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INTERNATIONAL DEVELOPMENT ASSOCIATION
PROJECT APPRAISAL DOCUMENT
ON A
PROPOSED CREDIT
IN THE AMOUNT OF
EURO 24.9 MILLION (US\$30.00 MILLION EQUIVALENT)
AND A PROPOSED GRANT
IN THE AMOUNT OF
SDR20.9 MILLION (US\$30.00 MILLION EQUIVALENT)
TO THE
REPUBLIC OF MALI
FOR A
MALI DRYLANDS DEVELOPMENT PROJECT
May 30, 2018

Agriculture Global Practice
Africa Region

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CURRENCY EQUIVALENTS

(Exchange Rate Effective April 30, 2018)

Currency Unit =	CFAF (XOF)
CFAF 555 =	US\$1
US\$ 1=	0.69538128 SDR
US\$ 1=	0.82668540 Euro

FISCAL YEAR

January 1 – December 31

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ABBREVIATIONS AND ACRONYMS

ACBP	Africa Climate Business Plan
AfDB	African Development Bank
AGIR	<i>Alliance Globale pour la Résilience au Sahel et en Afrique de l'Ouest</i> (Global Alliance for Resilience in the Sahel and West Africa)
APSU	Agricultural Policy Support Unit
ATI	<i>Agence d'aménagement des Terres et de fourniture de l'eau d'Irrigation</i> (Land and Irrigation Management Agency)
AWPB	Annual Work Plan and Budget
CERC	Contingency Emergency Response Component
CILSS	<i>Comité Permanent Inter-Etats de Lutte contre la Sécheresse dans le Sahel</i> (Permanent Interstate Committee for Drought Control in the Sahel)
CO ₂	Carbon dioxide
CPF	Country Partnership Framework
CPS/SDR	<i>Cellule de Planification et de Statistiques du Secteur Développement Rural</i> (Planning and Statistics Unit of the Rural Development Sector)
CREDD	<i>Cadre Stratégique pour la Relance Economique et le Développement Durable</i> (Strategic Framework for Economic Recovery and Sustainable Development)
CRS/SANAD	<i>Contrat de Réforme Sectorielle dans le Secteur Sécurité Alimentaire et Nutritionnelle et Agriculture Durable</i> (Sector Reform Contract in Food and Nutrition Security and Sustainable Agriculture)
CSA	Climate-smart agriculture
CSA	<i>Commissariat à la Sécurité Alimentaire</i> (High Food Security Council)
CT	<i>Comité Technique</i> (Technical Committee)
DA	Designated account
DCTs	Direct Cash Transfers
DNA	<i>Direction Nationale de l'Agriculture</i> (National Directorate for Agriculture)
DNACPN	<i>Direction Nationale de l'Assainissement du Contrôle des Pollutions et des Nuisances</i> (National Directorate for the Sanitation of Pollution and Nuisance Control)
DRPIA	<i>Direction Régionale des Productions et des Industries Animales</i> (Regional Directorate for Animal Production and Industries)
ECOWAS	Economic Community of West African States
EIRR	Economic internal rate of return
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
EU	European Union
EX-ACT	Ex-Ante Carbon-balance Tool
FAO	Food and Agriculture Organization of the United Nations
FIRR	Financial internal rate of return
FM	Financial management
GHG	Greenhouse gas
GoM	Government of Mali
GPN	General Procurement Notice
GRM	Grievance Redress Mechanism
ha	Hectare
IBM	Iterative Beneficiary Monitoring
ICT	Information and communication technology
IDA	International Development Association
IEG	Independent Evaluation Group
IFPRI	International Food Policy Research Institute
IPF	Investment Project Financing
IPPMP	Integrated Pest and Pesticides Management Framework
kg	Kilogram
LOA	<i>Loi d'Orientation Agricole</i> (Agricultural Orientation Law)
MA	<i>Ministère de l'Agriculture</i> (Ministry of Agriculture)
MIPROMA	<i>Mutuelle Interprofessionnelle du Mali</i> (Interprofessional Mutual of Mali)
MEF	<i>Ministère de l'Economie et des Finances</i> (Ministry of Economy and Finance)

MA	Ministry of Agriculture
MSAH	<i>Ministère de la Solidarité et de l'Action Humanitaire</i> (Ministry of Solidarity and Humanitarian Action)
M&E	Monitoring and evaluation
NDC	Nationally Determined Contributions
NGO	nongovernmental organization
NPV	Net present value
OECD	Organization for Economic Co-operation and Development
PAAR	<i>Projet d'Amélioration de l'Accessibilité Rurale</i> (Rural Mobility and Connectivity Project)
PACAM	<i>Projet d'Appui à la Compétitivité Agro-industrielle au Mali</i> (Mali Agro-Industrial Competitiveness Support Project)
PADEL-M	<i>Projet d'Appui au Développement de l'Élevage au Mali</i> (Mali Livestock Sector Development Support Project)
PAPAM	<i>Projet d'Accroissement de la Productivité Agricole au Mali</i> (Fostering Agricultural Productivity in Mali Project)
PCA	<i>Plan Communal d'Adaptation au Changement Climatique</i> (Communal Climate Change Adaptation Plan)
PCU	Project Coordination Unit
PCTs	Productive Cash Transfers
PDA	<i>Politique de Développement Agricole</i> (Agriculture Development Policy)
PDAZAM	<i>Projet de Développement de la Productivité et Diversification Agricole des Zones Arides du Mali</i> (Mali Drylands Agricultural Development Project)
PDO	Project Development Objective
PDSEC	<i>Plan de Développement Social et Economique et Culturel</i> (Economic, Social and Cultural Development Program)
PIM	Project Implementation Manual
PIPs	Productive Investment Projects
PNCC	<i>Politique Nationale de Changement Climatique</i> (Climate Change National Policy)
PNISA	<i>Plan National d'Investissement du Secteur Agricole</i> (National Agriculture Sector Investment Plan)
PO	Producer organization
PPSD	Project Procurement Strategy for Development
PRAPS	<i>Projet Régional d'Appui au Pastoralisme</i> (Regional Sahel Pastoralism Support Project)
PRAPS-ML	<i>Projet Régional d'Appui au Pastoralisme–Mali</i> (Regional Sahel Pastoralism Support Project–Mali)
PROCEJ	<i>Projet de Développement des Compétences et Emploi des Jeunes</i> (Youth Skills and Employment Development)
PSDR	<i>Plan Stratégique de Développement Régional</i> (Strategic Regional Development Plan)
P2RS	<i>Programme de Renforcement de la Résilience au Sahel</i> (Regional Program on Strengthening Resilience to Food and Nutritional Insecurity in the Sahel)
RAMED	<i>Régime d'Assistance Médicale</i> (Medical Assistance Plan)
RAP	Resettlement Action Plan
RCC	Regional Coordination Committee
REOIs	Requests for Expressions of Interest
RPF	Resettlement Policy Framework
RSU	<i>Registre Social Unifié</i> (Unified Social Register)
SC	Steering Committee
SCD	Systematic Country Diagnostic
SIIP	<i>Projet d'Appui Régional à l'Initiative de l'Irrigation au Sahel</i> (Sahel Irrigation Initiative Support Project)
SORT	Systematic Operations Risk-rating Tool
SPN	Specific Procurement Notice
TA	technical assistance
tCO ₂ -eq	Tons of carbon dioxide equivalent
THIMOs	<i>Travaux à Haute Intensité de Main d'Œuvre</i> (Labor-Intensive Work Programs)
UTGFS	<i>Unité Technique de Gestion des Filets Sociaux</i> (Technical Unit of Management of Social Safety Nets)
WAAPP	West Africa Agricultural Productivity Project
WAEMU	West African Economic and Monetary Union
WOPS	Situation without project
WPS	Situation with project



BASIC INFORMATION

Country(ies)	Project Name	
Mali	Mali Drylands Development Project	
Project ID	Financing Instrument	Environmental Assessment Category
P164052	Investment Project Financing	B-Partial Assessment

Financing & Implementation Modalities

<input type="checkbox"/> Multiphase Programmatic Approach (MPA)	<input checked="" type="checkbox"/> Contingent Emergency Response Component (CERC)
<input type="checkbox"/> Series of Projects (SOP)	<input checked="" type="checkbox"/> Fragile State(s)
<input type="checkbox"/> Disbursement-linked Indicators (DLIs)	<input type="checkbox"/> Small State(s)
<input type="checkbox"/> Financial Intermediaries (FI)	<input type="checkbox"/> Fragile within a non-fragile Country
<input type="checkbox"/> Project-Based Guarantee	<input type="checkbox"/> Conflict
<input type="checkbox"/> Deferred Drawdown	<input type="checkbox"/> Responding to Natural or Man-made Disaster
<input type="checkbox"/> Alternate Procurement Arrangements (APA)	

Expected Approval Date	Expected Closing Date
20-Jun-2018	30-Sep-2023

Bank/IFC Collaboration
No

Proposed Development Objective(s)

To improve agricultural productivity and strengthen resilience of rural households living in the targeted dryland areas

Components



Component Name	Cost (US\$, millions)
Improving the productivity and resilience of beneficiary populations	35.00
Productive Infrastructure at Community Level	17.00
Institutional Support, Crisis Management and Project Coordination	12.50

Organizations

Borrower: Ministry of Finance
 Implementing Agency: Ministry of Agriculture

PROJECT FINANCING DATA (US\$, Millions)**SUMMARY**

Total Project Cost	64.50
Total Financing	64.50
of which IBRD/IDA	60.00
Financing Gap	0.00

DETAILS**World Bank Group Financing**

International Development Association (IDA)	60.00
IDA Credit	30.00
IDA Grant	30.00

Non-World Bank Group Financing

Counterpart Funding	4.50
Borrower	2.00
LOCAL: BENEFICIARIES	2.50



IDA Resources (in US\$, Millions)

	Credit Amount	Grant Amount	Total Amount
National PBA	30.00	30.00	60.00
Total	30.00	30.00	60.00

Expected Disbursements (in US\$, Millions)

WB Fiscal Year	2018	2019	2020	2021	2022	2023
Annual	0.00	5.37	11.05	14.41	15.78	13.40
Cumulative	0.00	5.37	16.41	30.82	46.60	60.00

INSTITUTIONAL DATA

Practice Area (Lead)

Agriculture

Contributing Practice Areas

Social Protection & Labor

Climate Change and Disaster Screening

This operation has been screened for short and long-term climate change and disaster risks

Gender Tag

Does the project plan to undertake any of the following?

a. Analysis to identify Project-relevant gaps between males and females, especially in light of country gaps identified through SCD and CPF	Yes
b. Specific action(s) to address the gender gaps identified in (a) and/or to improve women or men's empowerment	Yes
c. Include Indicators in results framework to monitor outcomes from actions identified in (b)	Yes

SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)



Risk Category	Rating
1. Political and Governance	● High
2. Macroeconomic	● Substantial
3. Sector Strategies and Policies	● Moderate
4. Technical Design of Project or Program	● Substantial
5. Institutional Capacity for Implementation and Sustainability	● Substantial
6. Fiduciary	● Substantial
7. Environment and Social	● Substantial
8. Stakeholders	● Moderate
9. Other	● High
10. Overall	● Substantial

COMPLIANCE

Policy

Does the project depart from the CPF in content or in other significant respects?

Yes No

Does the project require any waivers of Bank policies?

Yes No

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment OP/BP 4.01	✓	
Performance Standards for Private Sector Activities OP/BP 4.03		✓
Natural Habitats OP/BP 4.04		✓
Forests OP/BP 4.36	✓	
Pest Management OP 4.09	✓	
Physical Cultural Resources OP/BP 4.11	✓	



Indigenous Peoples OP/BP 4.10	✓
Involuntary Resettlement OP/BP 4.12	✓
Safety of Dams OP/BP 4.37	✓
Projects on International Waterways OP/BP 7.50	✓
Projects in Disputed Areas OP/BP 7.60	✓
Legal Covenants	
Sections and Description The Recipient shall establish and maintain until the completion of the Project, a Steering Committee with terms of reference and composition satisfactory to the Association. Schedule 2, Section 1A	
Sections and Description The Recipient shall cause the ATI to maintain a PCU until the completion of the Project, with terms of reference and staffing satisfactory to the Association. Schedule 2, Section 1A	
Sections and Description The Recipient, through the MEF, shall maintain UTGFS until the completion of the Project, with terms of reference and staffing satisfactory to the Association. Schedule 2, Section 1A	
Sections and Description The Recipient shall establish and maintain until the completion of the Project for regions of Kayes, Koulikoro, Segou, and Mopti: (a) Regional Coordination Committees, with terms of reference and composition satisfactory to the Association; and (b) regional project implementation offices, with terms of reference and staffing satisfactory to the Association. Schedule 2, Section 1A	
Sections and Description The Recipient shall, no later than three (3) months after the Effective Date: (a) hire a financial management officer and an accountant with qualifications and experience satisfactory to the Association; (b) adopt accounting software satisfactory to the Association; and (c) hire a procurement specialist with qualifications and experience satisfactory to the Association, and provide the specialist, the technical experts, the tender committee members with training, in substance and amount satisfactory to the Association in the Associations' Procurement Regulations; (d) adopt the Project Implementation Manual (the "PIM") in form and substance satisfactory to the Association; and (e) cause the MA and MEF to enter into an MOU on the Project implementation arrangement as set forth in the PIM, for the implementation of Parts A.1 and A2 of the Project. Schedule 2, Section 1A	



Sections and Description

The Recipient shall, no later than six (6) months after the Effective Date: (a) hire an external auditor with qualifications and experience satisfactory to the Association; (b) provide adequate space and equipment for the procurement archive and set up an adequate filing system for project records; (c) designate or recruit an officer responsible for data management; and (d) hire an environmental safeguard specialist and a social safeguard specialist (at the central level in the PIU) and an environmental specialist and a social development specialist (at the regional level) in each of the two regional offices, all with qualifications and experience satisfactory to the Association. Schedule 2, Section 1A

Sections and Description

The Recipient shall, no later than one (1) month after the Effective Date: (a) hire a Technical Director with qualifications and experience satisfactory to the Association. Schedule 2, Section 1A

Conditions

Type	Description
Disbursement	For Grants under Component 1.3 of the project, unless the payments are made in accordance with the procedures and eligibility criteria set forth in the Grant Manual section of the PIM
Disbursement	For Direct Cash Transfer Program under Component 1.2 of the Project, unless the payments are made in accordance with the procedures and eligibility criteria set forth in the PIM and the DCTP Contracts
Disbursement	For Productive Cash Transfer Program under Component 1.2 of the Project, unless the payments are made in accordance with the procedures and eligibility criteria set forth in the PIM and the PCTP Contracts
Disbursement	For Emergency Expenditures under Component 3.2 of the Project, unless the Recipient has determined that an Eligible Crisis or Emergency has occurred, has furnished to the Association a request to include said activities in the CERC Part in order to respond to said Eligible Crisis or Emergency, and the Association has agreed with such determination, accepted said request and notified the Recipient thereof.
Disbursement	For Emergency Expenditures under Component 3.2 of the Project, unless the Recipient's



	Coordinating Authority has adequate staff and resources, in accordance with the provisions of Section I.E.1 of Schedule 2 to this Agreement, for the purposes of said activities.
Type Disbursement	<p>Description</p> <p>For Emergency Expenditures under Component 3.2 of the Project, unless the Recipient has prepared and disclosed all safeguards instruments required for said activities, and the Recipient has implemented any actions which are required to be taken under said instruments, all in accordance with the provisions of Section I.E.3(b) of Schedule 2 to the Financing Agreement, for the purposes of such activities.</p>
Type Disbursement	<p>Description</p> <p>For Emergency Expenditures under Component 3.2 of the Project, unless the Recipient has adopted a CERC Operations Manual in form, substance and manner acceptable to the Association and the provisions of the CERC Operations Manual remain, or have been updated in accordance with the provisions of Section I.E.1(c) of Schedule 2 to this Agreement so as to be appropriate for the inclusion and implementation of said activities under the CERC Part.</p>
Type Disbursement	<p>Description</p> <p>No withdrawal shall be made for payments made prior to the Signature Date, except that withdrawals up to an aggregate amount not to exceed \$460,000 may be made for payments made prior to this date but on or after May 02, 2018, for Eligible Expenditures under Category (5).</p>



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I. STRATEGIC CONTEXT

A. Country Context

- 1. Mali is a semiarid, landlocked, low-income country with a predominantly rural economy and rapidly growing population.** Climate change and increasing human pressure present challenges for agriculture in Mali's semiarid tropical environment. Rainfall is irregular, poorly distributed (500 millimeters per year in the Sahelian zone, less in the desert zone, and 800–1,000 millimeters in the Sudano-Sahelian zone), low and declining. The population (estimated at 17.6 million in 2015) is young—the median age is 16—and growing at an average rate of around 3 percent. Life expectancy is low (58 years), malnutrition is high (28 percent of children under five are stunted), and most of the adult population is illiterate (69 percent). The economy is predominantly rural and informal: rural areas account for 63 percent of the population, and the informal sector provides 80 percent of the jobs¹.
- 2. Economic growth in Mali has remained strong despite its vulnerability to exogenous shocks.** Growth is projected to remain robust despite persisting insecurity spreading to the center and southern region, real GDP growth is estimated to have reached 5.3 percent in 2017 compared to 5.8 percent in 2016 and about 5 percent over the medium term, in line with past performance and Mali's long-run potential. With a gross domestic product (GDP) per capita of around US\$750, Mali remains poor. The economic structure has not changed much since the 1990s, with the primary (agriculture, gold) and tertiary (trade, transport, and public administration) sectors each contributing between 35 and 42 percent to GDP, and the small industrial sector making up the balance.
- 3. Poverty remains high in Mali, and is even higher in rural areas.** Largely by improving agricultural production and value chains, Mali managed to reduce poverty significantly before the 2012 political and security crisis. In 2000, 60 percent of the population lived below the US\$1.90 per day poverty line. By 2010, 51 percent were poor, of which the vast majority—90 percent—lived in rural areas. Poverty is also more concentrated in the South, where population density is highest². After 2010, poverty deepened as drought (2012) and conflict (2012–13) took their toll. Mali ranked 175th out of 188 countries on the 2015 UN Human Development Index (HDI). Non-income indicators of poverty and welfare, particularly for education and health, are among the lowest in the world.
- 4. Food insecurity is a recurring challenge that is exacerbated by climate change.** The most recent agricultural season, in 2017–2018, is considered average, but pockets of low production were observed because of a shorter-than-usual rainy season, poor recharge of surface water bodies and relatively high attacks from pests. This situation has led to an estimated 3.5 million people or roughly 18 percent of the population at risk of food insecurity.

¹ World Bank 2015a; UNESCO 2010; World Bank *World Development Indicators* database; and <http://www.worldometers.info/world-population/mali-population>.

² Based on traditional (consumption) poverty measure; see "Mali Systematic Country Diagnostic" (World Bank 2015b).



B. Sectoral and Institutional Context

5. **Agriculture (including crops, livestock, fisheries and forestry) contributes about 41 percent of national GDP and is the largest sector in the economy.** The agriculture sector grew at an average of 11 percent per year during 2010–16, 7.6 percent in 2016, and growth is expected to decelerate at 4.8 percent in 2017. The sector is relatively well supported by the government and donors. The main public domestic intervention instruments in the sector are input subsidies and commodity price controls for cotton. Fertilizer subsidies amounted to approximately US\$110 million in 2016, and represented on average 27 percent of total agricultural public expenditures during 2010–16. Average agricultural public expenditures are about 12 percent, but quality of expenditures remains a concern. Mali is net exporter of agri-food products. Cotton products and live animals are the main agricultural products exported, representing 33 percent and 28 percent of total exports (excluding gold), respectively, in 2016. Cereals and processed food accounted, respectively, for 26 percent and 13 percent of the total value of imported food. Yields for staple crops remain generally low, food security is a major concern, and the country faces high incidences of malnourishment.

6. **Agriculture has a largely unexploited potential due to economic, technological, institutional, and policy constraints.** Over the last 35 years, progress has been made in Mali in terms of food availability, competition in the cereal market, competitiveness of horticulture value chains, livestock productivity, and cotton subsector competitiveness. Opportunities for agricultural transformation in Mali exist, with the Niger region providing a rich base for agricultural development. The full exploitation of these opportunities and achieving a more inclusive agricultural growth process requires a territorial development strategy to reduce disparities between high and lower potential agroecological zones, and to increase agricultural productivity and resilience in the less endowed drylands areas, the main geographic area targeted by this Project.

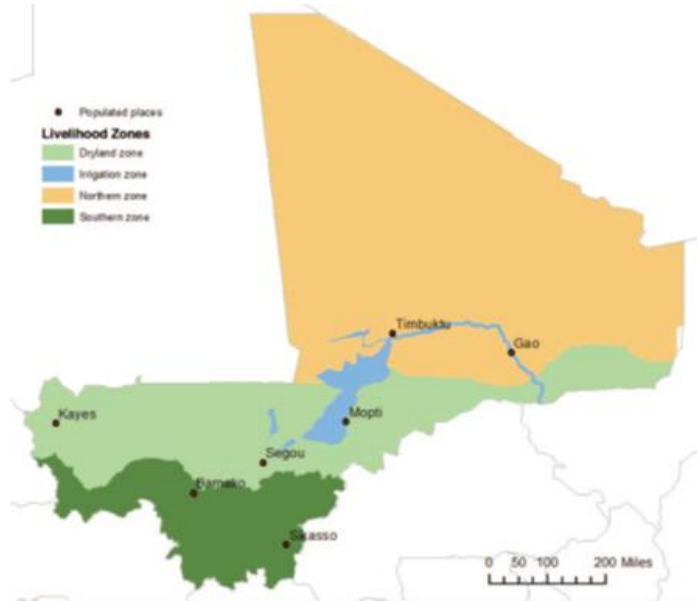
7. **Climate change and increasing human pressure present challenges for agriculture in Mali's drylands environment.** Mali suffers from frequent natural disasters, most frequently from floods, often followed by pests, but also from droughts that affect most of the population. The impacts of these disasters are compounded by economic and political shocks that prevent people from producing or purchasing enough food and that often result in large-scale involuntary displacements. Economic growth experienced significant swings during the low rainfalls recorded in 2011 and 2013, followed by exceptionally heavy rains in 2012 and a return to average rainfall in 2014. Such patterns are highly disruptive of rural life, which is vulnerable to even relatively small adverse weather events that have important impacts on food security and that increase the number of food-insecure households.

8. **Climate, soil, and water availability are the main factors determining four main agro-climatic zones³ in Mali.** The Saharan area covers 51 percent of the territory and has a desert ecosystem. The Sahelian zone (26 percent of the country) including the Niger interior delta has an arid and semiarid ecosystem. The Sudanian zone (17 percent of the country) in the Center has a savanna ecosystem. The Sudano-Guinean, or sub-humid, zone in the South has a forest ecosystem. Drylands for this Project will refer to the Sahelian and Sudanian zones. This area, covering roughly the northern part of the administrative regions of Kayes, Koulikoro, and Segou, and the whole of the Mopti region, experience

³ Ministry of Agriculture-Swiss Cooperation 2016.



strong inter-annual and interdecadal climate variability (see map 1). The area also has a high exposure to dry spells and droughts, and over the last 50 years there has been significant land degradation, which exacerbates impacts of extreme climate events. High levels of poverty, poor governance structures, a lack of social safety nets, climate-dependent livelihoods, gender inequalities, and low asset bases accentuate vulnerability to the crises impacting the area. Changes in land use caused by increasing population pressures, degradation of forests and rangelands, and policy directives on resource management have exacerbated vulnerability to drought. Herder-farmer conflict is also increasing as pastoralists and farmers compete for land and water.



Map 1- Livelihood areas

9. **Compared to agriculture practiced in the southern region, drylands agriculture is performing below potential in part due to poor reach of agriculture support programs and gender disparities.** The two main challenges of drylands agriculture are therefore to (a) overcome the inherently low productivity and profitability of its farming systems, including by closing gender gaps; and (b) reduce vulnerability of agriculture to climate change and land degradation. Yields for the major crops in the dryland zone, millet and sorghum, have remained nearly stagnant for three decades. As a result, food and nutrition insecurity is high in the North and Central parts of the country. Currently, malnourishment in Mali affects an estimated 3.1 million people and 709,000 children aged 6 to 69 months in the drylands.

10. **Gender Disparities.** The latest Living Standard Measurement Study-Integrated Surveys on Agriculture (LSMS-ISA) data demonstrate that gender gaps are affecting agricultural production, particularly in the drylands zone. Female-headed households are more challenged in accessing productive assets than male-headed households in the dryland zone than in other regions. Cultural differences may account for the regional variation. Women farmers lack technical skills, they face unique time constraints, or lack access to output markets that could make them more efficient. Targeting and engendering farmer support services appropriately to overcome the constraints faced by women farmers has emerged as a high priority to improve the performance of the agriculture sector.

