi. land tenure: Insecure and unclear tenure can undermine incentives for SLM. The project will work with all stakeholders - local, national, governmental, non-governmental - to identify working SLM strategies.

Climate change has had harmful impact on Mali's agricultural yields and its growing variability and severity poses unprecedented challenges in the Sahel. Increasing drought and irregular or decreasing rainfall can undermine the objectives of the project by decreasing agro-sylvo-pastoral production; drying up water resources; displacing populations; aridification; locust invasion; and intensification of conflicts between scarce resource users. The project has strong consideration for climate adaptation in its interventions, given its innate focus on resilience.

The AfDB baseline is classified a Category 2 according to the Bank's environmental and social safeguard system. The project has undergone an environmental and social assessment in accordance with the Bank's procedures and national regulatory frameworks. The assessment proposes tools for monitoring risks and mitigation measures which include the preparation of sub-project environmental and social management guidelines. If some activities (e.g. infrastructure construction) are likely to produce low-to-moderate negative social or environmental impacts, these will be less than the overall environmental benefits ensuing from the GEF project activities. Moreover, the expected negative impacts are generally temporary, fairly limited in scope and can be mitigated using adequate project site monitoring measures. The impacts will also be mitigated using suitable agricultural and water techniques, compensatory reforestation, sensitization on health and sanitation, and close environmental monitoring.

5. Coordination. Outline the coordination with other relevant GEF-financed and other initiatives.

The AfDB has many years of involvement in the Sahel and P2RS builds upon these and considerations for what has been most effective and what is missing from the myriad of on-going rural development and food security initiatives, for example the AfDB Food Security Consolidation through Development of Irrigation Farming Project (PRESA/DCI) in Mali approved in 2013. Experience shows that adequate medium- and long-term investments in the resilience of vulnerable households are critical to addressing environmental and economic shocks at local and national level.

The proposed project will ensure collaboration and synergies with related initiatives in the country and region, critical given its multi-focal nature. In particular, this includes the following GEF funded projects: FAO LDCF 'Strengthening Resilience to Climate Change through Integrated Agricultural and Pastoral Management in the Sahelian zone in the Framework of the SLM Approach' (ID4822); World Bank 'Great Green Wall (GGW) Natural Resources Management in a Changing Climate in Mali', whose goal is to expand the adoption of SLWM practices in targeted climate vulnerable communes (ID5270); and UNEP's 'Scaling up and Replicating Successful SLM and Agroforestry Practices in the Koulikoro Region of Mali' (ID5746). The World Bank has a major intervention called the 'Agricultural Productivity Development Program in Mali (PAPAM)' which focuses on increasing productivity of key production systems by addressing bottlenecks to agricultural modernization (lack of productive infrastructure, low farmer productivity, lack of sector coordination). The AVN also currently has a rural habitat program called 'AVN's low-carbon building / green job program in West Africa', a five year program (2012-2017) with €4.2 million financing (1 million for Mali) for 12 regions of 3 West African countries (Mali, Burkina, Senegal), supported financially by various donors, including FFEM and AFD. Currently, this housing market is growing 30% a year, but it has to be boosted in order to help reduce growing forest degradation and changing shelter needs. A number of these projects are closing soon; hence, the timing of the AfDB project is ideal to consult and carry on momentum.

Although Mali has no national CW projects, it is involved in a number of regional interventions on POPs, obsolete pesticide disposal, and other. The project will coordinate and build upon these existing interventions in the CW area.