11. **The Government of Mali (GoM) has established, with the Strategic Framework for Economic Recovery and Sustainable Development (*Cadre Stratégique pour la Relance Economique et le Développement Durable*, CREDD) (2016–2018), a unique reference framework to integrate its economic, social, and institutional policies.** The CREDD’s global objective is reaching the United Nations Sustainable Development Goals based on Mali’s potentialities and resilience capacity for an inclusive development aiming at reducing poverty and inequalities in a peaceful and unified Mali. CREDD objectives include (a) guaranteeing and improving food and nutritional security for all, but notably for the most vulnerable segments of the population; (b) expanding social protection and promoting a social and solidarity



economy (*l'économie sociale et solidaire*); and (c) promoting solidarity and reinforcing humanitarian actions.

12. **National strategies and programs for sustainable development give due consideration to agriculture.** As a complement to the 2006 Agriculture Orientation Law (*Loi d'Orientation Agricole, LOA*), the most recent and relevant policy documents and investment frameworks include the Agricultural Development Policy (*Politique de Développement Agricole, PDA*), the National Agriculture Sector Investment Plan (*Plan National d'Investissement du Secteur Agricole, PNISA*),⁴ the Agricultural Land Tenure Policy (*Politique Foncière Agricole, PFA*), and the Agricultural Land Tenure Law (*Loi Foncière Agricole, LFA*) adopted on March 30, 2017. For **food and nutritional security**, Mali has the National Food and Nutritional Program (*Programme National de Sécurité Alimentaire et Nutritionnelle, PNSAN-II, 2012–2017*), the Country Resilience Priorities (*Priorités Résilience Pays, PRP*), and the National Food and Nutrition Security Policy (*Politique Nationale de Sécurité Alimentaire et Nutritionnelle, PoLSAN*). In the **livestock sector**, Mali has a National Livestock Development Policy (*Politique Nationale de Développement de l'Élevage, PNDE*). For **irrigation**, Mali has a National Irrigation Development Strategy (*Stratégie Nationale de Développement de l'Irrigation, SNDI*), a National Proximity Irrigation Program (*Programme Nationale d'Irrigation de Proximité, PNIP*).

13. **Considering the political and security crisis, the GoM has a specific focus on institutional development in the drylands region, and the decentralization framework has been revamped.** Mali is composed of four levels of government: the national administration, eight regions, 49 districts (*cercles*) and 703 communes. The latter three are local government authorities. Sharing roles and responsibilities between the state and local authorities and finding the balance between central supervision and local self-governance is essential for successful management and implementation of decentralization. The subnational governments have financial autonomy and legal personality. Although each local authority has autonomy over its management, de facto power is exercised under the control of the state and administrative law. Regions have planning tools such as the Regional Land Planning Scheme (*Schéma Régional d'Aménagement du Territoire*) and the Strategic Regional Development Plan (*Plan Stratégique de Développement Régional, PSDR*). Districts and communes prepare an Economic, Social and Cultural Development Program (*Programme de Développement Social, Economique et Culturel, PDSEC*) reflecting their development objectives and their own medium-term investment needs, including those for agriculture⁵, in accordance with challenges and opportunities faced.

14. **Mali has expressed a commitment to climate-smart agriculture by adopting policies promoting agricultural practices, approaches, and systems that sustainably and reliably increase food production and the ability of farmers to earn a living while protecting or restoring the environment.** Mali has submitted its Nationally Determined Contributions (NDC) Report related to its formal COP21 engagements. Specific avenues for reducing agriculture sector emissions identified in the NDC include (a) reducing emissions from rice cultivation; (b) promoting sustainable land management on 92,000 hectares (ha); and (c) increasing rural, renewable electrification including solar irrigation. Proposed adaptation

⁴ PNISA, adopted in 2015, covers the years 2015–25. It is structured in five main programs developed through 24 subprograms and 83 activities. Its total cost has been evaluated at CFAF 6,951 billion (approximately US\$13 billion). The GoM has faced difficulties mobilizing resources for the plan. As a result, it has adopted a phased approach to implement the program separately over 2017–21 and 2021–25, and a regional approach based on the elaboration of regional investment plans.

⁵ PSDR and PDSEC in the four regions of Kayes, Koulikoro, Segou, and Mopti have prioritized gaps in irrigation and marketing/processing infrastructure, rural roads, land tenure, natural resource degradation, and weak rural producers' organizations as the main challenges for the local rural economy.



activities include (a) building resilience in the agriculture sector; (b) climate-smart water management; (c) adoption of improved crop cultivars and livestock breeds; (d) grain banks and storage; (e) small-scale agricultural development; and (f) perennial agriculture, particularly fruit trees. Agriculture is a priority sector under the 2011 National Policy on Climate Change (*Politique Nationale de Changement Climatique, PNCC*). It consists of a national climate change strategy and an action plan covering ten different sectors. Mali is preparing regional plans derived from the PNISA that would give a more detailed content on agricultural practices, approaches, and systems. The World Bank through the NDC Partnership and this project is helping Mali devise Climate Smart Agricultural Investment Plans as well as preparing communal plans for adaptation (30 communes in Kayes and Sikasso), that could be expanded to 100 other communes in Koulikoro, Segou, and Mopti.

15. **The social protection system is an important instrument to fight high poverty levels, and to improve household and community resilience.** Since 2012, the GoM, with the support of the World Bank, has established the Emergency Safety Nets Project (Jigisemejiri, P127328) as a cornerstone for developing its social protection system. Today, the National Social Protection Framework supports the broader Malian Poverty Reduction policy and, through the Jigisemejiri Project⁶, covers more than 70,000 households in Kayes, Sikasso, Koulikoro, Segou, Mopti, Gao and Bamako. It further supports the articulation of national policies on social protection, health insurance, nutrition, and food security. The social protection system under development is showing positive results on protecting the poor and building resilience⁷. Building on this evidence, the Ministry of Solidarity and Humanitarian Action (*Ministère de la Solidarité et de l'Action Humanitaire, MSAH*) is now updating its National Social Protection Policy (*Politique Nationale de Protection Sociale, PNPS*). Its aim is to improve the impacts of interventions, reduce social risks for the entire population, and strengthen household resilience while developing a better response system to shocks. The PNPS is leveraging synergies with other sectors to increase household resilience and livelihood opportunities.

16. **Combining interventions to improve agricultural productivity and resilience is an appropriate response to reduce households' vulnerability to shocks in the Sahel region.** It is no longer the case that the Sahel region is dealing with limited and circumscribed crises, but with a structural crisis, which requires giving vulnerable populations in rural areas the means to increase their resilience to recurrent climate and economic shocks and, eventually, to reduce emergency aid costs and break the cycle of food insecurity. At the same time, investing in drylands agriculture is essential to harness opportunities offered by the process of agricultural transformation in terms of jobs and access to markets for women, men, and youth in the region.

17. **Mobilizing the long-term growth potential of agriculture in the drylands will require increasing synergies among Mali's current policies and programs.** Key prerequisites for structural transformation include (a) improvements in human capital (health, education, nutrition) and intersectoral approaches to build more resilient households and communities; and (b) improvements in the trade and investment

⁶ The Jigisemejiri Project is providing (a) quarterly cash transfers to households; (b) information sessions at the community level with accompanying measures that promote good practices on nutrition, health, education, and family planning to promote behavioral changes; (c) piloting nutritional supplements to children and pregnant women in selected areas; and (d) income generating activities to improve household productivity.

⁷ A midterm evaluation conducted by IFPRI for the project indicates that (a) the three largest categories of expenses of cash transfer beneficiaries were food consumption, health, and agricultural investments; (b) the intervention reduces household food insecurity by 1.88 points, or 27 percent, as measured by the Household Food Insecurity Access Scale, while simultaneously, the Dietary Diversity Index and Food Consumption Score are improved; and (c) the intervention significantly increases household savings and investment, mainly in sedentary livestock.



climate along with efficient enabling services, notably lower transport costs and trade logistics. The agriculture sector requires transformation to reduce the gap between current and potential productivity, and to reduce food insecurity faced by the population on a recurrent basis. Prospects for agricultural growth should be exploited in traditional value chains, but also by expanding to more diversified, higher-value products. In summary, there is significant unexploited potential in the drylands to boost rural incomes in the short term and provide families the choice to continue farming in the region.

C. Higher-Level Objectives to which the Project Contributes

18. **The Project will contribute to the main objectives of the FY2016–19 Country Partnership Framework (CPF) to improve agricultural productivity and resilience of households, in close coordination with ongoing World Bank programs and the activities of other development partners.** The Project addresses some of the binding constraints identified in the 2015 Systematic Country Diagnostics (SCD), which include (1) low productive capacity of poor farmers and pastoralists; and (2) exposure to uninsured risks, some of them systematic. The Project will support the CPF objectives under Area of Focus 2 *Create economic opportunities* and Area of Focus 3 *Building resilience*. Project interventions and activities will support improving productive capacity and market integration for farmers and pastoralists, agriculture value chain diversification, improving infrastructure, developing human capital, and strengthening safety nets and risk management for the poor and vulnerable.

19. **The Project will contribute to implementing the Strengthening the Natural Capital Resilience Pillar of the 2015 World Bank Group Africa Climate Business Plan (ACBP) by promoting climate-smart agriculture (CSA) and establishing landscapes resilient to climate change.** Specifically, it will support activities related to the adoption of evidence-based policies and institutional strengthening for CSA, and provide financial and technical support to Mali to scale-up the adoption of CSA technologies adapted for drylands (such as contour bunds, production and use of compost, improved varieties, and sorghum-cowpea intercropping). It will also support the ACBP African Resilient Landscape Initiative by implementing restoration interventions (for example, Assisted Natural Regeneration) aimed at enhancing dryland ecosystem resilience and promoting sustainable livelihoods.

20. **The Project will contribute to the GoM's agricultural development and social protection strategic objectives.** It will support: (a) the PDA and PNISA objectives of nutritional and food security, institutional development and capacity building, natural resource management and environmental protection, agricultural sector investments, competitiveness of agricultural products and agri-business, and resource mobilization; and (b) the extension of the National Social Protection Policy (NSPP), which promotes the creation of a social safety net.

21. **The Project complements several ongoing World Bank operations, with which synergies will be built to foster rural development under a spatial approach.** These operations include: (a) the Mali Livestock Sector Development Support Project (PADEL-M, P160641, US\$30.00 million); (b) the Regional Sahel Pastoralism Support Project (PRAPS, P147674, US\$45.00 million); (c) the Sahel Irrigation Initiative Support Project (SIIP, P154482, US\$25.00 million), and (d) the Rural Connectivity and Mobility Project (PAAR, P160505, US\$70.00 million). The Project will also complement the Regional Program on Strengthening Resilience to Food and Nutritional Insecurity in the Sahel (P2RS) funded by the African Development Bank (AfDB), emphasizing lessons learned and opportunities for synergy and coordination in the Regions of Kayes, Koulikorio, and Segou. The Project is included in the Sahel Alliance pipeline of operations.



II. PROJECT DEVELOPMENT OBJECTIVES

A. Project Development Objective (PDO)

22. The project development objective (PDO) is to improve agricultural productivity and strengthen resilience of rural households living in the targeted dryland areas.

23. While resilience has various meanings in the literature, for the purposes of the proposed operation it should be understood as the capacity of the target population to withstand and recover from shocks. Given that the poor and vulnerable are often subject to chronic poverty and that most households in the drylands rely on relatively high-risk, weather-dependent livelihood activities, enhancing resilience means: (a) improving food security; (b) more effective use of land and natural resources, including better livestock and farm management practices that help landscape preservation and restoration; (c) improved access to basic safety nets and alternative livelihood options; and (d) contingency finance mechanisms to improve capacity to cope with shocks.

B. Project Beneficiaries

24. Direct Project beneficiaries include:

(a) At the household level: (i) farmers and farmer groups that can make an impact in terms of increasing regional food production; and (ii) poor and vulnerable households that are typically excluded from opportunities to improve productivity and resilience; neither benefit from local-level interventions to boost agriculture production, but will benefit from this Project's Direct Cash Transfers (DCTs), Productive Cash Transfers (PCTs) for inputs/equipment, and Productive Investment Projects (PIPs); and

(b) Broader communities and villages where rural infrastructure investments will complement the productive investments supported by the Project at the group level.

25. Other Project beneficiaries include institutions that will benefit from institutional strengthening activities required for supporting long-term initiatives to improve productivity of the agriculture sector and resilience of households.

26. **The project is deemed to be gender tagged in terms of analysis, action and monitoring and evaluation.**

27. **Analysis.** As reflected in the sectoral context, women occupy a variety of roles in Mali's agricultural production and marketing system, but with overall very low productivity and limited autonomy. In most value chains, women predominate, as producers and agro-processors delivering small quantities to local markets, and as retail sellers in major markets. The primary factors that contribute to low female productivity are (a) farm labor, with women facing significant challenges in accessing, using, and supervising male farm labor; (b) low access to appropriate production and processing technologies; (c) low technical and business development skills; and (d) landownership characteristics, with men owning more land and enjoying higher returns to ownership than women (World Bank, 2017). Gender issues will need to be tackled by this Project in different forms.



28. **Action** – The Project is expected to reduce gender disparities through specific activities based on women’s needs. Under Subcomponent 1.1, the Project will ensure that vulnerable women-headed households have equal access to the RSU registration. Under Subcomponent 1.2, qualifying women will receive a cash transfer as well as a productive cash transfer to develop small-scale agriculture on their plots. Special information sessions will be held at the village level to get women to join in these activities and support will positively discriminate towards women in the selection process. Details will be defined in the Project Implementation Manual (PIM) to be prepared no later than 3 months after the Effective Date. Under Subcomponent 1.3, support will be provided to women producers’ associations or groups. Local extension and advisory services will be trained and supported by NGOs that have experience providing advice tailored to women’s specific needs. Productive and marketing infrastructure under subcomponents 2.2 and 2.3 will mostly benefit women by means of positive discrimination. Under subcomponent 3.3, the project staff will include a senior and junior gender and social inclusion specialist.

29. **Monitoring & evaluation of gender activities.** The Results Framework includes mechanisms to monitor gender impact and facilitate gender disaggregated analysis. The Project will consider⁸ the possibility to include a gender impact evaluation with the World Bank’s Africa Region Gender Innovation Lab (GIL). The objective of the impact evaluation could be to generate evidence on how unconditional cash transfers bundled with productive transfers can reduce gender gaps in agricultural productivity.

C. PDO-Level Results Indicators

30. Progress toward the achievement of the PDO will be measured by the following results indicators:

- (a) Yield increase of major crops in the project areas (sorghum, maize, and millet);
- (b) Proportion of cash transfer beneficiary households with a food consumption score above 35;
- (c) Beneficiary satisfaction rate with services provided by the Project;
- (d) Direct beneficiary households of the Project (female head of households).

III. PROJECT DESCRIPTION

31. **Theory of Change.** The vision of the Mali Drylands Agricultural Development Project (*Projet de Développement des Zones Arides du Mali, PDAZAM*) is one where the rural households (including women, youth, and disadvantaged groups) residing in dryland areas of Mali improve their livelihood and food security and transition from subsistence farming and dependency on emergency aid to sustainable and resilient livelihoods.

32. The link in the Project’s theory of change between activities (improved production incentives, access to infrastructure, and strengthened institutions) and the achievement of the long-term goal of large-scale and sustained improvements in agricultural productivity, food and water security, livelihoods, resilience, and the empowerment of women, youth, and disadvantaged farmers in drylands, relies on several critical assumptions as follows:

⁸ This will be conducted during preparation of the 1st Annual Workplan and Budget for the Project.



- (a) Consumption and production decisions of rural households living in arid environments are closely linked. A combination of social protection and agricultural policy interventions is essential because they contribute to each other's objective of increasing resilience and enhancing agricultural production;
- (b) Improved land management and crop management practices that have been tested and could be made easily accessible during project implementation offer good prospects for increasing agricultural productivity in Mali's semiarid areas;
- (c) Short- and medium-term measures to improve agricultural productivity and resilience have to be complemented with long-term measures to facilitate the transformation of drylands, particularly those encouraging investments in human (education, health, fertility) and physical (transport, ICT, housing) capital in the project intervention areas. For example, productivity enhancement will not occur if rural roads are not adequately built and maintained. This underscores the need for appropriate coordination of all development interventions in the districts targeted by the Project.

33. **The Project intends to intervene with three distinct but mutually supporting investments.** The first type of investment is through the provision of direct support to two groups of beneficiaries. One group, composed of highly vulnerable, poor, and food-insecure households, will get help with a combination of Direct Cash Transfers (DCTs) and Productive Cash Transfers (PCTs) to buy inputs and build productive assets. A second group, composed of moderately vulnerable, poor smallholders occasionally connected to markets, will get help with Productive Investment Projects (PIPs) aimed at improving their productive capacity. The second type of investment is through the provision of financing for productive and marketing infrastructure. Financing will be provided to cover rural infrastructure (for natural resource management, soil and water management, market access) identified in regional and local development plans. The third type of investment is by influencing wider public policy and investment decisions in drylands. Building on scientific and local knowledge, efforts will be made to support policy makers and farmers to pursue context-appropriate incentives, investment and institutional options pertaining to natural resource management, agricultural production, and commercialization.

34. **The Project design builds on the increasing understanding that agriculture and social protection programs can jointly play an important role in tackling poverty and hunger in fragile environments.** Several African policy initiatives and declarations explicitly call for stronger coordination between such programs, such as the Comprehensive Africa Agriculture Development Program (CAADP) and the 2014 Malabo Declaration on Accelerated Growth and Transformation for Shared Prosperity and Improved Livelihoods. However, the full range of benefits to be derived from interventions that bring together agriculture and social protection programs is not widely understood, nor are the means through which coherence can be promoted. This Project will provide an opportunity in Mali's drylands to pursue coherence between those programs, including in their design, implementation and operational features to improve the welfare of rural households whose livelihoods depend on small-scale agriculture. Table 1 summarizes the complementarities sought through specific Project interventions.



Table 1: Complementary roles between agriculture and social protection activities under the Project

OUTCOMES	ROLE OF AGRICULTURAL INTERVENTIONS (PIPs; capacity building for farmers and producer organizations; investments in irrigation, natural resource management, and marketing; enhancing capacity to undertake agricultural policy research, analysis, and communication)	ROLE OF SOCIAL PROTECTION INTERVENTION (DCTs alone or combined with financing of productive assets; labor-intensive public work; capacity building for households)
<i>Household-level outcomes contributing to livelihood improvements in drylands</i>		
Support productive investments	Activities provide access to new technologies and extension services, enabling households to intensify their production and productivity	Project support will alleviate liquidity and credit constraints, enabling poor households to invest in agricultural activities
Strengthen risk management and resilience	Interventions protect small-scale farmers from shocks and assist in building long-term resilience (conservation agricultural practices); macro-level agricultural policy interventions based on evidence can reduce exposure to shocks	Predictable and regular social transfers help households manage income and consumption shocks and protect household assets, while greater certainty encourages engagement in riskier, but more profitable, livelihood strategies both within and out of agriculture
Intensify and increase efficiency of on-farm labor	Improved labor technologies can increase labor productivity	Income guarantees can enable the poorest households to shift from casual labor to working on their own farms; combined with capacity building, they also contribute to agricultural production in the long term through human capital development
Increase household food consumption	Interventions considered to improve household food production and increase availability	Cash transfers can directly and indirectly increase access to more diversified and improved quality food
Improve natural resource condition	Incentives will encourage farmers to adopt sustainable farming and livestock practices to promote soil fertility and water conservation	Seasonal public works programs can target the poorest and most vulnerable identified through the Social Registry to reduce the risks of overexploiting natural resources (e.g., deforestation)
<i>Community/local economy-level outcomes contributing to livelihood improvements in drylands</i>		
Stimulate local economy	Irrigation, natural resource management, and marketing interventions boost local capacities to generate a supply response	Social transfers can stimulate demand for locally produced food and other goods and services
Promote decent employment	Agricultural interventions can have positive effects on agricultural wages, benefiting landless farm workers	Measures may broaden employment opportunities and improve terms and conditions of employment at the district or community level
Support social network development	Agricultural policy based on evidence can promote development of inclusive rural institutions in drylands (e.g., farmer field schools, producer organizations, and associations)	Interventions can increase participation of the poorest and most vulnerable households in social networks, which are important sources of information and communication
Stimulate economic diversification	Agricultural growth, by reducing cost of staples, allows farmers to invest in other goods; combined with microenterprise development schemes (supported by PIPs) can facilitate transition to a more diversified local economy in the long term and diversifying away from cereals in the medium term.	DCTs combined with household capacity building can facilitate transition to a more diversified local economy

35. **Project areas.** The Project area covers selected communes of the 12 selected districts (“cercles”) from Kayes, Koulikoro, Segou, and Mopti, which would all be gradually included by 2023 taking into account the security situation. These communes of the drylands region were identified as areas with



significant untapped agricultural potential that simultaneously have been lacking investments and suffer from high vulnerability at the village level. The selection of the districts, the next lower administrative level, has been informed by the Country Resilience Priorities 2018–2035 exercise conducted by the GoM within the Global Alliance for Resilience in the Sahel and West Africa (*Alliance Globale pour la Résilience au Sahel et en Afrique de l'Ouest*, AGIR) Framework that has developed a vulnerability map composed of several vulnerability criteria (such as food security) of the country down to the level of the commune. That vulnerability map has been combined with an agricultural potential map to identify the communes that simultaneously have large vulnerable populations and untapped agricultural potential. Both the process and selection of project areas were verified with the regions and local authorities (*collectivités territoriales*) to ensure the selection also overlaps with their identification of areas needing support.

36. The 12 districts that will be included under the Project are: Diema, Nioro, and Yelimane in Kayes region; Kati, Kolokani, and Nara in Koulikoro Region; Bandiagara, Douetza, Tenenkou, and Youwarou in Mopti Region; and Niono and Segou in the Segou Region.

A. Project Components

37. The Project consists of the following three components: (1) Improving the productivity and resilience of beneficiary populations, (2) Productive infrastructure at the community level, and (3) Institutional support, crisis management and project coordination. For this section, agriculture will be used as a generic term, covering agricultural production (cereals, vegetables, and so forth), animal (cattle, sheep, goats, poultry, milk), and forest (non-wood products) income generating activities.

Component 1: Improving the productivity and resilience of beneficiary populations (US\$35.0 million, of which US\$32.5 million from IDA and US\$2.5 million from beneficiaries)

38. The objectives of this component are to (a) enhance household resilience by providing combined interventions to poor and vulnerable households to raise their consumption and to cope with seasonal shocks, and providing them with opportunities to achieve sustained improvement in their living conditions; and (b) increase agricultural productivity of farmers and groups of farmers. This component builds on the experience of the Jigisemejiri Project which, in addition to building the social registry and providing DCTs, is also promoting behavioral changes and disseminating agriculture sector experience in promoting new, more productive crops and production techniques. As such, the component will support the expansion of the Jigisemejiri Project while simultaneously adapting it to address the specific needs of rural households in the dryland areas. Activities under this component are designed to engage women, including through dedicated information campaigns and focused learning programs.

39. **Subcomponent 1.1 Expansion of the Social Registry (US\$2.5 million, 100 percent IDA).** This subcomponent will support the development of the social protection system and its social registry and the development of the Unified Social Register (*Registre Social Unifié*, RSU), and related information systems that are used to monitor and evaluate the implementation of Subcomponent 1.2. This subcomponent will finance the expansion of the coverage of the Jigisemejiri Project in the project areas and enlarge its scope to add poor and vulnerable households living on subsistence agriculture. It will also finance the setting up of an Information, Education, and Communication Campaign for the RSU, monitoring and evaluation procedures, training programs at the central and regional level, and studies, as needed. The RSU already holds information about 74,845 households across the country, reaching more than 400,000 individuals. This subcomponent will expand the reach of the RSU to add approximately



20,000 households⁹ in the project area. Enrollment in the RSU will be a prerequisite for participating in the activities described in Subcomponent 1.2. The Technical Unit for the Management of Social Safety Nets (*Unité Technique de Gestion des Filets Sociaux*, UTGFS) of the Ministry of Economy and Finance (MEF) will be responsible for overseeing implementation of all the activities proposed under this subcomponent.