Some of these important regional initiatives are under implementation by UNEP. These include the ‘AFLDC: Capacity Strengthening and Technical Assistance for the Implementation of Stockholm Convention NIPs in African LDCs of the ECOWAS Subregion’ (ID3969), which will be particularly useful in its objective of strengthening regulatory measures and institutional capacity, the ‘Integrated Health and Environment Observatories and Legal and Institutional Strengthening for the Sound Management of Chemicals in Africa’ (ID9080), with its objective of strengthening national and regional institutions and frameworks, and finally the project ‘Continuing Regional Support for the POPs Global Monitoring Plan under the Stockholm Convention in the Africa Region’ (ID4886), which aims to create and strengthen the capacity for sustainable monitoring of POPs. These UNEP projects focused on regulatory frameworks, monitoring, and capacity will be particularly important for coordination, given the AfDB project will focus more on implementation of ground level activities. Joint activities in monitoring and lessons learned can be sought. The FAO regional project (ID4740) ‘Disposal of Obsolete Pesticides including POPs and Strengthening Pesticide Management in the Permanent Interstate Committee for Drought Control in the Sahel (CILSS) Member States’ will also be consulted given its link to CILSS and its focused attention on better managing and eliminating existing obsolete pesticides, including POPs and associated wastes. Importantly, a UNIDO project was recently approved under the Enabling Activities POPs window for the review and update of Mali’s NIP. The project will coordinate with this initiative, as each intervention supplements the other. The AfDB project can serve to apply the CW regulatory framework supported by these other partners.

The project also fully aligns to important national programs, primarily the government’s approved SLWM Country Strategic Investment Framework (CSIF), which emphasizes decentralization of NRM (to regional assemblies and communes), land tenure reviews and security, common environmental policies, and effective coordination of land management. The AfDB GEF project can build on its components and contribute to a more effective implementation of the framework. Moreover, Mali’s position in the West Africa region also aligns it with numerous regional initiatives for rural development, first and foremost of the CILSS given its relation to the baseline project. Mali is additionally part of the regional Sahel and West Africa Program (SAWAP) in Support of the GGW Initiative which aims to combat desertification and improve the living conditions of populations through the large-scale promotion of SLWM. The GGW Initiative can offer a large platform for exchange of experience on resilient natural resources based livelihoods. Furthermore, the Global Alliance for Resilience Initiative (AGIR) - Sahel and West Africa is a tool for coordinating assistance towards building resilience to the effects of climate change in the Sahel and seeks to achieve the “Zero Hunger” goal of eradicating hunger and malnutrition in the next 20 years. Several donor operations have been designed within the framework of the AGIR, including the Strategy for Security and Development in the Sahel (EU), Resilience in the Sahel Enhanced (USAID), the UN System’s Integrated Strategies for the Sahel, and The Sahel: Toward a Regional Approach (World Bank). The AfDB GEF project contributes to similar objectives and the Bank will participate actively in AGIR’s activities, building on them to better coordinate its operations with other partners. To this end, consultations which were initiated during program design will be continued during implementation.

6. *Consistency with National Priorities.* Is the project consistent with the National strategies and plans or reports and assessments under relevant conventions? (yes /no). If yes, which ones and how: NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, etc.

It must first be emphasized that the development of this proposal directly follows consultations and conclusions emerging from Mali’s NPFE, held in June 2015, where a multiple benefits approach project based on rural resilience, sustainable agriculture and that included components on sustainable housing and environmentally sound waste management was prioritized. This PIF builds upon those priorities and AfDB’s baseline was identified as most suitable.

The project will generate environmental benefits while simultaneously advancing the Government’s main development objectives and its commitments under environmental conventions. Mali has ratified the UNCCD, UNFCCC and the Stockholm Convention. The project contributes to efforts under each of these. It is synergistic with Mali’s National Action Plan to Combat Desertification (NAP-CD) which pursues objectives for resilience of ecosystems for agriculture, food production, and biodiversity conservation. For Mali’s government, land degradation and desertification are critical issues to be urgently tackled, and the project’s land restoration aims are perfectly in accord. Through its mitigation options in agriculture and forestry, it also adheres to Mali’s UNFCCC Second National Communication (2011).

Mali ratified the Stockholm Convention on POPs in May 2003. It submitted its NIP in August 2006 and prioritized protecting human health and the environment through restoration of contaminated areas. Based on indicative data, solid

municipal waste management, health waste management, open burning of agricultural residue and bush fires were identified as the main activities that release uPOPs in Mali. Mali is currently in the important process of reviewing and updating its NIP, and the project will implement on the ground interventions shaped by its priorities. It thus assists Mali in adhering to the Stockholm and other conventions (Basel, Rotterdam, etc.) on hazardous waste disposal.