40. **Subcomponent 1.2 Direct cash and productive transfers (US\$16.0 million, 100 percent IDA).** To better cope with, recover from, and adapt to the multiple shocks and recurrent crises affecting the drylands (drought, desertification, floods, conflicts, economic shocks, diseases, and so forth), the poorest households need to protect their livelihoods, diversify their sources of income and accumulate productive assets. This subcomponent will finance both (a) DCTs and (b) PCTs. The DCTs will provide timely, predictable, and regular cash transfers to 12,000 poor and vulnerable eligible households amounting to CFA 15,000 per household per month for 36 months. The PCTs would finance acquisition of inputs, livestock kits, or small equipment amounting to CFA 250,000 (US\$450) distributed in two or four installments to some 10,000 cash transfer beneficiaries interested in and capable of, running small productive activities. The participation of women in the subcomponent will be strongly encouraged. The subcomponent will target both women-headed households or women in male-headed households for running agricultural related income generating activities. At least 65 percent of activities eligible for financing under PCTs tend to be managed by women.

41. The UTGFS will be responsible for implementing this subcomponent. The subcomponent will follow the Jigisemejiri Project implementation¹⁰ arrangements and targeting approach in the communes within the 12 districts in the project area. The most vulnerable households will be targeted using the approach outlined in expanding the RSU. Women will be strongly encouraged to participate in the subcomponent. Productive cash transfer approval will be given based on simple activity plans, for which qualification criteria will be defined in the Project Implementation Manual (PIM). Prescreened individuals selected by local committees established through Jigisemejiri will be given training and support to help them develop their investment activity proposals and other technical skills, including communication and mentoring of other beneficiaries. Selected individuals can be organized in groups so that they can also pool resources and eventually benefit from Subcomponent 1.3.

42. **Subcomponent 1.3. Promotion of emerging high-value crops value chains (US\$16.5 million, of which US\$14.0 million from IDA and US\$2.5 million from beneficiaries).** The main objective of this subcomponent is to increase production for meeting national and regional market demand while generating higher incomes for value chains actors as well as creating employment opportunities. These high-value crops for the drylands have been identified in PNISA at the regional level¹¹. They have great potential to be promoted in the project areas to help diversify agriculture production and move to more

⁹ Participation of women is encouraged in the cash transfer activities in Subcomponent 1.2. In Subcomponent 1.1, the household where they live must be enrolled. A specific communication campaign targeting women will specify that certain activities are created for them (e.g. horticulture, poultry). To benefit from cash transfers, the household must be enrolled in the RSU.

¹⁰ FAO will be a partner in the implementation of this activity due to its engagement in the country with the CASH+ initiative, an 18-month program successfully implemented in the District of Niore in the Kayes region. It targeted 750 vulnerable households, comprising approximately 5,300 individuals with a combination of cash transfer and a livestock kit (animals and feed).

¹¹ These emerging value chains have been identified and prioritized during PNISA preparation. A dialogue was established to identify development priorities and constraints faced by actors. A cartography of main and emerging "*filieres*" (value chains) is an integral part of the PNISA Document (2014). These emerging value chains in the project intervention area of Kayes, Koulikoro, Segou, and Mopti include sweet potatoes, Arabic gum, mango, cassava, sesame, jatropha, jujube, fonio, Guinea sorrel (hibiscus or bissap), and cowpea (Niebé).



commercial agriculture. However, to develop them, more private investments is needed in the different points of the value chains.

43. The subcomponent will finance (a) technical assistance to update knowledge on promising high-value crop value chains with great potential in the project area, as well as constraints impeding the development of these selected value chains; (b) technical assistance for the preparation of business plans for investments in production, transformation, and marketing; and (c) grants to finance Productive Investment Projects (PIPs) based on the above developed business plans. Grants will cover PIPs along the value chains to alleviate the constraints impeding the effective emergence of these value chains. Such investments could include improvement in grading, storage, the cooling chain, and packaging, especially in the case of horticultural produce, seeds and seedlings, plantations, processing equipment, marketing, small rehabilitation of facilities to comply with minimal sanitary production requirements, technical assistance (extension services, technology transfer), business development (management, accounting) or digital solutions and applications for agriculture. The beneficiaries of those grants would be producer groups. The maximum grant amount would be CFAF 10 million (US\$20,000) with a minimum beneficiary contribution of 15 percent of the total subproject cost. The Project Coordination Unit (PCU) will be responsible for managing the grant mechanism and developing a grant and PIP reporting database for that purpose.

44. **Qualification in the grant program will be through an application involving the submission of a business plan.** A regional Approval Committee will be established across the region to review and approve PIPs in line with provisions defined in the Grant section of the PIM. These committees will be chaired by the Director of the Regional Agriculture Directorate and comprise representatives from professional agricultural associations, chambers of regional agriculture, and technical services of the Ministry of Agriculture (MA). The detailed selection mechanism, including criteria such as impact on the local economy, financial viability of the proposed investments, and likely sustainability of the proposed investments, will be described in the Grant section of the PIM. Financial literacy training will also be provided to beneficiaries of PIPs to improve income management and encourage savings to withstand crises. This subcomponent will be implemented directly by the PCU.

Component 2: Productive Infrastructure at the Community Level (US\$17.0 million, 100 percent IDA)

45. **This component will support investments in community infrastructure that will aim at improving the environmental, physical, and socioeconomic context for dryland agriculture,** and create synergies with activities to boost agricultural productivity and strengthen resilience under Component 1. To ensure that the landless and unemployed benefit from those activities, in cases where such a method is suitable, Labor-Intensive Work Programs (*Travaux à Haute Intensité de Main d'Œuvre, THIMO*) targeting vulnerable people will be used for the construction of community infrastructure.

46. **Subcomponent 2.1 Selection and preparation of investments (US\$1.50 million, 100 percent IDA).** This subcomponent will finance: (a) the dissemination of information and sensitization of beneficiary populations and key stakeholders involved in the implementation of the Project; (b) the identification, selection, and validation of subprojects that have been pre-prioritized in the PDSEC (at the district and communal level); (c) support for the formulation of regional and local climate change adaptation plans and funding for investments as may have been identified in the PDSEC; and (d) preparation of the “*Vallée*



du Serpent” development study¹². This subcomponent will be implemented by the PCU at the central level and executed locally through the deconcentrated Departments for Rural Infrastructure (*Directions Régionales du Génie Rural*) of the MA.

47. Subcomponent 2.2 Productive infrastructure investments (US\$11.00 million, 100 percent IDA).

This subcomponent will finance infrastructure and collective production facilities in synergy with the investments to boost productivity that are carried out under Component 1 and based on priorities identified under Subcomponent 2.1. These interventions will consist of the preparation and execution of investments of (a) small perimeter irrigation between 1 ha and 5 ha depending on the availability of water, (b) lowland development consisting of water retention for irrigation, (c) perimeter fencing of ponds and auxiliaries for watering livestock, (d) interventions in watersheds to rehabilitate degraded land, and (e) preservation of areas for natural regeneration of degraded lands. These interventions will be complemented by field schools and demonstrations to help communities take ownership of the new technologies (including digital technologies) and infrastructure introduced under this subcomponent. Labor-Intensive Work Programs (THIMO) targeting vulnerable people will be used where suitable to facilitate construction of such community infrastructure. This subcomponent will be implemented by the PCU.

48. Subcomponent 2.3 Commercialization investments (US\$4.5 million, 100 percent IDA).

This subcomponent will finance investments aimed at improving market access by project beneficiary households. Facilities will remain the property of the community, publicly owned but maintained or managed under arrangements with private operators to the extent possible. The subcomponent would finance studies for the preparation of works and the construction of (a) storage warehouses to better preserve agricultural production, (b) grain banks to reduce the vulnerability of communities to food insufficiency, (c) agricultural input shops to improve household access to certified seeds and agrochemicals, and (d) rural markets. Management arrangements will be made, depending on local conditions, either directly with beneficiaries for facilities that have more of a common-good characteristic like grain banks, local government where suitable for market places that exist but need rehabilitation, or through operator contracts for any new facility to ensure the proper operation and maintenance of those facilities. The PCU will be responsible for overseeing implementation of all the activities under this subcomponent.

Component 3: Institutional support, crisis management, and project coordination (US\$12.5 million of which US\$10.5 million IDA and US\$2.0 million as Borrower contribution)

49. This component aims at improving the skills of local- and national-level policy makers involved in agricultural policy and planning formulation, and providing support for agricultural policy development in line with the PDO. It will have a provision for a Contingency Emergency Response Component (CERC) and will finance institutional strengthening activities necessary for project implementation.

Subcomponent 3.1: Creating capacity for evidence-based agricultural policy analysis (US\$3.0 million, 100 percent IDA)

¹² The “Vallée du Serpent” is of strategic importance for the development of drylands. With an average width of 2.5 kilometers, extending over a length of more than 320 kilometers in the regions of Kayes, Koulikoro, and Segou, developing this area could have important implications for food security and livelihoods, and reduction of degradation of natural resources and the effects of climate change. Development in the valley could equip this semiarid region with productive infrastructure. It currently fits into the strategies and economic development tools adopted by the regional authorities. Support provided by the project in the form of a territorial development study could ensure sustainability of activities considered and scale-up in this strategic area.



50. Agricultural productivity and growth depend, to a large extent, upon the ability to make timely and informed decisions. Agricultural policies must be based on solid empirical evidence and analysis. To this end, the Project will support the establishment and operation of a new Agricultural Policy Support Unit (APSU) within the Ministry of Agriculture (MA). The role of this unit is to analyze agricultural sector data and to develop policy recommendations on that basis. The unit will also serve as a data source for other institutions wishing to conduct their own research on agricultural policy. The unit will provide timely policy recommendations in response to short-term challenges in the agriculture sector, carry out in-depth analysis for generating policy options to address medium and long-term challenges, and monitor policy implementation and evaluate policy impacts and relevance. The Project will finance training activities, collaboration agreements with technical structures involved in agricultural policy analysis, short-term technical assistance and digital services and solutions. Coordination and synergies in the planning and funding of activities will be sought with the 2018-2020 EU-funded program on agricultural and nutrition policy/programs focusing on statistics capacity strengthening. The PCU will be responsible for overseeing implementation of all the activities under this subcomponent.

Subcomponent 3.2: Contingency Emergency Response (US\$0.0 million)

51. Should a natural event precipitate a major disaster affecting the livelihoods of people living in the project area, the government may request the World Bank to reallocate project funds to cover some costs of emergency response and recovery. Detailed operational guidelines for implementing the project Contingency Emergency Response Component (CERC) will be prepared and approved by the World Bank as a disbursement condition for this sub-component. All expenditures under the CERC will be in accordance with paragraphs 11, 12, and 13 of Bank Policy: Investment Project Financing. They will be appraised and reviewed to determine if they are acceptable to the World Bank before any disbursement is made. Disbursements will be made against an approved list of goods, works, and services required to support crisis mitigation, response, recovery, and reconstruction.

Subcomponent 3.3: Project coordination (US\$9.50 million, of which US\$7.5 million from IDA and US\$2.0 from Borrower)

52. This subcomponent will provide material support to the MA and the Ministry of Solidarity and Humanitarian Action (*Ministère de la Solidarité et de l'Action Humanitaire*, MSAH) directorates at the central level and in regional offices to enable the Project to operate. A memorandum of understanding between the MA and MEF will specify the nature and scope of collaboration, and be prepared no later than three months after the Effective Date. The subcomponent focuses on all aspects of project management and coordination and M&E. The subcomponent will support steering committee meetings as well as all activities of the PCU (management of International Development Association [IDA] funds, procurement, M&E, citizen engagement activities, project compliance in terms of safeguards) and selected activities of the UTGFS under MEF.

Synergies between components and activities

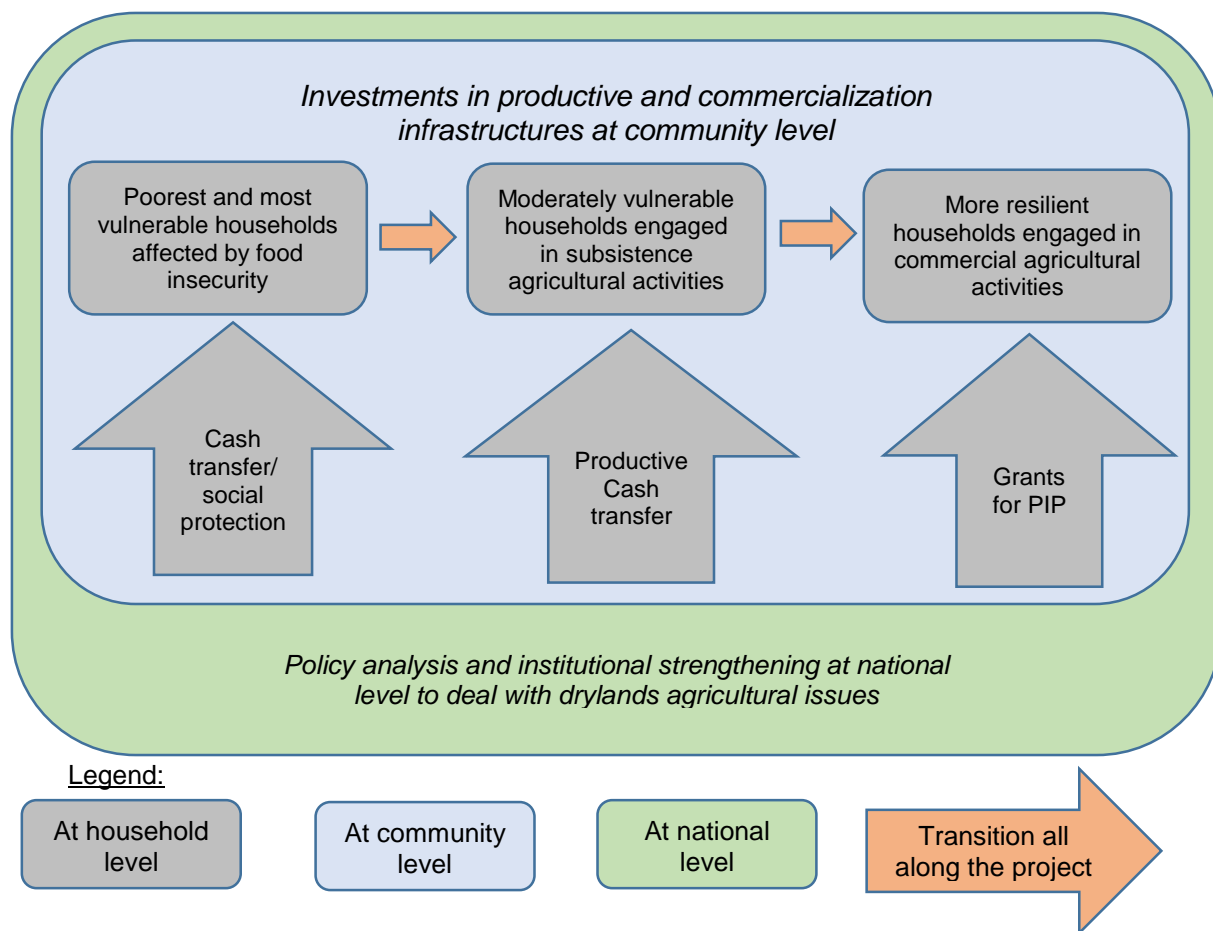
53. The PDAZAM seeks to improve the food security and livelihoods of its targeted beneficiaries, and to support the transition from subsistence agriculture and emergency assistance to sustainable rural development by providing differentiated support to the various socio-economic groups living in dryland areas. The targeted beneficiary groups include (a) the poorest and most vulnerable households affected by food insecurity and having difficulty meeting their social needs (health, education, and so forth.), (ii) the moderately vulnerable households engaged in subsistence agricultural activities; and (iii) the more resilient households engaged in commercial agricultural activities.



54. The Project includes several instruments that will support the different socio-economic groups in a tailored manner, and promote their gradual transition as they accumulate assets and become more resilient and more productive.

55. To ensure the sustainability of its results, the Project includes activities aimed at both the individual household and community level through productive infrastructure and commercialization investments allowing the sustainable use of resources (soil, water) and sustainable market exchanges. At the national level, the capacity of the public sector for agricultural policy development will also be strengthened, with a focus on dryland areas issues. Figure 1 shows the envisaged evolution of the beneficiaries according to the support received throughout project implementation, and summarizes the measures aimed at the meso- and macro-level to reinforce the sustainability of project results.

Figure 1: Trajectory of beneficiaries and accompanying measures



56. The interrelation between the project components and sub-components, pathways and interactions between social protection and agricultural development, and potential progression by beneficiaries between the different support instruments is further illustrated in Tables 2 and 3.

57. The Project uses a spatial approach and combines cash transfers for households and PIPs at the group level with community infrastructure for small-scale irrigation, landscape management, soil and



water conservation, and marketing identified in local development plans. In addition to the link among Project activities, synergies and a strong coordination and planning mechanism will also be sought with other IDA operations with activities planned in the selected districts. The Rural Mobility and Connectivity Project (P160505) with its 1,700 kilometers of rural roads in Phase I will provide much needed access to markets for PDAZAM-targeted farmers while the Sahel Irrigation Initiative Project (P154482) will support improving stakeholder' capacity to develop and manage irrigation.

Table 2: Financing windows and target groups in Components 1 and 2

Components	Subcomponents	Target groups
Component 1: <i>Improving the productivity and resilience of beneficiary populations</i>	Subcomponent 1.1: <i>Expansion of the Social Registry</i>	Vulnerable populations of the targeted project zones of 12 districts (20,000 households to be registered)
	Subcomponent 1.2: <i>Direct cash and productive transfers</i>	All identified vulnerable households meeting eligibility criteria (12,000 households)
	Subcomponent 1.3: <i>Promotion of emerging high-value crop value chains</i>	More commercially-oriented groups of producers
Component 2: <i>Productive infrastructure at the community level</i>	Subcomponent 2.1: <i>Selection and preparation of investments</i>	All targeted districts through their PDSEC
	Subcomponent 2.2: <i>Productive infrastructure investments</i>	All targeted districts' communities
	Subcomponent 2.3: <i>Commercialization investments</i>	All targeted districts' communities



Table 3: Results Chain and Theory of Change

Project Development Objectives		Outcomes	Outputs	Activities
Improved agriculture productivity and strengthened resilience of beneficiary rural households in the targeted drylands areas	Improved agriculture productivity	Improved environmental, physical and socio-economic context of agriculture in dryland areas	Strengthened national capacities to analyze agricultural policies	3.1. Policy analysis and institutional strengthening
			Productive community investments promote the sustainable use of water and soil (Environmental aspect)	2.1 Investment selection and preparation
			Communities' capacities strengthened for infrastructure management (Social / organizational aspect)	2.2 Community productive investments
		Improved product flows and prices on agricultural markets (Economic aspect)	2.3 Commercialization investments	
	Strengthened resilience of beneficiary rural households	Consolidated productive capacities and livelihoods of beneficiary households	Strengthened technical capacities of beneficiary households (Good practices and improved techniques including the use of improved seed varieties, use of new technologies, etc.)	1.2 Productive transfer 1.3 PIPs Training: technical and business plan etc.
			Accumulation of productive assets by beneficiary households (Inputs and equipment)	1.2 Cash transfer (food security and nutrition)
		Strengthened resilience of beneficiary households	Improved and diversified household sources of income	3.2 Crisis management and prevention
			Ability of beneficiary households to meet their immediate needs and to respond to crisis	
			Improved access to health care for beneficiary households (social protection)	1.1 Expansion of social registry



B. Project Cost and Financing

58. The Project will be financed by an IDA credit and an IDA Grant of US\$30.00 million each, for a total amount of US\$60.00 million in IDA financing. Counterpart funding is expected from the government in the amount of US\$2.0 million to finance the implementation of the environmental and social safeguards plans and frameworks. Beneficiaries will participate in investments under Subcomponent 1.3 (Table 4).

Table 4: Matrix of Project components/subcomponents

Project components/subcomponents	Project costs (US\$ millions)	IDA (US\$ millions)	Percent of IDA %	Beneficiaries (US\$ millions)	Counterpart
Component 1: Support improving productivity and resilience of beneficiary populations					
1.1: Expansion of the Social Registry	2.5	2.5	100	0.0	0.0
1.2: Direct cash transfers and productive transfers activities	16.0	16.0	100	0.0	0.0
1.3: Support for PIPs and emerging crops	16.5	14.0	85	2.5	0.0
Subtotal	35.0	32.5	95	2.5	0.0
Component 2: Productive infrastructure at the community level					
2.1: Selection and preparation of investments	1.5	1.5	100	0.0	0.0
2.2: Productive works and infrastructure investments	11.0	11.0	100	0.0	0.0
2.3: Commercialization investments	4.5	4.5	100	0.0	0.0
Subtotal	17.0	17.0	100	0.0	0.0
Component 3: Institutional support, crisis management, and project coordination					
3.1 Creating capacity for evidence-based agricultural policy	3.0	3.0	100	0.0	0.0
3.2 Contingency Emergency Response	0.0	0.0		0.0	0.0
3.3 Project coordination and management	9.5	7.5	79	0.0	2.0
Subtotal	12.5	10.5	84	0.0	2.0
Total project costs	64.5	60.0	95	2.5	2.0

C. Lessons Learned and Reflected in the Project Design

59. **Over the last two decades, several projects and programs have been undertaken in the Mali drylands with less than satisfactory development outcomes.** A new approach that considers agricultural risks and considers resilience of agricultural production systems in a landscape setting is needed. Improved incentives, stronger rural institutions, along with stepped-up investments in climate resilient crop and livestock development, irrigation and natural resource management are essential dimensions of this new approach.

60. **Following the October 2013 “High Level Forum ‘Beating the Odds, building resilience in the Sahel: Pastoralism in the 21st Century,’”** the World Bank launched a call for action to address the needs



of the agriculture sector in the Sahel region. It conducted several flagship analytical studies on drylands¹³, and financed several domestic and regional operations in Mali and in the Sahel region from which lessons have been derived. Best practices for resilience in drylands were also drawn from experiences of development partners, nongovernmental organizations (NGOs), and professional organizations active in the Sahel. World Bank studies and Food and Agriculture Organization (FAO) reports¹⁴ show that cash transfers have a broad range of positive social and economic effects, and when complemented with other types of support, such as the provision of productive assets and training, can enhance and sustain their impacts and increase household productivity.

61. **The lessons learned from these experiences and those of the assessment of the performance of World Bank-financed operations have been considered.** These lessons have provided the basis for the design of project activities and implementation arrangements as follows:

- (a) An integrated approach to simultaneously tackle the triple set of economic, social, and environmental challenges faced by households in drylands, based on (i) the operational experience of the AfDB in the preparation of the Regional Program on Strengthening Resilience and Food and Nutrition Insecurity in the Sahel, and (ii) various evaluations conducted by the Permanent Interstate Committee for Drought Control in the Sahel (*Comité Permanent Inter-Etats de Lutte contre la Sécheresse dans le Sahel*, CILSS);
- (b) Synergies and complementarities between social protection and agriculture development interventions capitalizing on various evaluations conducted by FAO and IFPRI on this subject and the tools provided by the AGIR Framework, aiming at structurally and sustainably reducing food and nutrition vulnerability through household and farmer support combined with infrastructure delivery and institutional strengthening at the national level;
- (c) Capacity building of public, private, and community institutions involved in the Project to ensure efficient and sustainable management of small-scale irrigation, market, and natural resource management investments and infrastructure, and delivery of agricultural/social protection services in rural areas;
- (d) Decentralization with large shifts in responsibility for the implementation of Project activities at the regional/district/commune level, with a regional support office to ensure local implementation support;
- (e) Mainstreaming and performance monitoring of the gender approach, nutrition, and climate change in agricultural productivity and resilience interventions;
- (f) Designing territorially-based agricultural policies (especially for seeds, fertilizers, and mechanization) and public services based on evidence, inclusiveness, and performance monitoring.

¹³ Studies include World Bank (2016) and World Bank (2017).

¹⁴ FAO and UNICEF 2017.



IV. IMPLEMENTATION

A. Institutional and Implementation Arrangements

62. **Overall** responsibility for project implementation will rest with the MA. The implementation arrangements of the Project will reflect the decentralized nature of the activities on the ground and involve close collaboration with the Jigisemejiri Project. Detailed implementation arrangements are presented in Annex 2.

At the national level

63. **Steering Committee.** A Steering Committee (*Comité de Pilotage*) will be established, meeting at regular intervals, with permanent membership of MSAH, MEF, *Direction Nationale du Génie Rural* (DNGR), and other members upon invitation on topics requiring specialized input. The Steering Committee will be chaired by the Minister of Agriculture or his representative. It will approve the Project's annual work plan and budgets, as well as its progress reports.

64. **Project Coordination Unit (PCU).** A PCU within the Land and Irrigation Management Agency (*Agence d'aménagement des Terres et de fourniture de l'eau d'Irrigation*, ATI), which is under the jurisdiction of MA, will be responsible for coordinating and managing the Project in collaboration with the existing Jigisemejiri Project implementation unit (UTGFS), which is under the oversight of the MEF. ATI is already implementing the Bank-financed Sahel Irrigation Initiative Project and has some experience with Bank project preparation and implementation, including fiduciary and safeguards aspects. The PCU will be responsible for overall management of the Project, including preparation of the annual work plans and budgets, financial management and procurement, general supervision of the implementation of project activities, implementation of safeguards plans and frameworks, monitoring and evaluation of project outcome and outputs. It will be answerable to the Steering Committee.