Mali's key development objectives are set out in the Growth and Poverty Reduction Strategic Framework (GPRSF) which currently covers the 2012-2017 period. The overall goal of GPRSF is inclusive development that seeks to reduce poverty and inequality, based on security, macroeconomic stability, sustainable pro-poor growth, social services and governance. The project is consistent with each of its five pillars applied to a local level. The project is consistent with numerous other national policies and strategies, primarily those that govern Mali's agricultural sector: the Agricultural Development Policy; the Agricultural Sector Investment Program; the National Food Security Program; the National Irrigation Development Strategy; and the National Strategic Investment Framework for SLM in the context of TerrAfrica. It will also help achieve objectives set out in the national nutrition, gender, environmental protection, and climate change policies and action plans. Mali's Agricultural Development Framework Law urges the Ministry of Agriculture and producer organizations to promote SLM, with a focus on issues such as land tenure, soil fertility, land restoration, and environmentally friendly agricultural practices.

Finally, the project is consistent with the AfDB's country support framework for Mali, the agricultural sector strategy and the Ten-Year Strategy (2013-2022) which target inclusive and green economic growth. As regards AfDB priorities to pursue regional solutions to food security, the project will contribute to operationalizing the Global Water Coalition for the Sahel for which CILSS Member Countries designated the Bank as Leader, and is consistent with a number of regional policy guidelines on agriculture, food security and environmental management particularly related to CILSS, ECOWAS, and CAADP. The AfDB is placing strong attention on the Sahel and this GEF project is aligned to bank priorities for socio-economic stability in this crisis-prone region.

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

Knowledge promotion and management will be core elements of the project, given its national and regional dimension and potential for sharing experiences and lessons. A system for managing and sharing knowledge on the regional P2RS and sub-country projects will be established by setting up communication portals and services (electronic document management, internet tools, etc.) to build on and manage the data and experiences acquired. An adequate information, knowledge and communication system will be set up and an individual consultant will administer the strategy. This will include facilitating the flow of information at all levels of the program to the various stakeholders and partners on the ground. Internally, the strategy will focus on information sharing, regular dialogue at all levels, the dissemination of documents, and knowledge management. 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.

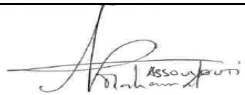
Supervision and monitoring missions will be organized during project execution. A framework for gender sensitive M&E will be developed before implementation starts to identify relevant indicators and procedures for feedback and reporting. Special emphasis will be laid on targeting the most relevant parameters 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.

PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)

A. RECORD OF ENDORSEMENT¹⁸ OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S):
 (Please attach the Operational Focal Point endorsement letter(s) with this template. For SGP, use this SGP OFP endorsement letter).

NAME	POSITION	MINISTRY	DATE (MM/dd/yyyy)
Issa Fakhiri Kone	GEF Operational Focal Point	Ministry of Environment	08/03/2015

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF policies ¹⁹ and procedures and meets the GEF criteria for project identification and preparation under GEF-6.					
Agency Coordinator, Agency name	Signature	Date (MM/dd/yyyy)	Project Contact Person	Telephone	Email
Mahamat Assouyouti		03/23/2016	Fatoumata Diallo	+223 20 227624	f.b.diallo@afdb.org

C. ADDITIONAL GEF PROJECT AGENCY CERTIFICATION (APPLICABLE ONLY TO NEWLY ACCREDITED GEF PROJECT AGENCIES)

For newly accredited GEF Project Agencies, please download and fill up the required GEF Project Agency Certification of Ceiling Information Template to be attached as an annex to the PIF.

¹⁸ For regional and/or global projects in which participating countries are identified, OFP endorsement letters from these countries are required even though there may not be a STAR allocation associated with the project.

¹⁹ GEF policies encompass all managed trust funds, namely: GEFTF, LDCF, and SCCF