65. The UTGFS will be responsible for implementing Subcomponents 1.1 and 1.2, based on implementation plans approved by the PCU and Steering Committee. A memorandum of understanding (MoU) will be signed between the MA and the MEF that hosts the UTGFS, and a special account will be set up with UTGFS to allow withdrawals in line with agreed work plans and Statements of Expenditures.

At the regional level

66. **Regional Coordination Committees** will be established and will include the Territorial Communities and representatives of the MA/MSAH decentralized services and other ministerial departments involved in this Project. These committees will serve as steering bodies and oversee implementation of the Project at the regional level.

67. **Regional project implementation offices** will be established under the respective Regional Rural Infrastructure Department of MA by the PCU to coordinate activities at the regional level. These regional offices will oversee implementation of the Project, and will act as the Secretariat for the coordination/approval/financing/monitoring of the grants for PIPs under (Subcomponent 1.3) and productive infrastructure (Subcomponents 2.2 and 2.3). The detailed roles and responsibilities of all PCU and UTGFS staff (at both the central and local levels) will be described in the PIM.

68. **At the district level** ("cercle"), and the community and village level, the Project will be



implemented in coordination with the existing MA and MSAH services, and under the supervision of the regional office coordinator. For Component 1, at the commune level, the local authorities benefit from local committees that include representatives from civil society, NGOs, and civil servants from technical services. These committees will be responsible for identifying the targeted households in each village of the commune in close collaboration with existing village committees, under the supervision of project district agents and following criteria described in the PIM.

69. The PIM will be prepared and adopted as a compendium of procedures for the PDAZAM's operational implementation, encompassing the administrative, fiduciary, M&E, procurement, and social and environmental safeguards procedures, and the Grievance Redress Mechanism (GRM). It will include detailed terms of reference for all PCUs, UGTFS and regional offices' staff. A specific section for the management of the grant program for PIPs under Subcomponent 1.3 (Grant section of the PIM) will be prepared as a condition of disbursement. A specific manual for the Contingency Emergency Response Component under Subcomponent 3.2 will be prepared and adopted within six months of effectiveness

B. Results Monitoring and Evaluation

70. The Results Framework defines the performance indicators at the PDO level and for key project activities. The PCU has the overall responsibility for producing progress reports every semester. It will get relevant data from the UTGFS for Subcomponents 1.1 and 1.2. The Project will adopt and build on the data collection mechanism being implemented, along with the expansion of the Unified Social Register, by the Jigisemejiri Project. This will cover all indicators related to the execution of Component 1. Crop yield data will be collected by the PCU at the community level and verified against data collected by the MA through its Department of Statistics, which will be supported under Component 3 of the Project. Reporting on execution of all activities under Component 2 will be done through monthly reports, including volume of works executed and progress on construction sites, illustrated by photographs showing the geo-reference imprint (a mobile phone function) throughout the construction process. The M&E system will be designed to link technical and financial data on the Project's progress. It will serve as a mechanism to assess progress toward project outcomes and as a day-to-day management tool. It will also support Project supervision by ensuring that baseline and follow-up surveys and data collection for key performance indicators are available and regularly updated.

71. M&E reports will be produced every six months for physical implementation and results monitoring. Semiannual and annual reports will be circulated to sector ministries and development partners involved. Semiannual joint supervision missions with representatives from the Bank and the Government of Mali will ensure compliance with legal covenants and assess the status of key project outcomes. A Midterm Review will be conducted no later than three years after the first disbursement. A final independent evaluation will be conducted in the last semester of project implementation to assess overall achievement of expected project results.

72. **The** M&E manual will provide details about the definition of the Results Framework, the methodology and the instruments to be used for data collection, the institutional arrangements for M&E functions (identification of actors and definition of their respective responsibilities), the Grievance Redress Mechanisms, and the mechanism to be used for disseminating information. M&E results will inform a communication strategy that will be developed and implemented by the PCU. A baseline survey that will include both treatment and control groups to ensure attribution of project impacts will be conducted during the first year of the Project to verify the baseline data and targets presented in the



Results Framework. Moreover, an M&E mechanism will be set up to monitor emergency response activities.

73. **Iterative Beneficiary Monitoring (IBM).** This activity will monitor beneficiaries of the Project starting at the beginning of the implementation, with the objective of improving project efficiency and increasing beneficiary satisfaction and beneficiary engagement. IBM collects information on project implementation, even in insecure settings. It is light, low-cost, and rapid, and complements project supervision. The approach is problem-oriented and will provide feedback to the project team through different iterations, with the aim of catalyzing improvements in project implementation. IBM collects data directly from beneficiaries but keeps data collection efforts to a minimum by relying on a few research questions and small samples. IBM will be used to collect data to identify shortcomings that can hinder implementation of the Project. While a traditional M&E system will be used to continuously monitor overall implementation progress and produce progress reports every six months, IBM, which is demand-driven, will produce short reports, will be repeated as often as needed, and will focus on diagnosing specific barriers to effective implementation. The IBM approach has recently been applied to various projects in Mali. School feeding, fertilizer subsidies, and free medical care have all been monitored and the results used to inform and improve operations. For this Project, it will aim at improving design and implementation of the following activities: (a) combined direct cash transfers and financing of household PCTs in Subcomponent 1.2, (b) PIPs in Subcomponent 1.3, (c) productive and natural resource management investments in Subcomponent 2.2, and (d) marketing infrastructure in Subcomponent 2.3.

C. Sustainability

74. Project sustainability is linked to: (a) level of participation and appropriation by stakeholders (men and women) and in particular communities and direct beneficiaries in the entire planning and implementation process, (b) the quality of works, goods and services provided to beneficiaries, (c) financial viability of the PIPs, (d) functionality and efficacy of the management committees set to implement irrigation, natural resource management and marketing investments, and (e) setting up an efficient system to identify targeted households, PIPs and infrastructure investments through the planned selection and preparation interventions in Subcomponents 1.1, 1.3 and 2.1.

75. Project sustainability will rely on several key considerations. First, the GoM is strongly committed to pursuing its key sectoral strategies, including PNISA for agriculture and PNPS for social protection by making the productivity enhancement activities and the cash transfers to poor households an integral part of its current policy instruments. Second, the Project will promote investments at the farm and community level such as climate-smart agricultural technologies and practices including sustainable landscape management while providing responsibility for communities and farmers groups in managing infrastructure. The Project will empower and strengthen capacities of local-level stakeholders through training and capacity-building activities tailored to their specific needs and will integrate women and youth as much as possible in the various management committees to be set-up in the Project.



D. Role of Partners

76. The Project will rely on several development partners active in Mali to support and sustain its interventions. They include:

- *FAO*, which already operates various programs in the project areas will share its experience and lessons learned on questions regarding: (a) linking agriculture and social protection¹⁵, (b) good agricultural practices, (c) soil fertility, (d) climate-smart agriculture, and (e) support to women's groups for the transformation and conservation of produce.
- *NGOs and private sector organizations*. The Project will contract small and large development-oriented NGOs in the agriculture sector and social development to assist in the delivery of advisory services and inputs and facilitate access to markets under Subcomponent 1.2. It will seek to capitalize on important initiatives carried out, for example, by SOS Sahel and SahelEco (for example, the 2014-2018 DryDev initiative supported by the Netherlands).
- *Other development partners*. AfDB finances a regional program (P2RS) addressing resilience and food insecurity in the Sahel region in seven CILSS countries including Mali (2015–2020). The program covers rural infrastructure and development of value chains in semiarid-zones. The PDAZAM through its PCU, will liaise with this AfDB project, and support existing coordinating mechanisms,¹⁶ to benefit from their implementation experience in Kayes, Koulikoro, and Segou regions. The European Union (EU) has an institutional strengthening program for statistics with the MA. The PDAZAM will coordinate its activities in Subcomponent 3.1 with the EU project in areas including technical assistance for improving agricultural planning, programming and policy evaluation. USAID is currently implementing in the Segou and Mopti regions its flagship Feed-the-Future Program, the U.S. Government's global hunger and food security initiative to improve agricultural productivity and nutrition. The PDAZAM will coordinate its activities under sub-component 1.2 with those of Feed-the-Future aiming at promoting integration, empowerment of women, resilience of vulnerable communities, and inclusive development in the sorghum, and millet value chains. PDAZAM will also coordinate its activities under Subcomponent 3.1 with the Feed-the-Future empirical research, outreach and capacity building activities conducted under the Innovation Lab for Food Security supported by Michigan State University. AFD is implementing a program in the Segou region with its Economic Development Program for Rural Areas (*Programme d'Appui au Développement Economique des Territoires Ruraux des Régions de Segou et Tombouctou, PADER*) aiming at developing agricultural and pastoral value chains. The PDAZAM will coordinate its activities in Subcomponents 1.3, 2.2 and 2.3 with the capacity strengthening activities planned and implemented under the PADER.

77. The Project is included in the Sahel Alliance pipeline.

¹⁵ Opportunities will be sought to scale-up FAO's successful CASH + program in Mali. The program combines unconditional cash transfers with the provision of in-kind livestock inputs (goats and animal feed) and has benefited 750 vulnerable households and approximately 5,300 individuals in 36 villages in the Kayes region.

¹⁶ This coordination is consistent with the objectives of the Alliance for the Sahel announced in Paris on June 13, 2017, by France, Germany, and the European Union. The World Bank, AfDB, and the United Nations Development Program are institutional members of the Alliance. The Alliance is a grouping of development partners that have agreed to step up support to the Sahel countries in a variety of sectors (climate-smart energy, governance, rural development, agriculture and food security, basic services and decentralization, youth employment and innovative and effective modes of delivery, and access to services), streamline and coordinate actions, and encourage the involvement of the private sector. This Project offers a concrete opportunity for AfDB (the lead institution on agriculture and food security) and the World Bank to streamline and coordinate actions to support enhanced agricultural productivity and resilience in the drylands.

V. KEY RISKS

A. Overall Risk Rating and Explanation of Key Risks

78. The general risks associated with project implementation are summarized in the Systematic Operations Risk-Rating Tool (SORT) (table 5).

Table 5: Systematic Operations Risk-rating Tool (SORT)

Risk category	Rating
1. Political and Governance	High
2. Macroeconomic	Substantial
3. Sector Strategies and Policies	Moderate
4. Technical Design of Project or Program	Substantial
5. Institutional Capacity for Implementation and Sustainability	Substantial
6. Fiduciary	Substantial
7. Environment and Social	Substantial
8. Stakeholders	Moderate
9. Other (Security)	High
OVERALL	Substantial

79. The overall risk rating is Substantial, mainly due to the security situation, the general political and institutional instability, the macroeconomic context, and implementation capacity and sustainability risks. The major risks are:

- (a) *Political and governance (high)*. Lack of progress in the security situation in the North and recent upticks in violence in the Center (through terrorist attacks) could distract the government's attention and divert resources from its recovery and development agenda. The government's security apparatus has so far been unable to counter this trend, and there is a real risk of a growing divide within Mali's population. Recent experience shows how quickly public support for the government can shift. Reports of growing levels of insecurity in central regions, recurring protests in Bamako, and increasing crime levels in general are evidence of the likelihood of such a shift. The proposed operation does not directly entail measures to mitigate such risks or their impact. However, since the project focuses on poverty reduction, agricultural productivity enhancement, and resilience, these actions will generate buffers needed to absorb shocks.
- (b) *Macroeconomic (substantial)*. Even though Mali's fiscal situation and management have remained sound during the last crisis, given the stabilizing effect of West African Economic and Monetary Union membership and recent public financial management reforms, declining oil prices and a further drop in gold prices have the potential to negatively affect fiscal accounts. Adverse weather effects would only aggravate this situation. Risks of contagion effects to the financial sector or to the balance of payments would continue to be moderate



as the financial sector continues to be highly liquid and Mali benefits from the pooling of WAEMU foreign currency reserves to cover its balance of payments needs in bad times, including external debt service obligations.

- (c) *Technical design (substantial)*. In view of the innovative nature of the project across two ministries (MA and MEF) to handle several agricultural development and social protection mechanisms, and the untested nature of implementation arrangements, the risk related to technical design is rated as Substantial. This is partially mitigated by a Steering Committee to oversee the project and an MOU between MA and MEF defining the roles and responsibilities of the PCU and UTGFS, and provisions for a single annual work plan and budget for the Project.
- (d) *Institutional capacity for implementation (including fiduciary capacity) and sustainability (substantial)*. Executing agencies exhibit significant constraints in their capacity to implement externally funded projects in Mali. Implementation involves several agencies and activities in several different locations in the project area. This risk will be mitigated through the following measures. First, The PCU (ATI) will be given the authority to coordinate all project activities. Although ATI is implementing the World Bank-financed Sahel Irrigation Initiative Support Project and has shown capacity to deliver on a tight schedule, it still has limited experience with managing World Bank-financed projects, particularly in fiduciary and safeguards management. The new personnel that will join the PCU will be encouraged to take training relative to their respective specialties. Second, regional implementation offices will be established to oversee implementation at the district/commune level and will be an integral part of the monitoring arrangements.
- (e) *Fiduciary (substantial)*. Based on experience from other IDA-funded projects executed in Mali, the fiduciary risks are assessed as Substantial. To mitigate this risk, the dedicated PCU will be reinforced with the recruitment of experienced fiduciary experts.
- (f) *Environment and social (substantial)*. The environmental and social risks related to this Project are rated Substantial, given Mali's general vulnerability to climate change (especially to droughts and floods) and the consequent negative impact on natural resources. The Project by its nature will be implemented in a vulnerable environment. The environmental risk is mainly related to construction and rehabilitation of productive and marketing infrastructure facilities. The government has adopted a framework approach by preparing an Environmental and Social Management Framework (ESMF) and a Resettlement Policy Framework (RPF). An Integrated Pest and Pesticides Management Plan (IPPMP) was also prepared. The World Bank and the government will work together to ensure that safeguards concerns are fully addressed in a satisfactory manner. The following measures will mitigate these risks: (a) counterpart funding will be used for environmental and social safeguards implementation; (b) the Project will 6 environmental management and social development specialists for the PCU at the central and regional level to put in place adequate screening mechanisms, and monitor and address risks; and (c) inclusion of support for the formulation of regional and local climate change adaptation plans under Subcomponent 2.1.
- (g) *Other-Security (high)*. The selection of the project implementation areas was informed by the levels of insecurity that will further be mitigated by a phased approach. The project will be starting in the regions of Kayes and Koulikoro and will be rolled to the regions of Segou and Mopti regions based on updated security assessments. Should the need arise, the Project will



rely on enhanced monitoring and evaluation approaches as currently implemented by the Mali Reconstruction and Economic Recovery Project (P144442).

VI. APPRAISAL SUMMARY

A. Economic and Financial Analysis

80. **Development impacts.** Project activities (including cash transfers, grants for PIPs and infrastructure investments) will be instrumental in improving social protection, strengthening nutrition, and sustainably improving agricultural and food production, the incomes of vulnerable households, and their access to food in the fragile environment of the semiarid zones of Mali.

81. **Rationale for public financing.** Drylands in Mali are “investment deserts.” Because of unpredictable climate conditions and other risk factors, public investments are needed to de-risk investments from the private sector (including farmers). International and regional evidence¹⁷ indicate that economic rates of return may be higher in rainfed drylands regions than in more humid regions. The Project aims at strengthening the provision of public goods and services in the dryland rural economy while also addressing several market failures affecting performance of the agriculture sector—such as lack of access to finance, high risks with adoption of technologies and practices, and lack of incentives for adoption of more sustainable land and water practices.

82. **World Bank value added.** Bank support is expected to improve the efficiency and targeting of services and infrastructure supported under the Project, thereby increasing its economic benefits and inclusiveness. The value added of the World Bank is based on (a) its global and regional expertise in the design and implementation of integrated projects and programs in West Africa and the Sahel aimed at improving agricultural productivity and resilience of small producers and rural households, and (b) strong synergies of the Project with the Bank’s broader sustainable and human development portfolio. The Bank, ranked in Mali as the most important donor in agriculture and rural development in 2017 with 20 percent of official donor assistance, is in a unique position to support the Government of Mali in designing and implementing its 2015–2025 PNISA to maximize economic, social and environmental benefits in some of the most fragile environments in the country.

83. **Summary of results.** Project activities are expected to generate three main benefit streams: (a) farmers’ direct benefits, such as increased crop yields, increased revenues, resilience to climate variability and climate change risks, and more intangible social benefits provided by cash transfers such as improved food security and nutrition, human capital strengthening, and women and youth empowerment; (b) community-level benefits, such as additional income generated through access to markets and economic infrastructure; and (c) environmental benefits, such as natural resources protection and reduced greenhouse gas emissions through the use of sustainable technologies and the preparation of climate-smart investment plans and strategies. The main channel for these benefit streams is through the activities of Subcomponents 1.2 (PCTs for inputs and small equipment purchase) and Subcomponent 1.3 (grants for PIPs, including access to improved seeds, and income generating activities), Subcomponent 2.2

¹⁷ Mortimore 2009.



(small-scale irrigation and natural resource management practices), and Subcomponent 2.3 (market infrastructure). It is important to recognize, however, that the national-level and regional-level activities in Subcomponents 1.1 (social registry), Subcomponent 2.1 (investment preparation), and Subcomponent 3.1 (policy analysis and institutional strengthening) will create an enabling environment for successful implementation of service delivery and infrastructure in drylands.

84. **A financial and economic analysis was conducted to assess the soundness of the proposed project activities, modelled from the perspective of the target beneficiaries, and compared with the *without-project* situation** (which reflects the current situation and has been considered static for the analysis). Crop and activity budgets have been prepared for the main crops, with computed costs and benefits experienced by the beneficiaries with and without the project intervention, using market prices. Ten models were prepared: (1) production of rainfed cereals, (2) production and processing of rainfed cereals, (3) local poultry farming, (4) cattle for milk production, (5) milk processing, (6) rainfed cereal seed production, (7) sheep rearing, (8) rice-onion-tomato production, (9) production and repair of agricultural equipment, and (10) onion storage. The economic analysis followed a similar approach, but using economic prices and aggregating the results at the Project level and from the societal viewpoint. The economic analysis uses the incremental benefits, adoption rates, and expected total number of beneficiaries (aligned to the Results Framework), and subtracts the total project economic costs to determine the overall economic viability of the Project.

85. **Financial analysis.** As shown in Annex 2, all models have good prospects for profitability that should make the activities attractive for small-scale poor farmers in the semiarid zones of Mali. For all financial models used, gross margins, internal rates of return, and additional net present value (NPV) are positive. In all models, the gross margins are higher in the *situation with project* (WPS) than in the *situation without project* (WOPS), releasing positive additional margins, averaging US\$15,781 across the crop and livestock financial models but with significant differences across activities. The financial internal rate of return (FIRR) is higher in WPS than in WOPS, for all models. Compared to WOPS, the Project will allow an average increase in NPV of US\$41,986, again with significant deviations from crop to crop. Overall, all models indicate positive NPVs and cost-benefit ratios higher than 1.

86. **Economic analysis.** Based on the above assumptions, the NPV is about US\$17.6 million. The economic internal rate of return (EIRR) of the Project is approximately 21.3 percent. Sensitivity analysis¹⁸ based on project cost increases of 10 percent, 20 percent, and 30 percent gives EIRRs of 20.1 percent, 19.0 percent, and 17.9 percent, respectively. The corresponding NPVs are US\$16.6 million, US\$15.5 million, and US\$14.5 million, respectively. The sensitivity analysis based on reductions of 10 percent, 20 percent, and 30 percent of additional gross margins gives EIRRs of 20.0 percent, 18.4 percent, and 16.7 percent. The corresponding NPVs are, respectively, US\$14.8 million, US\$12.0 million, and US\$9.2 million. The sensitivity analysis based on a one-year or two-year delay in the realization of benefits gives EIRRs of 18.6 percent and 16.0 percent, respectively. The corresponding NPVs are, respectively, US\$14.0 million and US\$10.5 million.

87. **The GHG accounting calculations indicate that the carbon balance results are positive and significant with the proposed project activities leading to a reduction of some 4.5 million of CO₂t/equivalent over a 20-year period of project impacts from the start of implementation.** The mitigation potential from the interventions in approximately a third of the communes in the 12 circles of the project intervention area is estimated at -225,552 CO₂ t/equivalent or approximately 0.1 ton per

¹⁸ Annex 4 provides details about the economic, financial and GHG analysis.



hectare per year. To evaluate the economic impact of GHG reduction, three scenarios were used including the low/high price per ton as recommended, and the current market price per ton for comparison purposes. Including the three cost scenarios of carbon emissions equivalent averted, the NPV, and EIRR are as follows in the base case scenario:

- EIRR increases from 21.3 percent to 25.3 percent at US\$8.0 per ton of CO₂ equivalent, to 50.3 percent at US\$40.0 per ton, and to over 89.2 percent at US\$80.0 per ton.
- NPV at an 8 percent discount rate increases from US\$17.6 million to US\$21.9 million at US\$8.0 per ton, to US\$39.3 million at US\$40.0 per ton and to US\$61.0 million at US\$80.0 per ton of CO₂ equivalent.

B. Technical

88. *Rationale for selected design and approach.* Due in part to their vast area and to the sparse and transient nature of much of their population, the drylands of Mali have historically received less policy attention than the southern part of the country, where much of the agricultural production occurs. However, recurrent crises caused by increasingly erratic weather patterns affecting the entire Sahel region, pressures on the land from a growing population practicing mostly extractive agriculture, and a lack of basic services, have led to near chronic crisis interventions but no clear policy that would lead to the sustainable development of the region. Yet, recent work by the Bank¹⁹ suggests that Mali's drylands have significant untapped agricultural potential that could be better harnessed if its population were less vulnerable to recurrent crises and agricultural support programs were better targeted. This Project addresses the problem from both angles, reducing vulnerability by providing basic income support through cash transfers, while simultaneously providing support to improve agricultural household productivity as well as activities to reduce climate vulnerability and basic infrastructure to help in building reserves that can be tapped into by the community during times of crisis, and facilities to improve access to markets for local agricultural production surpluses.

89. *Appropriateness to Borrower's needs.* Cervigni and Morris (World Bank, 2016) state that promoting sustainable development in the drylands and conferring resilience to their inhabitants will require addressing a complex web of economic, social, political, and environmental vulnerabilities. Mali's high vulnerability to shocks and the importance of agriculture to economic growth require building resilience to effectively increase incomes, reduce poverty, and improve the welfare of people living in drylands. Small changes in the nature and mix of assets (and livelihood strategy) can enhance the resilience of households and improve their coping capacity to recover from shocks after they occur. Social protection can help in addressing some risks, and support diversifying household assets and altering income generating activities to reduce exposure to future shocks, while reducing food insecurity and improving child nutrition. Coordinated and coherent agricultural and social protection policies and programs have the potential to help rural households and poor, small family farmers to build resilience and prevent the transmission of poverty across generations.

90. *Conformity with international standards.* Combined agricultural development and social protection interventions have been widely evaluated in recent years, and projects are operating in several countries in the region following a similar approach. In the Sahel countries, this is of relevance due to the heavy dependency on the agriculture sector for GDP and employment, and the sector's inherent

¹⁹ World Bank, 2016 and 2017.



vulnerability to shocks. There is growing recognition that effective intervention in rural areas cannot rely solely on investments in agriculture, but must comprise aspects affecting the broader rural economy and the services and assets needed for rural areas to flourish.

C. Financial Management

91. A financial management (FM) assessment of the implementing unit—the ATI—designated to manage the Mali Drylands Development Project (PDAZAM) was carried out in 2018. The objective of the assessment was to determine whether ATI has acceptable FM arrangements in place to ensure that the project funds will be used only for intended purposes, with due attention to economy and efficiency. The assessment complied with the Bank Directive Financial Management Manual for Investment Project Financing operation effective March 1, 2010, and as last revised on February 10, 2017. UTGFS, the project coordination unit of the ongoing Emergency Safety Nets Project, will have the fiduciary responsibility for Subcomponents 1.1 and 1.2. The financial management arrangements for the PDAZAM project will be based on the existing arrangements of the Jigisemejiri Project. The overall FM performance of the UTGFS is Satisfactory. The UTGFS is familiar with the Bank FM requirements. The relationship between the PCU and UTGFS will be regulated through an MOU agreed between the MA and MEF. A special account will be opened for UTGFS from which it will withdraw funds in line with work plans and statements of expenditures agreed with the PCU.

92. Arrangements are acceptable if they are capable of accurately recording all transactions and balances, supporting the preparation of regular and reliable financial statements, safeguarding the Project's assets, and are subject to auditing arrangements acceptable to the Bank. These arrangements should be in place when project implementation starts and be maintained as such during project implementation. The assessment concluded that the financial management of the ATI satisfies the Bank's minimum FM requirements under Bank Policy and the Directive for Investment Project Financing, and therefore is adequate to provide, with reasonable assurance, accurate and timely financial management information on the status of the Project required by the Bank.

93. The overall fiduciary risk rating is assessed as Substantial, and mitigation measures will include strengthening if the internal control environment and maintaining the continuous timeliness and reliability of information produced by the PCU and an adequate segregation of duties. These measures are (a) a Financial Management Officer (FMO) and an accountant with qualifications and experience satisfactory to the Bank will be appointed and fully dedicated to the accounting and disbursements tasks of this Project; (b) an accounting software will be customized to take account of new project activities; and (c) the PCU will produce a project implementation manual (PIM) including fiduciary procedures. These three mitigation measures are dated covenants and should be implemented within three months following the effectiveness of the Project. The PCU will also recruit an external auditor within six months after the effectiveness date. An FM action plan to enhance the FM arrangements for the Project is included in Annex 2.

D. Procurement

94. **The Recipient will carry out procurement for the proposed Project** in accordance with the World Bank's "Procurement Regulations for IPF Borrowers" (Procurement Regulations) dated July 2016 and revised in November 2017 under the "New Procurement Framework (NPF), and the "Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and



Grants,” dated October 15, 2006, and revised in January 2011 and as of July 1, 2016.

95. All goods, works, and non-consulting services will be procured in accordance with the requirements set forth or referred to in the Section VI-Approved Methods: Goods, Works and Non-Consulting Services of the Procurement Regulations. The Consulting Services will be procured in accordance with the requirements set forth or referred to in the Section VII-Approved Selection Methods: Consulting Services of the Procurement Regulations, the Project Procurement Strategy for Development (PPSD), and the Procurement Plan, approved by the World Bank. The Procurement Plan, including its updates, shall include for each contract (a) a brief description of the activities/contracts, (b) selection methods to be applied, (c) cost estimates, (d) time schedules, (e) the Bank’s review requirements, and (f) any other relevant procurement information. The Procurement Plan covering the first 18 months of project implementation has been prepared and approved by the Bank. Any update of the Procurement Plan will be submitted for the Bank’s approval. The Recipient shall use the Bank’s online procurement planning and tracking tools to prepare, clear, and update its Procurement Plans and conduct all procurement transactions.

96. All procuring entities as well as bidders, and service providers, that is, suppliers, contractors, and consultants, shall observe the highest standard of ethics during the procurement and execution of contracts financed under the Project in accordance with paragraph 3.32 and Annex IV of the Procurement Regulations.

97. **Requirements and Actions for National Open Competitive Procurement.** When procurement is done on the national market, as agreed in the Procurement Plan, the country’s own procurement procedures may be used, with the requirements set forth or referred to in paragraphs 5.3 to 5.6 related to National Procurement Procedures. For Mali, the requirements for national open competitive procurement are presented in Annex 2.

98. **Project Procurement Strategy for Development (PPSD).** The Recipient has prepared the PPSD, which describes how procurement activities will support project operations for the achievement of the project development objective and deliver value for money. The procurement strategy is linked to the project implementation strategy at the country, regional, and international levels, ensuring proper sequencing of the activities. They consider institutional arrangements for procurement; roles and responsibilities; thresholds, procurement methods, and prior review; and the requirements for carrying out procurement. They also include a detailed assessment and description of ATI and government capacities for carrying out procurement and managing contract implementation, within an acceptable governance structure and accountability framework. Other issues considered include the behaviors, trends, and capabilities of the market (that is, market analysis) to respond to the procurement plan. The strategy includes a summary on Procurement Risk, the Mitigation Action Plan, Market Analysis, and Procurement Approaches provided by annex 2. The PPSD (including procurement plan) has been reviewed by the Bank.

99. Project design will provide a window to enable the Recipient to carry out Advance Contracting and Retroactive Financing in accordance with Section V (5.1 and 5.2) of the World Bank Procurement Regulations for Investment Project Financing Borrowers. Retroactive financing will be allowed up to 20 percent of the credit/grant covering the expenditures incurred by the Project, not more than 12 months before the date of the signing of the Legal Agreements for the World Bank Credit/Grant. These expenditures are related to goods, works, non-consulting services, and consulting services including training and operating costs under Subcomponents 1.2, 1.3, 3.1, 3.3 and Component 2.



100. A detailed description of procurement and institutional arrangements can be found in Annex 2.

E. Social (including Safeguards)

101. **Social.** The PDAZAM will help beneficiaries in the Project area to better secure and diversify agricultural production (cereals, vegetables, and so forth), animal (cattle, sheep, goats, poultry, milk), and forest (non-wood products) income generating activities. The increase in the purchasing power of the population from access to cash transfers and income generating activities will enable households, particularly women, to access crop management techniques, including pest treatment options and prevention of crop diseases. The Project is expected to contribute overall to the reduction of rural-urban migration, providing incentives for people, particularly young people, to remain in rural areas. The building and rehabilitation of rural roads through the IDA Rural Mobility and Connectivity Project in the PDAZAM intervention areas and the construction of cereal banks and storage facilities is expected to contribute to the reduction of post-harvest losses, and consequently increase agricultural production and household income. Access to new sites is expected to facilitate the flow of inputs and products, improving overall trade in the project areas. By increasing the participation in, and access of beneficiaries to, decision-making processes about provision of services and infrastructure, the Project will also play a strategic role in the development of social capital, and in sustainably meeting economic needs of populations in dryland areas. With the close involvement of rural councils (site selection, organization of agricultural and pastoral areas, and so forth), it will also help significantly consolidate the process of local development and the promotion of good governance.

102. The Project triggers the Involuntary Resettlement Safeguard Policy (OP 4.12). While the regions of project intervention have been known for some time, actual investments at the local level will be determined only once communes are selected, and the Project has adopted a framework approach to handle any likely social safeguard risks and adverse impacts. As part of this approach, an ESMF and an RPF have been prepared by the Borrower, amply consulted upon, and publicly disclosed both in-country (May 5, 2018) and on the World Bank external website (May 9, 2018) after approval. Their preparation is justified since the Project may have some adverse social impacts, although any adverse social impacts of project activities on the human population in general (and vulnerable social groups, in particular) are likely to be limited, small in scale, mostly site specific, and reversible.

103. **Citizen engagement.** The proposed Project activities are based on continuing citizen engagement and stakeholder consultation and participation throughout the project cycle (design, preparation, and implementation). The determination of investments of the infrastructure component are premised on the Economic, Social and Cultural Development Programs (PDSECs) that have been developed at the communal level. To ensure that these documents do indeed reflect the local wishes of the population, town hall meetings are expected to be held where the population and interested groups can participate to verify the investment priorities identified in the PDSEC. Three main approaches will be used to foster engagement:

- Representatives of civil society organizations will be invited to provide feedback to the Steering Committee to ensure beneficiaries' concerns are considered and to participate in the decision-making process regarding project implementation activities.
- During supervision missions and evaluations of the Project's achievements, focus group discussions and beneficiary satisfaction surveys will periodically gather feedback from beneficiaries on project implementation (its effectiveness, inclusiveness, quality, delivery, and



targeting); this information will be used to improve implementation and address issues raised by beneficiaries to obtain better results moving forward.

- Civil society organizations and communities will be involved in Bank supervision missions, as well as the joint evaluation of project results upon completion of the Project. Recurrent consultations with civil society and direct beneficiaries will be part of the project M&E strategy. The preparation and implementation of safeguard instruments have been and will be part of the consultation process. Citizen engagement and beneficiary feedback will be monitored through the measurement of beneficiaries' satisfaction in relation to project interventions.

104. **Nutrition.** Food availability within households is only one of the determinants of children's nutritional status, hence the need to integrate food practices in agricultural production activities to have an impact on the nutritional status of vulnerable groups. More attention to the direct and immediate causes of malnutrition and mortality is necessary (poor care practices, lack of clean drinking water, hygiene, and access to the treatment of children's diseases). Also, food security induced by the cash transfers, access to productive assets and better agricultural practices, and infrastructure development, will contribute to nutritional status improvements of the population, including children, and therefore to their cognitive development. This will have an impact on long-term productivity, thereby establishing a virtuous cycle.

105. **Jobs for the youth and promotion of agricultural entrepreneurship.** The PDAZAM will support the training and installation of young people through PCTs in Subcomponent 1.2, and facilitate the preparation of PIPs by young people and their financing through the grants financed in Subcomponent 1.3. The PDAZAM intends to promote the creation of non-farm jobs to cater to future demand of beneficiaries from PIPs and infrastructure financing (equipment maintenance, spare parts shops, distribution of inputs, development of irrigation systems, agricultural mechanization work, and so forth). Private services centers will be responsible for the training in entrepreneurship and business management, and will ensure coaching of PIPs led by young people to ensure their sustainability. The creation of productive investments projects will contribute to the formation of agricultural clusters to connect different actors: producers, local contractors (involved in the various segments of value chains), financial services, and services providers in the region.

F. Environment (including Safeguards)

106. **Environment.** The PDAZAM is rated as Environmental Assessment Category B, requiring a partial environmental assessment. Given the nature of the work to be undertaken (mini-dams, development of ponds and shallows, irrigation perimeters, and so forth), it triggers the following environmental safeguard policies: Environmental Assessment (OP/BP 4.01), Pest Management (OP4.09), Physical Cultural Resources (OP/BP4.11), and Forests (OP/BP 4.36). The Project will undertake site-specific physical activities, and any adverse environmental impacts are expected to be moderate and reversible, given appropriate mitigation measures. Two framework documents have been prepared in accordance with the World Bank procedures and Mali regulatory frameworks.

107. As the exact locations for a substantial number of project activities remain unknown, a framework approach for environmental safeguards was adopted. Consequently, an ESMF was prepared in line with OP/BP 4.01. This ESMF include specific provisions on handling "chance find" Physical Cultural Resources in compliance with OP/BP 4.11. No specific safeguard instrument was developed for OP/BP 4.11.



108. The ESMF describes procedures and processes for preparing and disclosing site-specific safeguard instruments—an Environmental and Social Impact Assessment (ESIA), including an Environmental and Social Management Plan (ESMP), as required—as soon as the exact locations and scope of project activities are known. Any specific ESIA, including the corresponding ESMP, prepared in accordance with the screening result, will be approved in consultation with all the stakeholders before the corresponding activity starts. The ESMF covers such issues as (a) hygiene and safety conditions, (b) safe handling and disposal or management of waste from construction, and (c) the emergency response to crisis outbreaks under which the Project would consider taking necessary measures.

109. Even though the Project is not envisaged to procure chemical pesticides, a Pest Management Plan was prepared to comply with OP 4.09, since potential use of chemicals is expected to be on a small scale and easily managed.

110. **Potential adverse risks and impacts identified at the ESMF stage.** In addition to insecurity risks due to the presence of terrorist groups, the ESMF identified several other potential risks and impacts. They include risks of soil degradation, fuels or other pollutants, decreased water quality, pollution noise near construction sites, dust and smoke generated by site work that risk diseases and nuisance related to dust and smoke; risk of accidents during civils works; risk of expropriation in case of installation on private land; and risk of increase of social conflicts.

111. **Institutional arrangement for safeguards implementation.** While several stakeholders will be involved in implementing the Project, including the MA, the main responsibility for safeguards screening, monitoring, and implementation will be with the PCU at the central level and regional office level. The PCU will hire an environmental safeguard specialist and a social safeguard specialist (at the central level in the PIU) and an environmental specialist and a social development specialist (at the regional level) in each of the two regional offices, all with qualifications and experience satisfactory to the Association. The environmental and social safeguards team will work closely with the National Directorate for the Sanitation of Pollution and Nuisance Control (*Direction Nationale de l'Assainissement du Contrôle des Pollutions et des Nuisances*, DNACPN) in charge of ensuring that environmental and social safeguards are properly addressed during project implementation. The PCU will sign a memorandum of understanding with the DNACPN that will define the collaboration modalities between the two entities. All PCTs and PIPs will be systematically subject to safeguards screening that will decide which safeguards instruments are relevant for the related environmental and social risks and impacts mitigation measures. The PIM will detail the safeguards screening and mitigation process, the gender-based violence management, and the Grievance Redress Mechanism.

112. **Technical feasibility and site-specific safeguards studies.** The consultants in charge of completing technical feasibility studies will work closely with the consultants working on the preparation of environmental safeguards site specific instruments to ensure that all measures are adequately reflected.

113. **Consultation and disclosure.** During the preparation of the ESMF, the main stakeholders have been consulted in the targeted drylands areas, and in Bamako during the national validation of the ESMF. The consultation of the main stakeholders will be systematic during the whole project life cycle.

114. **Climate change.** Successive droughts that have affected the Sahel region in recent decades, combined with rangeland overgrazing and strong deforestation due to household energy needs, have accelerated the desertification process of the Sahelian agroecological region of Mali, with a direct impact on climate change. The regeneration of vegetation cover expected owing to the mobilization of surface water and water harvesting, soil conservation, and rational use of pastures promoted in Subcomponents



2.1 and 2.2, will mitigate the evolution of this phenomenon. The activities of PDAZAM are expected to have major positive impacts on the natural environment, on biodiversity, and on adaptation and reduction of vulnerability to climate change, and to contribute to global mitigation effects of climate change. Indeed, the revival of vegetation should contribute to the reduction of greenhouse gases. Moreover, the activities of PDAZAM synchronize well with the Mali National Plan for Adaptation to Climate Change. It contributes to securing the agro-pastoral activities and systems of production in the Sahelian agro-ecological region and improving the resilience of people through income diversification. The adaptability of populations will also be strengthened by the development of local adaptation plans at the communal level as planned under Subcomponent 2.1 and the financing of the related investments under Subcomponent 2.2.

G. World Bank Grievance Redress

115. Communities and individuals who believe that they are adversely affected by a World Bank-supported project may submit complaints to existing project-level grievance redress mechanisms or the World Bank's Grievance Redress Service. The Grievance Redress Service ensures that complaints received are promptly reviewed in order to address project-related concerns. Project-affected communities and individuals may submit their complaint to the World Bank's independent Inspection Panel, which determines whether harm occurred, or could occur, as a result of World Bank noncompliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service, please visit <http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service>. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.



VII. RESULTS FRAMEWORK AND MONITORING

Results Framework

Project Development Objective(s)

To improve agricultural productivity and strengthen resilience of rural households living in the targeted dryland areas

PDO Indicators by Objectives / Outcomes	DLI	CRI	Unit of Measure	Baseline	Intermediate Targets					End Target
					1	2	3	4	5	
Improved agricultural productivity										
Yield increase of major crops in the project areas			Percentage	0.00	0.00	3.50	8.20	13.60	20.00	20.00
Yield increase of Sorghum			Metric ton	1.20	0.00	1.24	1.30	1.36	1.44	1.44
Yield increase in Maize			Metric ton	2.50	0.00	2.59	2.71	2.84	3.00	3.00
Yield increase in Millet			Metric ton	1.00	0.00	1.04	1.08	1.14	1.20	1.20
Strengthened resilience of rural households										
Proportion of cash transfer beneficiary households with food consumption score above 35			Percentage	70.00	70.00	70.00	75.00	85.00	90.00	90.00
Beneficiary satisfaction with project interventions										
Beneficiary satisfaction rate with services provided by the project			Percentage	0.00	0.00	0.00	50.00	50.00	65.00	65.00



PDO Indicators by Objectives / Outcomes	DLI	CRI	Unit of Measure	Baseline	Intermediate Targets					End Target
					1	2	3	4	5	
Number of direct project beneficiaries										
Direct beneficiary households of the project			Number	0.00	1,000.00	6,200.00	11,800.00	17,400.00	20,000.00	20,000.00
Female head of household direct beneficiaries of the project			Number	0.00	100.00	680.00	1,300.00	1,910.00	2,200.00	2,200.00

Intermediate Results Indicators by Components	DLI	CRI	Unit of Measure	Baseline	Intermediate Targets					End Target
					1	2	3	4	5	
Component 1 - Improving the productivity and resilience of beneficiary populations										
Households with access to cash transfers, productive transfers and grants (gender disagreg)			Number	0.00	1,000.00	5,000.00	10,000.00	15,000.00	17,000.00	17,000.00
Direct cash transfer recipients			Number	0.00	500.00	3,000.00	6,000.00	9,000.00	12,000.00	12,000.00
Productive cash transfer recipients			Number	0.00	0.00	3,000.00	5,000.00	7,500.00	9,600.00	9,600.00
Grants for PIPs			Number	0.00	50.00	200.00	350.00	450.00	600.00	600.00
Farmers adopting improved agricultural technology		Yes	Number	0.00	0.00	2,000.00	3,000.00	4,000.00	5,000.00	5,000.00
Farmers adopting improved agricultural technology -		Yes	Number	0.00	0.00	500.00	1,000.00	2,000.00	2,500.00	2,500.00



Female					0	00	00	00	
Component 2 - Productive Infrastructure at the Community Level									
Productive infrastructure completed and used by beneficiary community as a result of the project.		Number	0.00	0.00	10.00	50.00	150.00	250.00	250.00
Area directly protected or recovered as result from investment of productive community infrastructure made by the project		Hectare(Ha)	0.00	0.00	300.00	800.00	1,300.00	2,100.00	2,100.00
Component 3 - Institutional support, crisis management, and project coordination									
Agricultural policies affecting dryland enforced as a result of the project policy notes		Number	0.00	0.00	2.00	3.00	4.00	5.00	5.00

Monitoring & Evaluation Plan: PDO Indicators

Indicator Name	Yield increase of major crops in the project areas
Definition/Description	Average yield increase of Sorghum, Maize and Millet among project beneficiaries adopting improved technology promoted by the project. Calculated in metric ton/ha under rainfed conditions and expressed in percentage compared to baseline survey results.
Frequency	Yearly
Data Source	Progress reports/PDAZAM M&E system, deconcentrated offices of MA and Directorate of statistics
Methodology for Data Collection	Yearly surveys, statistical databases
Responsibility for Data Collection	PCU



Indicator Name	Yield increase of Sorghum
Definition/Description	Average yield of Sorghum among project beneficiaries adopting improved technology promoted by the project. Yields are measured in ton/ha in rainfed conditions
Frequency	Yearly
Data Source	Progress reports/PDAZAM M&E system, deconcentrated offices of MA and directorate of statistics
Methodology for Data Collection	Yearly survey, statistical databases
Responsibility for Data Collection	PCU
Indicator Name	Yield increase in Maize
Definition/Description	Average yield of Maize among project beneficiaries adopting new technology promoted by the project. Yields are measured in ton/ha, under rainfed conditions.
Frequency	Yearly
Data Source	Progress report/PDAZAM M&E system, deconcentrated offices of MA and Directorate of statistics
Methodology for Data Collection	Yearly survey, statistical databases
Responsibility for Data Collection	PCU



Indicator Name	Yield increase in Millet
Definition/Description	Average yield of Millet among project beneficiaries adopting improved technology promoted by the project. Yields are measured in ton/ha, under rainfed conditions
Frequency	Yearly
Data Source	Progress report/PDAZAM M&E system, deconcentrated offices of MA and Directorate of statistics
Methodology for Data Collection	Yearly survey, statistical databases
Responsibility for Data Collection	PCU
Indicator Name	Proportion of cash transfer beneficiary households with food consumption score above 35
Definition/Description	Proportion of households within the beneficiary households of cash transfers, showing a food consumption score above 35. The food consumption score methodology is defined by the WFP (World Food Program) and calculated at the household level.
Frequency	Yearly
Data Source	Progress report/PDAZAM and M&E system
Methodology for Data Collection	Survey of beneficiaries
Responsibility for Data Collection	UTGFS/PCU



Indicator Name	Beneficiary satisfaction rate with services provided by the project
Definition/Description	Percentage of beneficiaries who express satisfaction with the services provided in the project areas based on formal surveys. It is expected that a survey to measure this indicator will be carried out twice throughout the project. The sample size should be representative of the total number of beneficiaries.
Frequency	Mid term, and end of project
Data Source	Progress reports/PDAZAM M&E system
Methodology for Data Collection	Survey
Responsibility for Data Collection	UTGFS and PCU
Indicator Name	Direct beneficiary households of the project
Definition/Description	Total number of households receiving either cash transfers, productive cash transfers or project grants, and household beneficiaries (farmers) adopting improved technology promoted by the project. Households may benefit from more than one of these, but are only accounted once.
Frequency	Every 6 months
Data Source	Progress reports/PDAZAM M&E System
Methodology for Data Collection	Extracted from RSU database and grant management database
Responsibility for Data Collection	PCU/UTGFS and other implementing institutions



Indicator Name	Female head of household direct beneficiaries of the project
Definition/Description	Total number of women acting as head of household (either de facto or de jure) receiving either direct cash transfers, productive cash transfers, project grants and farmer women acting as head of household (either de facto or de jure) adopting improved technology promoted by the project. Households may benefit from more than one of these, but are only accounted once.
Frequency	Every 6 months
Data Source	Progress report/PDAZAM M&E system
Methodology for Data Collection	RSU and UTGFS database and grant database
Responsibility for Data Collection	PCU/UTGFS



Monitoring & Evaluation Plan: Intermediate Results Indicators

Indicator Name	Households with access to cash transfers, productive transfers and grants (gender disagreg)
Definition/Description	Beneficiaries households receiving any of the three forms of direct financial support from the project. Households may benefit from more than one source of financial support, but are accounted only once.
Frequency	Every 6 months
Data Source	Progress reports/PDAZAM M&E System
Methodology for Data Collection	Extracted from RSU register and UTGFS records and grant database
Responsibility for Data Collection	UTGFS/PCU
Indicator Name	Direct cash transfer recipients
Definition/Description	Total number of households receiving direct cash transfers from the project.
Frequency	Every 6 months
Data Source	Social registry and related information system
Methodology for Data Collection	Running database reports
Responsibility for Data Collection	UTGFS/PCU



Indicator Name	Productive cash transfer recipients
Definition/Description	Total number of households receiving productive cash transfers from the project.
Frequency	Every 6 months
Data Source	Progress reports/PDAZAM M&E system
Methodology for Data Collection	Social registry and related information system
Responsibility for Data Collection	UTGFS/PCU
Indicator Name	Grants for PIPs
Definition/Description	Total number of grant decisions approved for financing by the project as Productive Investments Projects (PIPs).
Frequency	Every 6 months
Data Source	Deconcentrated offices of MA and PCU
Methodology for Data Collection	Grant monitoring database
Responsibility for Data Collection	PCU



Indicator Name	Farmers adopting improved agricultural technology
Definition/Description	
Frequency	Every 6 months
Data Source	Progress reports/PDAZAM M&E system
Methodology for Data Collection	Survey
Responsibility for Data Collection	PCU
Indicator Name	Farmers adopting improved agricultural technology - Female
Definition/Description	
Frequency	Every 6 months
Data Source	Progress reports/PDAZAM M&E system
Methodology for Data Collection	Survey
Responsibility for Data Collection	PCU



Indicator Name	Productive infrastructure completed and used by beneficiary community as a result of the project.
Definition/Description	Productive infrastructure involving community based land, soil and/or water conservation works and basic warehouses, input supply stores and market facilities, which are completed as a result of the project and effectively used by beneficiary communities.
Frequency	Every 6 months
Data Source	Deconcentrated offices of MA and Directorate of statistics, progress reports, PDAZAM M&E system.
Methodology for Data Collection	Engineering reports with photographs and GPS referencing of sites; site visits to ascertain effective use.
Responsibility for Data Collection	PCU
Indicator Name	Area directly protected or recovered as result from investment of productive community infrastructure made by the project
Definition/Description	Measurement in hectares of the total land area which has been protected or recovered through investments in productive community infrastructure supported by the project, such as soil and/or water conservation works and/or other protection works. "Land" is the terrestrial biologically productive system comprising soil, vegetation, and the associated ecological and hydrological processes.
Frequency	every 6 months
Data Source	Progress report/PDAZAM M&E System
Methodology for Data Collection	Engineering reports and GPS referenced photographs monthly
Responsibility for Data Collection	PCU



Indicator Name	Agricultural policies affecting dryland enforced as a result of the project policy notes
Definition/Description	Number of policies revised or newly adopted as a result of policy notes produced with assistance from the project, which bear direct relevance for the drylands
Frequency	Yearly
Data Source	CPS & Directorate of statistics
Methodology for Data Collection	Adoption of actual policies
Responsibility for Data Collection	CPS and deconcentrated office of the Ministry of agriculture and PCU



ANNEX 1: DETAILED PROJECT DESCRIPTION

1. **The major farming systems of the drylands in Mali are defined by their socioeconomic and agroecological conditions, and their irrigation potential.** Mali's territory encompasses three natural zones: (a) the southern cultivated Sudanese zone, with an average annual rainfall of 1,400 millimeters; (b) the central semi-desert Sahelian zone, with average annual rainfall of 200 to 550 millimeters; and (c) the northern desert Saharan zone, covering about two-thirds of the territory and with average annual rainfall of less than 125 millimeters. The semiarid Sahelian and dry sub-humid areas of Mali specifically targeted by this Project experience strong inter-annual and interdecadal climate variability. The region also has a high exposure to dry spells and drought, and over the last 50 years there has been significant land degradation, which exacerbates impacts of extreme climate events. High levels of poverty, climate-dependent livelihoods, gender inequalities and the lack of social safety nets, combined with the population's low asset base, accentuate vulnerability to drought, flooding, and heavy rainfall events that are increasingly impacting this area. Changes in land use caused by population pressure, degradation of forests and rangelands, and policy directives on resource management have exacerbated vulnerability to drought. Herder-farmer conflicts are also increasing as pastoralists and farmers compete for land and water. The project areas have been selected based on:

- (a) Consultations and discussions with government officials, representatives of rural communities, and officials from regional and international organizations involved in the development of dryland agriculture and livelihood improvements in arid areas;
- (b) The review of various documents including the mapping of districts ("cercles") and communes conducted to determine Mali's Country Resilience Priorities (2018–2025) within the AGIR²⁰ Framework;
- (c) Key features of the four regions in the Sahelian zone as captured by indicators related to (i) the structural nature of vulnerability and poverty; (ii) the rate of prevalence of food and nutritional insecurity; (iii) occurrences of climate-related shocks (drought, floods) and the state of degradation of natural resources; and (iv) the existence of opportunities to increase production, productivity, and income; and
- (d) The level of intervention of Technical and Financial Partners²¹ and the potential synergies and complementarities possible with ongoing IDA-financed projects.

2. **There are 6 million people classified as moderately to extremely vulnerable to food and nutrition insecurity in the four semiarid regions of Kayes, Koulikoro, Segou, and Mopti.** In the context

²⁰ Launched in Ouagadougou in December 2012, AGIR is a framework that helps foster improved synergy, coherence, and effectiveness in support of resilience initiatives in the 17 West African and Sahelian countries. The Alliance is placed under the political and technical leadership of the Economic Community of West African States, the West African Monetary and Economic Union, and the Permanent Interstate Committee for Drought Control in the Sahel, and is based on existing platforms and networks. Building on the "Zero Hunger" target within the next 20 years, the Alliance is neither an initiative nor a policy. It is a policy tool aimed at channeling efforts of regional and international stakeholders toward a common results framework. As of March 2018, Mali's Country Resilience Priorities (2018–2025) are being validated by the Grievance Redress Mechanism.

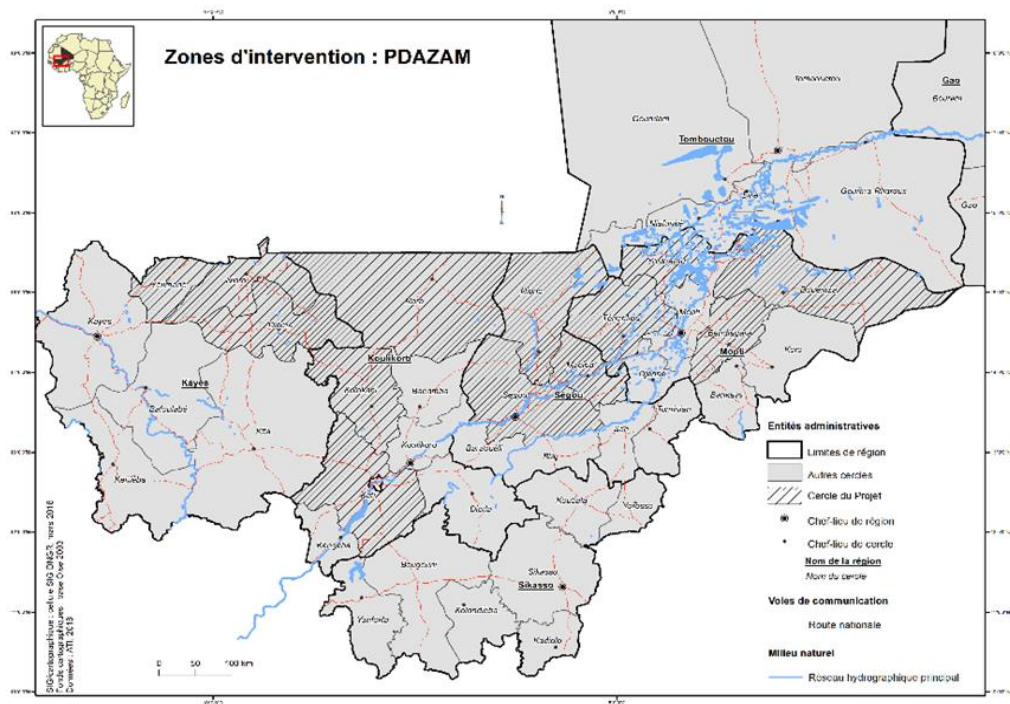
²¹ As reported in "*Répertoire 2016 des Projets et Programmes du Secteur du Développement Rural, Edition 2017*," Cellule de Planification et de Statistiques du Secteur du Développement Rural, Ministry of Agriculture, Ministry of Livestock and Fisheries High Council on Food Security, Bamako.



of the Global Alliance for Resilience (AGIR) in Mali and the preparation of the Country Strategic Plan (2018–2025), a methodology for mapping areas most vulnerable to food and nutrition insecurity was developed, and maps at the level of the communes were prepared according to various dimensions of vulnerability to food and nutrition insecurity. This methodology identified communes according to the degree of multidimensional vulnerability as captured by indicators related to three strategic dimensions: (a) livelihoods and social protection, (b) nutrition, and (c) agricultural productivity and incomes.

3. **There are several ongoing development initiatives in the semiarid areas of Mali.** The African Development Bank-financed Regional Program on strengthening resilience to food insecurity (P2RS), intervenes in several districts of Kayes, Koulikoro and Segou. Various IDA-financed projects (the Sahel Irrigation Initiative Project for irrigation, the Rural Mobility and Connectivity Project for rural roads, the Reconstruction and Economic Recovery Project for emergency infrastructure, and the Jigisemejiri Project for safety nets) have activities in districts of the Kayes, Koulikoro, Segou and Mopti regions. This project will seek synergies with these initiatives including through the proposed institutional and implementation arrangements. For example, the Project will direct some of the initial activities to cover communes targeted by Phase 1

of the Rural Mobility and Connectivity Project (PAAR, P160505). The rehabilitation of rural roads in the districts of Kolokani and Kati in Koulikoro Region to be funded by the later phases of PAAR will be synchronized with the agricultural productivity enhancements and community infrastructure to be financed under the Project.



Map A 1: Districts selected for project implementation

4. The selection of the districts to be included under the Project was informed by the combination of the AGIR multidimensional mapping of vulnerability and an analysis²² of the potential and opportunities to increase production, productivity and incomes in the four regions targeted by the Project. The following 12 districts will be included under the Project: the districts of Diema, Nioro, and Yelimane in Kayes; Kati, Kolokani, and Nara

²² The analysis was conducted by the GoM project preparation team based on Ministry of Agriculture data collected at the regional level for Kayes, Koulikoro, Segou, and Mopti. The agricultural potential was based on (a) population, (b) irrigation potential, (c) land suitable for agriculture, (d) actual production for the 2016–2017 campaign based on 2016/2017 Agricultural Census data, and (e) estimation of pastureland.



in Koulikoro Region; Bandiagara, Douetza, Tenenkou, and Youwarou in Mopti Region; and Niono and Segou in the Segou Region (see map A.1).

5. The phasing in of these 12 districts will also be based on the levels of insecurity. A phased approach will be used whereby the Project will start in Koulikoro and Kayes and then be rolled out in six-month intervals to the other regions (Segou and Mopti), based on the evolution of the security situation. By year two or three of project implementation, it is expected that all regions would be covered by the Project.

Component 1: Improving the productivity and resilience of beneficiary populations (US\$35.0 million, of which US\$32.5 million from IDA and US\$2.5 million from beneficiaries)

6. The objective of this component is to (a) enhance the resilience of poor and vulnerable households by providing combined interventions to raise consumption and to cope with seasonal shocks, and to provide them with opportunities to achieve sustained improvement in living conditions; and (b) increase agricultural productivity of farmers and groups of farmers. This component builds on the experience of the Jigisemejiri Project that, in addition to building the social registry and providing cash transfers, promotes behavioral changes and disseminates agriculture sector innovations by promoting new, more productive crops and production techniques. This component will support the expansion of the Jigisemejiri Project while simultaneously adapting it to address the specific needs of rural households in the dryland areas. The component is divided into three subcomponents as follows.

Subcomponent 1.1 Expansion of the Social Registry (US\$2.5 million, 100 percent IDA)

7. This subcomponent will support the development of the social protection system and its social registry, as well as the development of the Unified Social Register (*Registre Social Unifié*, RSU) and related information systems that are used to monitor and evaluate Subcomponent 1.2 implementation.

8. The RSU is maintained by the Jigisemejiri Project in collaboration with the MSAH, and already holds information on approximately 74,845 households across the country, reaching more than 400,000 individuals. The RSU offers the poor and vulnerable access to several interventions. Currently, the RSU allows (a) the provision of cash transfers; (b) access to the Medical Assistance Plan (*Régime d'Assistance Médicale*, RAMED) card, which offers free health care; and (c) access to the Interprofessional Mutual of Mali (*Mutuelle Interprofessionnelle du Mali*, MIPROMA), which provides enrollment in health insurance programs to support the government's objective of achieving universal health coverage for the Malian population.

9. This subcomponent will expand the reach of the RSU to add approximately 20,000 households in the project area and enlarge its scope to add poor and vulnerable households living of subsistence agriculture in Kayes, Koulikoro, Segou and Mopti by 2020. Enrollment in the RSU is a prerequisite for participating in the activities described in Subcomponent 1.2. The Technical Unit for the Management of Social Safety Nets (UTGFS) of the Jigisemejiri Project will be responsible for overseeing implementation of all the activities under this subcomponent.

10. Financing will be provided for the setting up of an Information, Education and Communication Campaign for the RSU, monitoring and evaluation procedures, training programs at the central and regional level and studies as needed. The UTGFS will also prepare an annex to the PIM that will describe in detail the processes and procedures involved in the implementation of the proposed activities.

11. Institutional and implementation modalities for identification of beneficiary households under



subcomponent 1.1 will be based on ongoing experience with the RSU and MSAH, which will manage the registration process in collaboration with the UTGFS and the decentralized structures, using the Jigisemejiri processes at the local level.

Subcomponent 1.2 Direct cash transfers and productive transfers (US\$16.0 million, 100 percent IDA)

12. To better mitigate current poverty and vulnerability and to cope with, recover from and adapt to the multiple shocks and recurrent crises affecting the drylands (drought, desertification, floods, conflicts, economic shocks, diseases, and so forth), the poorest households need to protect their consumption levels and livelihoods, and diversify their sources of income to accumulate productive assets.

13. This subcomponent will finance (a) direct DCTs; and (b) PCTs following the current Jigisemejiri model and the FAO Cash+ initiative, where cash transfers are combined with productive inputs and/or technical training and extension services to boost the livelihoods and productive capacities of poor, vulnerable men and women. The combination of direct DCTs with PCTs is a flexible tool for promoting resilience. By providing DCTs and agricultural inputs, assets and/or training on good agricultural practices (include climate smart practices), the Project will enable beneficiaries to address their immediate needs while supporting their livelihoods and productive capacity. The combined interventions can have a powerful impact, including improving household agricultural production, income generation, asset ownership, economic empowerment and dietary diversity and food security.

14. Direct DCTs of CFAF 15,000 per household per month will be provided to 12,000 eligible households for 36 months. Predictable transfers allow households to plan and invest in the future, particularly in livelihood investment. Regular transfers combined with activities that promote savings and information on Nutrition-Sensitive Agriculture contribute to improved nutritional status in the long run and to improved livelihoods. Moreover, transfers also help households acquire productive agricultural assets. Transfer beneficiaries will be selected using the same targeting approach employed by the Jigisemejiri Project, which combines geographic and community-based targeting. In areas where demand is larger than what the project can cover, a proxy means test developed for the Project can be used to support the selection of beneficiaries.

15. The DCTs will be complemented by PCTs to qualifying families to acquire input kits, livestock, or small equipment to support agricultural production and resilience. PCTs of CFA 250,000 (US\$450) will be distributed in two or four installments to some 10,000 beneficiaries interested in, and capable of, running small productive activities. As such, the Project seeks to enable both small and subsistence agricultural producers and poor and vulnerable households enrolled in the Social Registry to be more productive. The selection of beneficiary households will be made following the current Jigisemejiri approach using community targeting, since communities are better positioned to identify the households/individuals that would benefit from such activities. A detailed description of this Project's subcomponent will be included in the PIM.

16. The participation of women in the subcomponent will be strongly encouraged, since women are traditionally involved in small-scale income generating activities and are economically marginalized in rural areas. It is estimated that a minimum of 65 percent of eligible activities would be in the fields of subsistence or small agriculture, commerce, aviculture, and transformation, which are dominated by women. Small cooperatives comprising poor and vulnerable individuals may also be supported through this subcomponent to maximize investments and reinforce mutual support mechanisms. Productive cash transfer approval will be given based on simple activity plans, for which qualification criteria will be defined in the PIM. Beneficiaries can receive (a) training for the preparation of activity plans and other



technical skills, (b) communication and mentoring to support implementation and boost their self-confidence and social capital, and (c) financial literacy training to improve their income management and encourage them to save in anticipation of future shocks.

17. *Institutional arrangements for Subcomponent 1.2* will be those of the Jigisemejiri Project. The UTGFS will be responsible for implementation of the activities. The other stakeholders include (a) the decentralized services of the MSAH, (b) communal and village committees for the identification of the beneficiaries, (c) accredited payment agencies that are contracted for payments to beneficiaries, (d) and NGOs that will be contracted for implementation of accompanying measures.

18. This arrangement takes advantage of the UTGFS experience at the national, regional, district and commune levels. The UTGFS will manage the beneficiary

lists, the RSU, and the payments. Participation will be based on the submission of an application form. The committees selecting beneficiary households for cash transfers are also responsible for the evaluation of the productive cash transfers' applications, and payment of productive cash transfers will be done according to the same procedure as that used for direct cash transfers. Benefits of both direct and PCTs will be delivered using the same accredited payment agents²³ of the Jigisemejiri Project, and the PIM that will describe in detail the processes and procedures involved in implementation of the proposed activities.

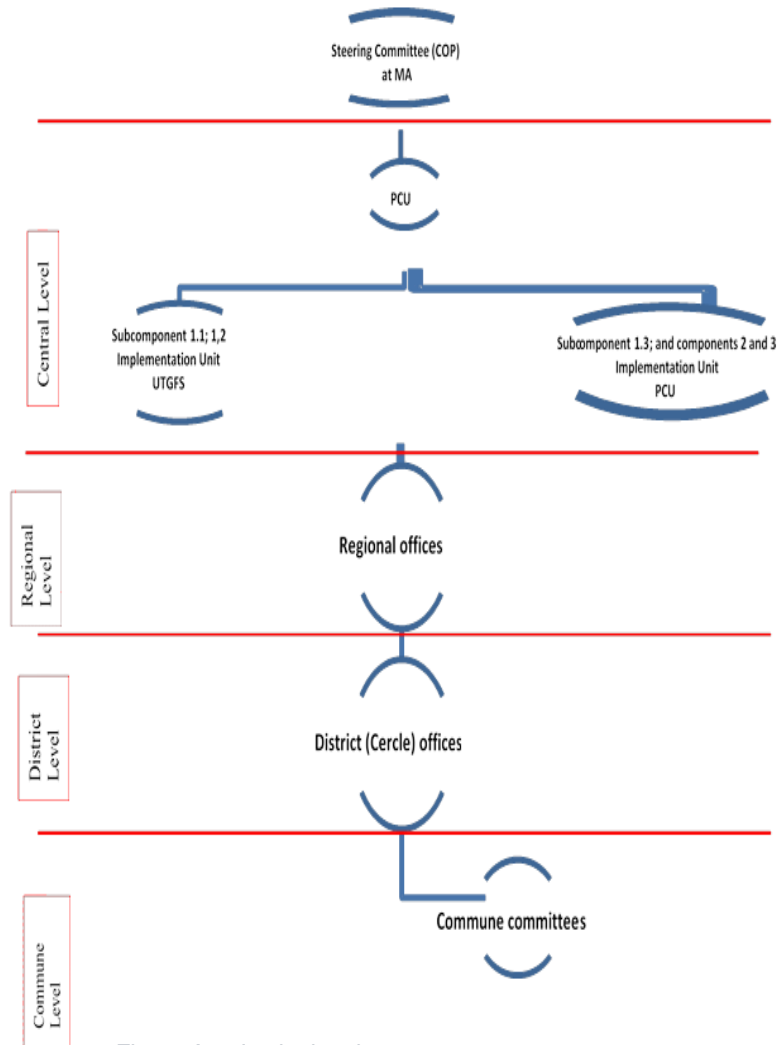


Figure A 1: Institutional arrangements

²³ Paying agents are pre-qualified NGOs, micro-credit institutions, Banks, and mobile operators that are approved as agents under contract with UTGFS.



Subcomponent 1.3 Promotion of emerging high-value crops value chains (US\$16.5 million, of which US\$14.0 million from IDA and US\$2.5 million from beneficiaries)

19. The main objective of this subcomponent is to increase the production from emerging high-value crops value chains to meet national and regional market demand while generating higher incomes for value chains actors as well as employment opportunities.

20. These emerging value chains have been identified and prioritized during PNISA preparation. A dialogue was established to identify development priorities and constraints faced by actors. A diagnostic of main and emerging “filières” (value chains) is an integral part of the PNISA Document (2014). These emerging value chains in the project areas of Kayes, Koulikoro, Segou and Mopti include Arabic gum, sweet potatoes, cassava, sesame, jatropha, jujube, fonio, Guinea sorrel (hibiscus or bissap), and cowpea (niebé). They have great potential to be promoted in the project areas to help diversify agricultural production and move from subsistence production to more commercial agriculture. This subcomponent addresses the need for more private investments in the different points of the value chains.

21. The subcomponent will finance (a) technical assistance to update knowledge on and/or identify promising high-value crop value chains with great potential in the project area, as well as constraints impeding the development of these selected value chains; (b) technical assistance for the preparation of business plans for investments in production, transformation and marketing; and (c) a grant program financing PIPs defined in the above developed business plans. The beneficiaries would be producer groups.

22. Qualification for the grant program will be through an application in response to calls for application involving the submission of a business plan the format of which will be defined as part of the Grant section of the PIM. The detailed selection process and criteria, including impact on the local economy, the financial viability of the proposed investments, and the likely sustainability of the proposed activity, will be described in the Grant section of the PIM. Financial literacy training will also be provided to beneficiaries of PIPs to improve income management and encourage savings to withstand crises.

23. Grants will co-finance PIPs along the value chains to alleviate the constraints impeding the effective emergence of these value chains. Such investments could include improvement in grading, storage, the cooling chain, and packaging, especially in the case of horticultural produce, seeds and seedlings, plantations, processing equipment, marketing, small rehabilitation of facilities to comply with minimal sanitary production requirements, technical assistance (extension services, technology transfer), or business development (management, accounting) or digital solutions and applications for agriculture. The maximum grant amount would be CFAF 10 million (US\$20,000) in cash, with a minimum beneficiary contribution of 15 percent of the total cost of investments to implement the business plan.

24. This subcomponent will be implemented directly by the PCU in collaboration with the regional project offices. The PCU will be responsible for managing the grant mechanism for PIPs and developing a grant reporting database for that purpose.

25. *Beneficiary eligibility.* Organized groups such as cooperatives, producer organizations, organized groups of women or youth, would be eligible to benefit from project support for the preparation, implementation, and monitoring and evaluation of PIPs. The project will positively discriminate applications coming from women and women’s groups and youth groups.

26. The national PCU, with the support of each Regional Office, will establish a database for service



delivery entities at the regional level and selected “cercles,” and will contract them to (a) disseminate information on project interventions, eligible activities, and funding mechanisms; and (b) assist potential beneficiaries in the formulation of their applications and business plans. The selection and approval process for eligible PIPs and the related grant financing will be detailed in the grant section of the PIM. The PCU will have fiduciary responsibility for the subcomponent.

27. At the level of each regional office, an Approval Committee will be established across the region to review and approve grants in line with provisions defined in the Grant section of the PIM. These committees will be chaired by the Director of the Regional Agriculture Directorate and comprise of representatives from professional agricultural associations, chambers of regional agriculture, and technical services of the Ministries of Agriculture. The details will be specified in the Grant section of the PIM.

Component 2 – Productive infrastructure at the community level (US\$17.00 million, 100 percent IDA)

28. This component will support investments in community infrastructure that will aim at improving the environmental, physical and socioeconomic context for dryland agriculture, and create synergies with activities to boost agricultural productivity and strengthen resilience envisaged under Component 1. The prioritization of this infrastructure has been done through the preparation of the local PDSECs. Investments would support, among other things, soil conservation activities and erosion control, soil fertility management, dune fixation and stabilization, and protection of river-banks; management and rehabilitation of water harvesting infrastructure; and small-scale irrigation. The component will also support improvements in accessing markets for both agricultural inputs through input stores and warehouses, and improved storage and marketing through grain banks and upgraded marketplaces.

29. *Identification and selection of infrastructure.* The selection of sites to be developed in each region is the result of the multiyear planning carried out by the Regional Direction of Rural Engineering and it is reflected in the local PDSECs. The selection of sites is validated by the National Directorate of Rural Engineering and by the commune and districts. The PCU will hire technical assistance as necessary to conduct the detailed technical studies for the infrastructure to be financed, and coordinate with the deconcentrated technical services of the Rural Engineering Directorate based on a collaboration agreement.

Subcomponent 2.1: Selection and preparation of investments (US\$1.50 million, 100 percent IDA)

30. *Information and awareness campaign.* As a first step, the main actors implementing the Project including the PCU and its regional offices along with the regional committees will carry out an information and awareness campaign on project activities. These sessions are intended to provide beneficiaries with detailed information on the project objectives and activities, areas of intervention, eligibility, conditions for access to funding, scheduling, the ceiling for funding, constitution of the subproject file and so forth.

31. *Identification and selection of subprojects.* The selection of the sites to be developed in each region is the result of a multiyear planning exercise as reflected in the local Economic, Social and Cultural Development Programs (PDSECs). The selection was undertaken by the Regional Rural Infrastructure Department (Direction Régionale du Génie Rural, DRGR) in close consultation with decentralized technical services in the rural sector. The final selection of sites to be developed will be validated by the local communes and districts. In doing so, it must hold a deliberation meeting and certify in signed minutes of the meeting that the sites in question are not subject to any litigation and that they are registered in the



municipal plan of development and land use. Following this phase of site identification, these sites will have to be the subject of technical studies if technical designs are not available.

32. *Support for the preparation of regional and local climate change adaptation plans.* The Project will support the development and implementation of Communal Climate Adaptation Plans (*Plans Communales d'Adaptation au Changement Climatique*, PCA) in the project area of intervention. The PCAs will identify the priority investments needed to make rural livelihoods and ecosystems in the PDAZAM intervention zone more resilient to the adverse effects of climate change. The Project will work closely with the territorial authorities (regions, districts, and communes), producer organizations, the decentralized services of the MA, and all the operators intervening in the project area. The PCA development process is conducted in the communes with the participation of all development actors and will be prepared by specialized service providers who have experience in developing such plans. The PCAs will be prepared by specialized services providers and are then collated and summarized into the PDSECs. They will contain the following main information: (a) the results of the diagnosis and participatory mapping of vulnerability to climate change; (b) analysis of the feasibility of collective adaptation investment needs expressed by villages and municipalities; and (c) a communal program of priority investments to strengthen the resilience of rural populations to climate change. The PCAs will be validated in a process of restitution workshops at the regional level attended by local communities, including municipalities, project teams, decentralized technical services of the state, producer organizations, and NGOs.

33. *Development study of the Vallée du Serpent.* The Vallée du Serpent is a vast area extending in the Sahelian belt over the territories of three regions, Kayes, Koulikoro, and Segou. It is a fossil valley once watered by the ancient tributaries of the Niger and Senegal Rivers. This valley has substantial agro-pastoral potential the valorization of which is hampered by the precariousness of water resources, especially during the dry season. In recent decades, the effects of climate change have rendered any development in this vast plain virtually impossible. However, it contains many natural depressions constituting, during the rainy season, intermittent seasonal water points. These points dry up at the end of rains, forcing pastoralists to abandon rich pastures until the next rainy season returns, thus never fully exploiting the grazing potential. Better mapping of the hydrology and geology and an in-depth diagnosis of current activities could provide information about potential development of the valley. The study will be financed by the Project, and the terms of reference will be developed once project activities start.

Subcomponent 2.2: Productive infrastructure investments (US\$11.0 million, 100 percent IDA)

34. This subcomponent will finance the infrastructure investments selected under Subcomponent 1.2 as described above. A number of these investments support activities typically favored by women and also help in improving their access to markets.

35. *Development of small irrigated perimeters.* Small household plots for surplus production for sale on the market (small irrigated perimeters) by women are solicited in almost all the villages in the PDAZAM project areas. These household plots can be located around water points (large-diameter wells or boreholes) generally equipped with mechanical hand pumps or other pumping technology. The combined perimeter area of these plots varies from 1.0 hectare (ha) to 5.0 ha, depending on the size of the beneficiary group and the capacity of the water source. The perimeter will have to be fenced to protect the plots against roaming farm animals. Each perimeter will be the subject of a technical study comprising all the technical and socioeconomic aspects to guarantee the sustainability of the investment and compliance with safeguards requirements.



36. *Development of lowlands.* Many communities in the project area have significant potential to capture small, seasonal streams to supply lowland areas with water. In many of these areas, growers have experience in lowland farming, during both the rainy season and the cold off-season (for vegetable production). The developments will consist of small water retention works made of rubble masonry that allow for the supply of water to relatively sizable areas, that are then cultivated by groups of women and young people in the villages. The cost of lowland development varies greatly depending on the sites and objectives of the development. Under this subcomponent, the development of approximately 1,000 ha is envisaged on about 50 sites of 20 ha each. An inventory of lowland development sites has already been conducted by the deconcentrated structures of the National Directorate of Rural Engineering, and some technical studies are available for some sites.

37. *Pond landscaping.* Many potential pond development sites exist in the PDAZAM project area. These ponds are used for livestock watering and for fish farming or cold season vegetable production by groups of women and young people. The development of ponds usually consists of excavation to increase retention capacity (water storage volume) while ensuring a better seal of the bottom of the pond to reduce seepage losses. Under this subcomponent, approximately 12 ponds would be built. The selection of sites to be developed will be made in accordance with the provisions of Subcomponent 2.1.

38. *Landscaping.* In most of the communal territories of the project area, the upper edges of the watershed areas are subject to degradation, thus compromising agricultural production of the lower lands. To reverse this trend, the subcomponent will finance land conservation works on slopes to facilitate the restoration of their soil cover through Labor-Intensive Work Program (THIMO) actions. The soil and water conservation activities (stone bunds, filter dams, half-moons, and so forth) on these slopes can mitigate and reverse the degradation process of land resources within the limits of communal territories. It is envisaged that, under the Project, approximately 1,500 ha of these different types of soil and water conservation works will be developed.

39. *Fencing / Assisted Natural Regeneration.* Defensive actions such as fencing and assisted natural regeneration are important in the drylands for the restoration of degraded areas. Research bodies have developed techniques well adapted to the conditions of the project area. The Project will finance the adoption of those techniques in the project area, with the support of NGOs with which collaboration agreements will be established. About 500 ha of protection and natural regeneration will be developed with the involvement of beneficiary populations.

40. *Arrangements for implementation of Productive investments.* Specialized Operators will be selected through a tendering process to coordinate and oversee implementation of this subcomponent. The PCU will contract entities for conducting studies and supporting beneficiaries in the preparation of proposals. The proposals involving irrigation will be evaluated and will be financed by a “bottom-up sharing” mechanism by referring to the procedures of the National Proximity Irrigation Program and the framework of the National Agricultural Water Control Policy. Soil and water conservation and natural resource management will be selected by a similar approach in accordance with the national policies and programs of the Ministry of Environment and Sustainable Development and the Ministry of Water and Forests. The PCU will be responsible for recruiting the firms that will carry out the work at the community level. The National Directorate of Rural Engineering of the MA, in coordination with the regional coordination offices and collaboration with the regional environment, water and forestry departments will be responsible for monitoring and evaluating this component. Efforts will be coordinated with the UTGFS to ensure that communities can benefit from experience of the social protection program and from coordination of any community works programs.



Subcomponent 2.3: Commercialization investments (US\$4.5 million, 100 percent IDA)

41. This subcomponent will finance the construction of public infrastructure to ensure safe storage of inputs and harvests as well as marketing facilities to improve trade of surpluses. These investments will cover food storage, warehouses, grain banks, input shops, and rural markets that will both reduce the vulnerability of communities to temporary food shortages and help improve the marketing of production surplus.

42. *Construction of cereal banks.* Cereal banks are important instruments contributing to the food security of the production areas by purchasing surplus production at the producer level and storing it at the village level to ensure sale during the lean season. A management committee (*comité de gestion*) organizes the yearly campaign to restock the bank. The Project therefore envisages the construction of about 55 cereal banks in the villages of the project area. Given that these facilities are mainly an instrument to shield the community from food shortages at the end of the dry season, these facilities will be built with public funding but become community property managed by and for the community without objective of cost recovery.

43. *Storage warehouses.* About 50 potential communities have been identified to have warehouses and storage facilities built for a variety of agricultural products. A study will be conducted to estimate volumes of potential production and trade to verify the viability of such facilities. These facilities will be managed by the village groups and will help with the conservation of surplus production to market at better prices after harvest.

44. *Farm input shops.* Dryland areas remain underserved by private or collective facilities where farmers can acquire quality certified inputs. This situation makes inputs very expensive and difficult to access in a timely manner during sowing season, affecting productivity of crops. To alleviate these difficulties, the Project envisages the construction of about 70 agricultural input shops in the area. The facility will be sublet to a trader or operator who will run the facility to provide services to the community.

45. *Rural markets.* The Project will support marketing with the construction and/or rehabilitation of rural markets. The construction and/or rehabilitation of about 25 rural markets is planned, but the final number will be confirmed during consultation with communities.

46. *Implementation arrangements for commercialization investments.* The PCU will contract Specialized Operators through a tendering process for the construction of the market infrastructure (marketing, storage, and rural markets). Work will begin based on the government's definition of infrastructure management mechanisms, and the selection of an operator (public, private) responsible for the management of these infrastructures. The mechanisms rely on contractual agreements between the owner and operator and will define the criteria for management of the facilities including how operating costs are covered. Approval Committees will be established across the region to review and approve infrastructure investments. These committees will comprise representatives of the community, the directorates of the MA, the professional agricultural associations, regional chambers of agriculture, technical services of the MA and ministry departments in charge of investment, industry and trade, and a representative of the Regional Development Agency. The only investments that will be financed under the Project are those that as part of the feasibility have a business plan that verifies quantities to flow through these facilities and that have an agreed mechanism in place to ensure a financial flow to secure the operations and maintenance of the facility.



Component 3: Agricultural policy support, crisis management, and project management (US\$12.50 million of which US\$10.5 million from IDA and US\$2.0 million from the Borrower)

47. This component will aim at improving skills of policy makers at the local and national level, involved in agricultural policy and planning formulation and support for agricultural policy development in line with the project development objective. It will have a provision for a Contingency Emergency Response Component (CERC) and will finance institutional strengthening activities necessary for project implementation and project institutions and stakeholders.

Subcomponent 3.1: Creating capacity for evidence-based agricultural policy analysis (US\$3.0 million, 100 percent IDA)

48. Agricultural policies must be based on solid empirical evidence and analysis. The GoM has committed to take a series of measures to improve the overall performance of the agriculture sector including an Agricultural Public Expenditure Review.²⁴ This reflects the understanding that the implementation of agricultural strategies, plans, and policies, and improvements in sector performance, require strong capabilities in planning, monitoring and evaluation, and statistics.

49. To this end, the Project will support the establishment and operation of a new Agricultural Policy Support Unit (APSU) within the MA. The role of this unit would be to analyze agricultural sector data and to develop policy recommendations based on that analysis. The unit will also serve as a data source for other institutions wishing to conduct their own research on agricultural policy. The objectives of this unit are to provide timely policy recommendations in response to short-term challenges in the agriculture sector, to conduct in-depth analysis for generating policy options to address medium and long-term challenges, and to monitor policy implementation and evaluate policy impacts and relevance.

50. The Project will finance training activities, collaboration agreements with technical structures involved in agricultural policy analysis, short-term technical assistance, and modern information and communication technologies to connect the unit to regional, national and global information sources. It will build the capacity of MA staff and other structures involved in the design, implementation, monitoring, evaluation, and analysis of agricultural policies by offering at least five Agricultural Economics Graduate Fellowships to study abroad in programs known for their expertise in arid and semi-arid environments. It will conduct in-depth analyses for generating policy options in collaboration with the Agriculture Chambers Federation (*Assemblée Permanente des Chambres d'Agriculture du Mali*), the Rural Economy Institute (*Institut d'Economie Rurale*), the Rural Polytechnic Institute (*Institut Polytechnique Rural de Formation et de Recherche Appliquée*), the Agricultural Market Observatory (*Observatoire du Marché Agricole*), and the High Council on Food Security (*Commissariat à la Sécurité Alimentaire*). Coordination and synergies in the planning and funding of activities will be sought with the 2018-2020 EU-funded program on agricultural and nutrition policy/programs focusing on statistics capacity strengthening²⁵.

²⁴ The World Bank provided support for the CPS/SDR in 2017 for conducting an Agriculture Public Sector Review Lite, with help from FAO Monitoring of the African Food and Agricultural Policies Initiative.

²⁵ The EU supports Mali as part of its Sector Reform Contract in Food and Nutrition Security and Sustainable Agriculture (*Contrat de Réforme Sectorielle dans le Secteur Sécurité Alimentaire et Nutritionnelle et Agriculture Durable, CRS/SANAD*) » funded by the 11th European Development Fund for Mali in the amount of EUR 50 million over 2018-2020. This program includes: (i) a direct budget support and (ii) technical assistance (TA) to strengthen policy/program monitoring and evaluation, public finance management and improving the governance of the agriculture sector. The project aims to make available high-quality agricultural



51. APSU outputs will address the information needs of policymakers at different levels on various thematic issues including crop outlook reports, status and outlook reports on seeds, fertilizers, irrigation, pesticides and energy, status on technology adoption by farmers, estimate of input-output relationships and farmer's response to output prices, and reports assessing the effectiveness of agricultural public research and extension services and investments programs.

52. *Arrangements for support to the Ministry of Agriculture and other partners.* The PCU will be responsible for overseeing implementation of all the activities proposed under this subcomponent. International and local consultants will be contracted to provide technical assistance to conduct studies, deliver trainings, and conduct workshops organized by the ministries, administrations, and local authorities concerned. Funding of activities and monitoring of impacts will be managed directly by the PCU.

Subcomponent 3.2: Contingency Emergency Response (US\$0 million)

53. This subcomponent establishes the Contingency Emergency Response Component (CERC) of the Project, to be activated if a severe and eligible crisis strikes the livelihoods of people living in the project area. The CERC will be established and managed in accordance with the provisions of World Bank OP/BP 10.00 (Financing of Investment Projects), paragraphs 11, 12, and 13.

54. The Project's CERC will be triggered only when the government has officially declared an emergency and a statement of the facts is provided justifying the request to activate the use of emergency funding. If the Bank agrees with the determination of the disaster and associated response needs, this subcomponent allows the government to request the Bank to recategorize and reallocate financing from other project components to cover emergency response and recovery costs. Disbursements would be made against a list of critical goods or procurement of works and consultant services required to support immediate response and recovery needs.

55. A specific Emergency Response Operations Manual will apply to this CERC component that will include detailed operational guidelines for implementation and its approval by the Bank will be a disbursement condition for this subcomponent. In case of a declared emergency, the PDAZAM will collaborate with key institutions involved, notably (a) the CSA for the preparation of contingency plans, (b) the ministry in charge of decentralization for support to municipalities, (c) the Early Warning System to work on crisis indicators, (d) professional organizations for setting up monitoring networks, and (e) FAO and specialized NGOs to train extension officers of the ATI and local offices in triggering and reading of emergency indicators.

56. *Arrangements for the CERC.* All expenditures under the CERC will be appraised and reviewed to determine if they are acceptable to the World Bank before any disbursement is made. Disbursements will be made against an approved list of goods, works, and services required to support crisis mitigation, response, recovery, and reconstruction.

Subcomponent 3.3: Project coordination (US\$9.5 million, of which US\$7.5 million from IDA and US\$2.0 million from the Borrower)

statistics for the design, monitoring and evaluation of policies and programs. The TA contributes to improving and strengthening: (i) the functioning and organization of the Planning and Statistics Unit (*Cellule de Planification et de Statistiques du Secteur Développement Rural, CPS/SDR*); (ii) the coordination of the M&E system and statistics across agriculture and rural development; skills and tools in planning, programming and budgeting; the quality and dissemination of statistical data, and the statistics system.



57. This subcomponent covers all activities and expenditures related to the management of the Project and its technical, financial and safeguards monitoring. To coordinate all the components entrusted to the technical services, NGOs, other agencies, and various service providers, and to ensure the responsibility for financial management, procurement, and monitoring and evaluation, a PCU will be set up for the national coordination of all the interventions within the ATI, which will report to the MA and be supported by a Regional Office at each of the Regional Directorates of Agriculture. The PCU, which will be established under ATI and will assume overall responsibility for the management of the Project, will include: (a) a National Coordinator (Director General of ATI), (b) a Technical Director, and (c) an administrative and financial manager. PCU staff will include a Rural Infrastructure Officer, an Institutional Development Specialist, an Agro-economist, an Environment and Natural Resource Specialist, a Procurement Specialist, a Financial Management Specialist, an Accountant, a Management Specialist, a Gender and Social Inclusion Specialist, a Monitoring and Evaluation Specialist, and an ICT Specialist. An internal auditor will perform the internal control functions of the Project. The national institutions responsible for implementing the activities will establish partnership agreements with this unit.

58. Given the nature of Subcomponents 1.1 and 1.2, a memorandum of understanding between the MEF and the MA will regulate the relationship between the PCU at ATI and the UGTFS. The UGTFS of the Jigisemejiri Project, based in Bamako, will be responsible for: (a) the coordination, close control, monitoring, and evaluation of all project activities to subcomponents 1.1 and 1.2; (b) the development of project activity programs and budgets to be agreed with the PCU; (c) drafting of memorandums of understanding or establishing partnership agreements with implementing partners; (d) all procurement under Subcomponents 1.1 and 1.2, including among other things the preparation and monitoring of agreements and contracts with service providers and contractors and the implementation of the procurement plan; (e) financial and accounting management, including submission of disbursement requests to IDA; and (g) preparation of financial statements and program activity reports.

59. There are multiple synergies and complementarities among the three components and within the subcomponents of the Project. Figure A1.2 shows the interactions among activities and the two-way relations between activities. There are also synergies and complementarities with other IDA-financed and other projects captured in table A1.1.



Figure A1.2: Synergies and complementarities among components of the Project

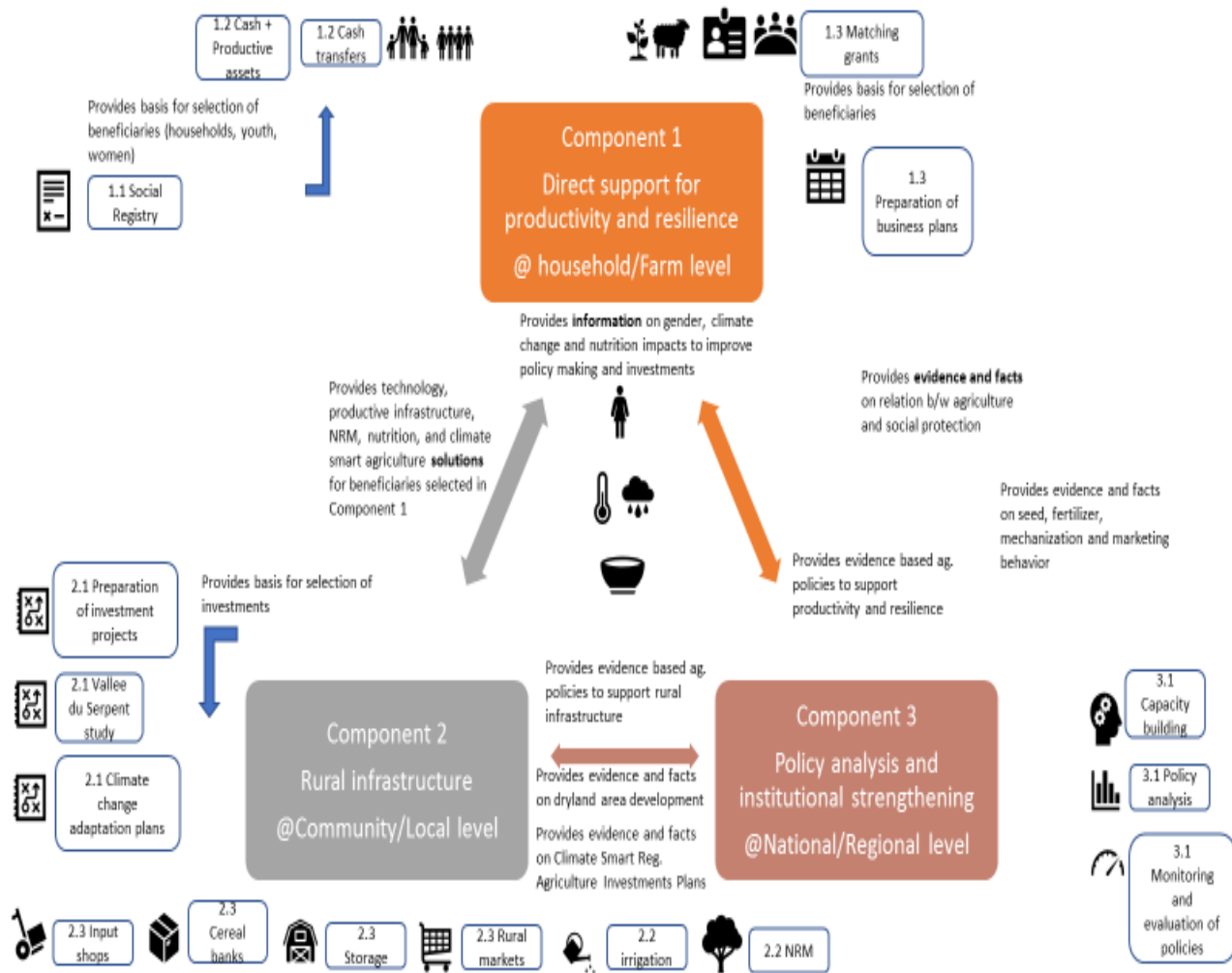




Table A1.1: Synergies and complementarities with World Bank and other externally funded agriculture projects

Project	Description	Synergy with PDAZAM
PRAPS–ML: Projet Régional d’Appui au Pastoralisme au Sahel pour le Mali (Regional Sahel Pastoralism Support Project–Mali)	IDA-funded. Sister project of PADEL-M focusing on pastoral (mobile) systems in Mali. Part of the regional PRAPS initiative (IDA). Cost: US\$45 million. Approval: FY2016. Duration: 6 years. End date: December 2021.	PDAZAM will affect the landscape of transhumant herders. It will be important to ensure that migratory routes and investments of the PDAZAM are coordinated and complementary.
WAAPP: West Africa Agricultural Productivity Program for Mali	IDA-funded. Support for agriculture technology development. US\$60 million (IDA), ending in December 2018.	WAAPP’s research and development of best practices will be fully integrated in PDAZAM activities.
PACAM: Projet d’appui à la Compétitivité Agro-industrielle au Mali	IDA-funded. Agro-industrial Competitiveness Support Project, focused on two value chains (mangoes and livestock) in the Sikasso, Bamako, and Koulikoro production areas. US\$30 million (IDA), approved November 2016, ending July 2022.	PACAM activities will be coordinated with PDAZAM as it relates to value chain development activities and possible lessons learned for horticulture and livestock.
SIIP: Sahel Irrigation Initiative Project	IDA-funded. Regional project will support irrigation initiative in 6 Sahelian countries. Cost: US\$198 million (IDA US\$170 million). Implementation: FY2018–23.	Joint interest between PDAZAM Subcomponent 2.1 and SIIP-Mali with regard to production crops in selected irrigated areas of Mali.
PAAR: Rural Mobility and Connectivity Project	IDA-funded. The project will rehabilitate about 1,700 kilometers of rural roads in Koulikoro (dryland zone) and Sikasso (southern zone) regions of Mali. IDA credit of 64 million euro (US\$70 million equivalent). Approval date: July 17, 2017.	PDAZAM does not finance rural roads. It will rely on the PAAR to access targeted areas for Component 1 and Component 2 activities. Programming of road links and productivity-enhancing activities will be done jointly between the two projects in selected “cercles.”
PADEL –M sedentary livestock support	IDA-funded. The project aims at increasing productivity of the sedentary livestock sector supporting farmers’ continuous investments in learning, innovation, new farm technologies, and agricultural productivity.	Synergy will be mostly in fodder production for intensive livestock systems.
African Development Bank/P2RS	AfDB-funded. Project is regional in scope. Covers 7 CILSS countries, including Mali. Being implemented in Kayes, Koulikoro, and Segou and Sikasso regions. Targeting vulnerable households and farmers. Project cost: 47.83 million euro for Mali (204.81 million euro for the Regional Program). Approval date: October 2014, effective February 2015, closing March 2019).	PDAZAM Subcomponent 1.2 and Component 2 will be closely coordinated with the AfDB project in “cercles” covered by both projects (Nioro, Diema, Kolokani, Nara, and Niono).
EU/11th European Development Fund-Mali/CRS-SANAD	Through the « Contrat de Reforme Sectorielle dans le Secteur de de la Sécurité Alimentaire et Nutritionnelle et Agriculture Durable », the EU provides a combination of budget support and technical assistance to reinforce M&E, strengthen public finance management and improve governance. Project cost: 50 million euro. Approval date: 2017. Period covered: 2018-2020.	PDAZAM Subcomponent 3.1 will complement and be closely coordinated with the EU support under technical assistance to the Ministry of Agriculture Planning and Statistics Unit (CPS).
USAID/Feed the Future	Feed the Future, the U.S. Government’s global hunger and food security initiative, increases agricultural and nutrition by delivering technology	PDAZAM Subcomponents 1.2, 1.3 and Component 2 will be closely coordinated in the Segou and Mopti regions with the Cereal



	and knowledge, and building local institutional capacity. The Phase I initiative (2012-2018) invests in three value chains in Mali in millet and sorghum, rice, and livestock (Total cost: US\$125 million). A Phase II for 2018-2023 is being prepared for Mali.	Value Chain (CVC) Program and the Mali Climate Change Adaptation Activity (MCCAA). PDAZAM Subcomponent 3 will be closely coordinated with the Innovation Lab for Food Security Activity.
Agence Française de Développement/PADER	Support Program for Regional Economic Development (Programme d'appui au développement économique des territoires ruraux des Régions de Ségou et Tombouctou, PADER). The program aims to strengthen the decentralization process in the regions of Ségou and Timbuktu. It focuses on the development of agricultural and pastoral activities. Approval date : October 2015. Total cost : 27 million euro.	PDAZAM Subcomponents 1.2, 1.3 and subcomponent 2.2 will be closely coordinated in the Segou region with PADER activities related to agricultural production, community conflict prevention and the capacity development of resilience through sustainable natural resources management.



ANNEX 2: IMPLEMENTATION ARRANGEMENTS

Project Institutional and Implementation Arrangements

1. The Borrower will be represented by the Ministry of Economy and Finance (MEF). The overall responsibility of project implementation, including management of environmental and social risk, will rest with the MA. The duration of Project implementation will be five years. The implementation arrangements will reflect the decentralized nature of activities on the ground and the close operational relationship with the ongoing Jigisemejiri Project.

Coordinating Bodies:

2. **Steering Committee.** At the national level, a project multi-sector Steering Committee (SC) will be set up to act as a higher-level guidance body that will meet semi-annually. It will oversee the Project, approve the Annual Work Plans and Budget (AWPB), as well as its progress reports, and ensure that the broader project objectives are being met. It will be chaired by the Minister of Agriculture or his/her representative. The secretariat of the Steering Committee will be provided by the Project Coordinator. The SC will be composed of representatives of the entities concerned with implementation of the PDAZAM at the MA and the MSAH level, the other ministerial departments in charge of economy and finance, livestock and fisheries, infrastructure and transport, environment and sustainable development, local development, territorial development, and rural professional organizations (including women's and youth's organizations) and civil society.

3. **Regional Coordination Committees (RCC)** will be established in each of the four regions covered by the Project. RCCs will meet quarterly and meetings will be chaired by the Regional Directorate of Agriculture and includes the Territorial Communities, and representatives of the MA/MSAH decentralized services and other ministerial departments involved in this Project, as may be required. They will provide feedback to the PCU as part of quarterly reporting. These committees will serve as steering bodies and oversee implementation of the Project at the regional level.

Management Bodies

4. **Project management and coordination.** At the national level, a Project Coordination Unit (PCU) within the Land and Irrigation Management Agency (ATI), which is under the tutelage of MA, will be responsible for coordinating and managing the Project in collaboration with the existing Jigisemejiri Project Implementation Unit (UTGFS), which is under the oversight of the MEF. The ATI is also implementing the Sahel Irrigation Initiative Support Project and as such has already some experience in managing Bank Financed projects and has a core staff dedicated to project management that will be supplemented as the PDAZAM becomes operational. The PCU will be responsible for overall management of the Project, including preparation of the annual work plans and budgets, financial management and procurement, general supervision of the implementation of project activities, monitoring and evaluation of project outcome and safeguards measures, and output implementation progress. It will be reporting to the Steering Committee. The UTGFS will be responsible for implementing Subcomponents 1.1 and 1.2, based on implementation plans approved by the Steering Committee. A formal arrangement will be



signed between the MA and the MEF that hosts the UTGFS. A special account will be established with UTGFS to allow withdrawals in line with agreed work plans and statements of expenditures.

5. The PCU staffing includes the following positions: a National Coordinator, a Technical Director, a Rural Infrastructure and Natural Management Specialist (to cover activities under Component 2), an Economist (to cover activities under Sub-component 1.3), an External Financial Auditor, a Monitoring and Evaluation Specialist, a Knowledge Management and Communication Specialist, an Internal Auditor, an Administrative and Financial Officer, an Accountant, a Procurement Officer, an Environmental Safeguards Specialist and a Social Safeguards Specialist, cash transfers facilitation officers (one per district), and support staff. The PCU staff will be recruited by competitive tender and will be supported by the Project with the status of consultant; PCU staff performance will be evaluated annually. The personnel will be composed of technical and fiduciary and safeguards specialists relying in part on staff already involved in project management at the ATI (working in technical and coordination functions at the PCU) and of additional specialists as deemed necessary during implementation. The positions will target experienced managers with proven credentials in the areas covered and familiar with project and donor procedures. The performance of project management will be evaluated annually. The National Coordinator will sign a performance contract with the supervising ministry, while contracts of the other members of the PCU will be signed with the National Coordinator (on behalf of the project).

6. **Regional offices (ROs)** will be established in the respective Regional Rural Infrastructure Departments (*Direction Régionale du Génie Rural*, DRGR) of the MA to coordinate activities at the regional level. They will operate as field offices of the PCU to which they will report. Personnel will be composed of technical staff and fiduciary and safeguards specialists recruited through the PCU. These regional offices will oversee implementation of the project, and will act as the Secretariat for the coordination/approval/ financing/monitoring of the PIPs (Subcomponent 1.3), and productive infrastructure (Subcomponents 2.2 and 2.3), however the central PCU remains responsible for all payments. ROs will be set up in two regional towns (one to cover Kayes and Koulikoro, and one to cover Ségou and Mopti) for field activities coordination and follow up. The ROs will be reporting to the PCU National Coordinator, and include a Regional Coordinator, two technical/operations experts (one dealing with sub-component 1.3 and one with component 2), one environmental specialist, one gender and social inclusion specialist, one M&E assistant, one accounting assistant, one procurement assistant and support staff. The Project will make provisions for the additional costs incurred at the UTGFS needed to cover the 12 PDAZAM districts. Details of these provisions and specific roles and responsibilities of all PCU and UTGFS staff (at both the central and regional levels) will be described in the Project Implementation Manual (PIM).

7. **At the district (“cercle”), community, and village level**, the Project will be implemented in coordination with the existing MA and MSAH services, and under the supervision of the regional office coordinator. For Component 1, at the commune level, the local authorities benefit from local committees that include representatives from civil society, NGOs, and civil servants of technical services. These committees are responsible for identifying the targeted households in each village of the commune in close collaboration with existing village committees, under the supervision of project district agents and using criteria described in the PIM.

8. *Coordination and implementation management.* The Project will be implemented in the field by technical services and other relevant providers. To ensure regional coordination, a regional unit of the PCU-PDAZAM will be established and will include a Regional Office chief, one to two operations officers (for monitoring the portfolio of the grant program and PIPs), and fiduciary staff. The national coordination



will establish collaboration agreements defining the roles and responsibilities of each party with the technical services and NGOs involved in the monitoring or the implementation of the program, in particular, the National Directorate of Rural Engineering, the National Directorate for Agriculture (*Direction Nationale de l'Agriculture, DNA*), the Institute of Rural Economy (*Institut d'Economie Rurale, IER*), the Planning and Statistics Unit of the Rural Development Sector (*Cellule de Planification et des Statistiques/Secteur Développement Rural, CPS/SDR*), the Directorate for Social Protection and Economic Solidarity, the National Directorate of Social Development (*Direction Nationale du Développement Social*), and the Regional Directorates / Offices affiliated to them.

9. Implementation of activities in the field in the four regions of the PDAZAM will be carried out with the support of different types of operators such as companies, consulting firms, individual consultants, NGOs, and technical services, in the form of contracts, agreements, or protocols.

10. Information and communication. A consultant will be recruited within the PCU, and an adequate information and communication system will be put in place, based on a communication strategy and plan. This will encompass the flow of information at all levels of the Project, at the coordination level, and at the level of the various stakeholders and partners in the field.

Financial Management

11. Arrangements are acceptable if they are capable of accurately recording all transactions and balances, supporting the preparation of regular and reliable financial statements, safeguarding the Project's assets, and are subject to auditing arrangements acceptable to the Bank. These arrangements should be in place when project implementation starts and be maintained as such during project implementation. The assessment concluded that the financial management of the ATI satisfies the Bank's minimum FM requirements under Bank Policy and the Directive for Investment Project Financing, and therefore is adequate to provide, with reasonable assurance, accurate and timely financial management information on the status of the Project required by the Bank.

12. The Project retains a centralized financial management structure despite substantially decentralized implementation and decisions structures. A PCU will be established at ATI that is already implementing a Bank financed project and will be responsible for overall management of project activities. Given the cross sectorial nature of the Project dealing with social transfers for which a system has already been established, financial flows will differ between activities related to productivity improvements led by the PCU at ATI and activities aimed primarily at reducing vulnerability under the Jigisemejiri project and its implementation body UTGFS. Consequently, the PCU has overall implementation responsibility of the Project but will carry fiduciary responsibilities for subcomponent 1.3 component 2 and 3, while UTGFS will carry the fiduciary responsibilities for implementation of subcomponent 1.1 and 1.2. An MOU regulating the relationship and coordination between the two projects will be agreed and signed between the MA and the MEF at the latest 3 months after effectiveness.

13. A financial management (FM) assessment of the implementing unit—the ATI—designated to manage the Mali Drylands Development Project (PDAZAM) was carried out in April 2018. The objective of the assessment was to determine whether ATI has acceptable FM arrangements in place to ensure that the project funds would be used only for intended purposes, with due attention to economy and efficiency. The assessment complied with the Bank Directive Financial Management Manual for Investment Project Financing operation effective March 1, 2010, last revised on February 10, 2017.



14. UTGFS, the project coordination unit of the ongoing Emergency Safety Nets Project, will have the fiduciary responsibility for Subcomponents 1.1 and 1.2. The financial management arrangements for these subcomponents of the PDAZAM will be based on the existing arrangements of the Jigisemejiri Project. The overall FM performance of the UTGFS is Satisfactory. The UTGFS is familiar with the Bank FM requirements. The relationship between the PCU and UTGFS will be regulated through an MoU agreed between the MA and MEF. A special account will be opened for UTGFS from which it will withdraw funds in line with work plans and statements of expenditures agreed with the PCU. UTGFS financial capacity was assessed at its set up and it has been implementing the Jigisemejiri Project in a satisfactory manner

15. Arrangements are acceptable if they are capable of accurately recording all transactions and balances, supporting the preparation of regular and reliable financial statements, safeguarding the Project’s assets, and are subject to auditing arrangements acceptable to the Bank. These arrangements should be in place when project implementation starts and be maintained as such during project implementation. The assessment concluded that the financial management of the ATI satisfies the Bank’s minimum FM requirements under Bank Policy and the Directive for Investment Project Financing, and therefore is adequate to provide, with reasonable assurance, accurate and timely financial management information on the status of the Project required by the Bank.

16. The overall fiduciary risk rating is assessed as Substantial, and mitigation measures will strengthen the internal control environment and maintain the continuous timeliness and reliability of information produced by the PCU and an adequate segregation of duties. These are (a) a Financial Management Officer (FMO) and an accountant with qualifications and experience satisfactory to the Bank will be appointed and fully dedicated to the accounting and disbursements tasks of this Project; (b) accounting software will be customized to take account of new project activities; and (c) the PCU will produce a project implementation manual (PIM) including fiduciary procedures. These three mitigation measures are dated covenants and should be implemented within three months following the effectiveness of the Project. The PCU should also recruit an external auditor within six months after the effectiveness date.

FM action plan for the PCU

1 - Action	Responsible party	Deadline and conditionality
2 - Elaborate Project Implementation Manual including fiduciary procedures	PCU	Three (3) months after effectiveness
3 - Recruit a Financial Management Officer and one accountant with qualifications and experience satisfactory for the Bank	PCU	Three (3) months after effectiveness
4 - Upgrade accounting software	PCU	Three (3) months after effectiveness
5 - Recruit an external auditor	PCU	Six (6) months after effectiveness

17. **Internal control system.** The internal control system comprises (i) a steering committee to oversee the project activities, and (ii) a Project Implementation Manual including updated Administrative, Financial, Procurement and Accounting Procedures, and an internal audit function to carry out ex-post reviews and to evaluate the performance of the overall internal control system



18. **Planning and budgeting.** The PCU will prepare a detailed annual work plan and budget (AWPB), which need to be approved by the project Steering Committee. The PCU will submit the approved AWPB to the Bank, no later than November 30, before the year when the work plan should be implemented
19. Accounting. The SYSCOHADA, assigned accounting system in West African Francophone countries, will be applicable. The project accounting software (TOM2PRO) will be customized.
20. Financial reporting. Every quarter, the PCU will submit an Interim Financial Report (IFR) to the Bank within 45 days after the end of the calendar quarter period. The IFRs should provide sufficient pertinent information for a reader to establish whether (i) funds disbursed to the project are being used for the purpose intended, (ii) project implementation is on track, and (iii) budgeted costs will not be exceeded. The PCU will use the IFR format of the ongoing IDA funded projects.
21. The report may include:
- An introductory narrative discussion of project developments and progress during the period, to provide context to (or other explanations of) the financial information reported;
 - A Sources and Uses of Funds Statement, both cumulatively and for the period covered by the report, showing separately funds, provided under the Project (IDA, Borrower, Recipients);
 - A Uses of Funds by Components Statement, cumulatively and for the period covered by the report;
 - The designated account reconciliation, including bank statements and general ledger of the bank account;
 - Disbursement forecasts of the upcoming six months;
 - Explanation of variances between the actual and planned activities and budget.
22. Annually, the PCU will prepare Project Annual Financial Statements, which will comply with SYSCOHADA and World Bank requirements. Annual Financial Statements may comprise:
- Project presentation and project developments and progress during the year, to provide context to (or other explanations of) the financial information reported;
 - A Statement of Sources and Uses of Funds which recognizes all cash receipts, cash payments and cash balances;
 - A Statement of Commitments;
 - Accounting policies adopted and explanatory notes,
 - A Management Assertion that project funds have been expended for the intended purposes as specified in the relevant financing agreements.
23. **Auditing.** The PCU will submit Audited Project Financial Statements satisfactory to the World Bank every year within six (6) months after closure of the fiscal year. A single opinion on the Audited Project Financial Statements in compliance with International Federation of Accountant will be required. In addition, a Management Letter will be required, containing auditor observations and comments, and recommendations for improvement in accounting records, systems, controls and compliance with financial covenants in the Financial Agreement.
24. The PCU will recruit a technical competent and independent auditor acceptable to the Bank within six (6) months after the project effective date. The recruitment for the external audit of the financial statements of the project should be done through terms of reference agreed by IDA



Audit Reports

Audit Report	Due Date
The Project audit reports (audit report and management letter)	<p>Not later than June 30 (Year N) if effectiveness has occurred before June 30 (Year N-1).</p> <p>Not later than June 30 (N+1) if effectiveness has occurred after June 30, (N-1)</p>

25. **Disclosure of the audited financial statements.** In line with the new access to information policy, the project will comply with the Bank disclosure policy of audit reports (e.g. make publicly available, promptly after receipt of all final financial audit reports.

Disbursements

26. Disbursements under the PDAZAM will be carried out in accordance with the provisions of the IDA Disbursement Guidelines (World Bank Disbursement Guidelines for Projects, dated February 2017), the Disbursement Letter, and the Financing Agreement.

27. The Project will finance 100 percent of eligible expenditures inclusive of taxes. A new designated account (DA) will be opened in a commercial bank under terms and conditions acceptable to IDA, one for UTGFS and one for the PCU. The ceiling of the DA for UTGFS will be established at CFAF 500 million (approximately US\$1.0 million). The ceiling of the DA for the PCU will be established at CFAF 1 billion (approximately US\$2.0 million). An initial advance up to the ceiling of the DA will be made and subsequent disbursements will be made against submission of Statements of Expenditure reporting on the use of the initial/previous advance. The option to disburse against submission of the quarterly unaudited Interim Financial Report (also known as report-based disbursement) could be considered as soon as the Project meets the criteria. The other methods of disbursing funds (reimbursement, direct payment, and special commitment) will also be available to the Project. The minimum value of applications for these methods is 20 percent of the DA ceiling. The Project will sign and submit withdrawal applications electronically using the eSignatures module accessible from the Bank’s Client Connection website.

28. **Retroactive Financing.** All bona fide eligible expenditures incurred for project execution between the date of project appraisal (May 2, 2018) and the date of credit/grant effectiveness will be eligible for retroactive financing under the IDA Credit/Grant up to a maximum of US\$460,000 if they are consistent with the provisions of the PIM and Grant section of the PIM. These expenditures are related to goods, works, non-consulting services, and consulting services including training and operating costs under Subcomponents 1.2, 1.3, 3.1, 3.3 and Component 2.

Procurement

29. The Recipient will carry out procurement under the project in accordance with the World Bank’s “Procurement Regulations for IPF Borrowers” (Procurement Regulations) dated July 2016 and revised in November 2017 under the “New Procurement Framework (NPF),” and the “Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants,” dated



October 15, 2006, and revised in January 2011 and as of July 1, 2016, and other provisions stipulated in the Financing Agreement.

30. All procuring entities, as well as bidders and service providers, that is, suppliers, contractors, and consultants, shall observe the highest standard of ethics during the procurement and execution of contracts financed under the Project in accordance with paragraph 3.32 and Annex IV of the Procurement Regulations.

31. The Recipient shall prepare and submit to the Bank a General Procurement Notice (GPN) and the Bank will arrange for publication of GPN in United Nations Development Business online and on the Bank's external website. The Recipient must also publish it in at least one national newspaper.

32. The Recipient shall publish the Specific Procurement Notices (SPN) for all goods, works, non-consulting services, and the Requests for Expressions of Interest (REOIs) on their free-access websites, if available, and in at least one newspaper of national circulation in the Borrower's country, and in the official gazette. For open international procurement selection of consultants using an international shortlist, the Recipient shall also publish the SPN in *United Nations Development Business* online and, if possible, in an international newspaper of wide circulation. The Bank arranges for the simultaneous publication of the SPN on its external website.

Institutional Arrangements for Procurement

33. The PCU will be responsible for the project for procurement planning and management. The National Coordinator will be responsible for decision making during the procurement process.

34. *Filing and record keeping.* The Procurement Procedures Manual will set out detailed procedures for maintaining and providing readily available access to project procurement records, in compliance with the Financing Agreement. Archiving room will be available and the PCU will assign one person responsible for maintaining the records. The logbook of the contracts with a unique numbering system shall be maintained.

35. Signed contracts as in the logbook shall be reflected in the commitment control system of the Recipient's accounting system or books of accounts as commitments whose payments should be updated with reference made to the payment voucher. This will put in place a complete record system whereby the contracts and related payments can be corroborated.

36. *Project Procurement Strategy for Development.* As part of the preparation of the Project, the Recipient (with support from the World Bank) has prepared its Project Procurement Strategy for Development (PPSD), which describes how fit-for-purpose procurement activities will support project operations for the achievement of project development objectives and deliver value for money. The procurement strategy is linked to the project implementation strategy at the country, regional, and international levels, ensuring proper sequencing of the activities. It considers institutional arrangements for procurement; roles and responsibilities; thresholds, procurement methods, and prior review; and the requirements for carrying out procurement. It also includes a detailed assessment and description of ATI and government capacities for carrying out procurement and managing contract implementation, within an acceptable governance structure and accountability framework. Other issues considered include behaviors, trends, and capabilities of the market (that is, market analysis) to inform the procurement plan. Special arrangements like direct contracting, use of state-owned enterprises, United Nations Agencies, third-party monitors, local NGOs, force accounts, use of civil servants, results-based arrangements, need for prequalification, if any, are considered and addressed.



37. UN agencies may be hired by the governments on a sole-source basis for contracts for which they offer their unique roles and qualifications in responding to emergency situations. Standard forms of agreement for UN agencies as acceptable to the Bank will be adopted. For those UN agencies, if such forms have not been agreed with the Bank, the Bank team will provide acceptable sample forms for use by the countries. For the UN agencies hired by the Government of Mali, certain quick-disbursing arrangements may be agreed upon to finance a positive list of imported or locally produced goods that are required for the Project, further subject to the Bank’s prior agreement on the conditions for the release of the financial tranches and the required documentation and certifications, such as customs and tax certificates or invoices.

38. The recruitment of civil servants as individual consultants or as part of the team of consulting firms will abide by the provisions of paragraph 3.23 (d) of the Procurement Regulations.

39. *Procurement Plan:* The Recipient and ATI have prepared detailed 18-month procurement plan, which has been agreed by the Government of Mali and the Bank on May 14, 2018. The Procurement Plan will be updated in agreement with the Bank Team annually or as required to reflect the actual project implementation needs and improvements in institutional capacity.

40. The PCU at ATI will carry out procurement to implement the Project, including procurement for the Ministries or entities involved in Project implementation, and explained below. It will procure goods, works, or services for the Project as included in the Procurement Plan and agreed with the Bank. UTGFS will be responsible for procurement related to implementation of subcomponent 1.1 and 1.2.

41. The scope of procurement is described in the Project Procurement Strategy for Development and the Procurement Plans agreed by the Bank, and summarized in the table below.

Table A.2.1: Summary of the Procurement Strategy for Development

Contracts Description Category	Title, and	Estimated cost (US\$) and risk rating	Bank oversight	Procurement approach/ competition	Selection methods	Evaluation method
Works						
Development works for five (5) lowlands		485,000.00/ Substantial Risk	No	National/Open	Request for Bids	Qualification Criteria: most advantageous bid
Development works and equipment (including solar pumping system, large diameter wells, distribution network, fencing, etc.) of ten (10) small market garden perimeters		227,000.00/ Moderate Risk	No	National/Open	Request for Bids	Qualification Criteria: most advantageous bid
Construction works for seven (7) agricultural storage and conservation stores		160,0.0000/ Moderate Risk	No	National/Open	Request for Bids	Qualification Criteria: most advantageous bid



Construction of five (5) agricultural input stores	60,000.00/ Low Risk	No	National/Limited	Request Quotations for	Qualification Criteria: most advantageous bid
Construction works of five (5) cereal banks	76,500.00/ Low Risk	No	National/Limited	Request Quotations for	Qualification Criteria: most advantageous bid
Development works of two (2) ponds	77,000.00/ Moderate Risk	No	National/Limited	Request Quotations for	Qualification Criteria: most advantageous bid
Antennae's Offices rehabilitation works	75,500.00/ Low Risk	No	National/Limited	Request Quotations for	Qualification Criteria: most advantageous bid
Goods					
Logistics resources (2 wagon station vehicles, 8 pickup vehicles and 30 motorcycles)	540,000.00/ Low Risk	No	National/Open	Request for Bids	Qualification Criteria: most advantageous bid
Computer equipment (computers and accessories, printers, photocopiers, scanners and various) for project management	65,000.00/ Low Risk	No	National/Limited	Request Quotations for	Qualification Criteria: most advantageous bid
Equipment (tablets, chips, internet key and various) for the identification of vulnerable households	50,000.00/ Low Risk	No	National/Limited	Request Quotations for	Qualification Criteria: most advantageous bid
Office furniture	57,000.00/ Low Risk	No	National/Limited	Request Quotations for	Qualification Criteria: most advantageous bid
Software for Project management	51,000.00/ Low Risk		National/Limited	Request Quotations for	
Inputs and agricultural equipment for innovation platforms /fields-schools	70,000.00/ Moderate Risk	No	National/Limited	Request Quotations for	Qualification Criteria: most advantageous bid
Consulting Services					
Payment Agencies for Cash Transfers to Vulnerable Households	461,000.00/ Low Risk	No	National/Open	Quality and Cost Based Selection	Rated criteria
Feasibility studies for the development of the "Snake Valley" (detailed	1,000,000.00/ High Risk	Yes	International/ Open	Quality and Cost Based Selection	Rated criteria



technical studies and tender documents)					
Studies on the impact of climate change on Malian agriculture	180,000.00/ Substantial Risk	No	National/Open	Consultant's Qualification Based Selection	Rated criteria
Studies of traditional or emerging sectors in the arid zone	174,000.00/ Substantial Risk	No	National/Open	Consultant's Qualification Based Selection	Rated criteria
NGOs performance contract to support the implementation of cash transfers and productive cash transfers the Kayes region	200,000.00/ Substantial Risk	No	National/Open	Quality and Cost Based Selection	Rated criteria
NGO performance contract to support the implementation of cash transfers and productive cash transfers in the Koulikoro region	180,000.00/ Substantial Risk	No	National/Open	Consultant's Qualification Based Selection	Rated criteria
NGO performance contract/Operator to support the realization of the community infrastructures (operator of Kayes)	170,000.00/ Substantial Risk	No	National/Open	Consultant's Qualification Based Selection	Rated criteria
NGO performance contract/Operator to support the realization of the community infrastructures (operator of Koulikoro)	170,000.00/ Substantial Risk	No	National/Open	Consultant's Qualification Based Selection	Rated criteria
Development of climate change adaptation plans	140,000.00/ Moderate Risk	No	National/Open	Consultant's Qualification Based Selection	Rated criteria
Analysis of policies efficiency and effectiveness on fertilizers, seeds and mechanization	110,000.00/ Moderate Risk	No	National/Open	Consultant's Qualification Based Selection	Rated criteria
Studies and control of the realization of development works of five (5) lowlands	120,000.00/ Substantial Risk	No	National/Open	Consultant's Qualification Based Selection	Rated criteria
Studies and control of the construction works of	40,000.00/ Moderate Risk	No	National/Open	Consultant's Qualification Based Selection	Rated criteria



seven (7) storage stores and cereals banks					
Studies and control of the construction works of five (5) cereal banks	19,000.00/ Moderate Risk	No	National/Open	Consultant's Qualification Based Selection	Rated criteria
Studies and control of the construction works of five (5) agricultural input stores	15,000.00/ Moderate Risk	No	National/Open	Consultant's Qualification Based Selection	Rated criteria
Studies and control of the development works of ten (10) small market garden perimeters	50,000.00/ Moderate Risk	No	National/Open	Consultant's Qualification Based Selection	Rated criteria
Studies and control of the development works of two (2) ponds	19,000.00/ Low Risk	No	National/Open	Consultant's Qualification Based Selection	Rated criteria
Manuals of procedures: monitoring and evaluation, administrative, accounting and financial, execution, management of Productive Investment Projects (PIPs)	88,000.00/ Moderate Risk	No	National/Open	Consultant's Qualification Based Selection	Rated criteria
Support for the enlistment of beneficiaries (updating the demographic situation, data collection, social survey, beneficiary card)	200,000.00/ Substantial Risk	No	National/Open	Quality and Cost Based Selection	Rated criteria
Elaboration of the contingency plan and the emergency procurement plan and validations	18,000.00/ Moderate Risk	No	National/Open	Selection of Individual Consultants	Rated criteria
Elaboration of the crisis management manual and validation	18,000.00/ Moderate Risk	No	National/Open	Selection of Individual Consultants	Rated criteria
Diagnostic study of the processes and procedures for planning, implementing and monitoring agricultural policies and elaboration of an action plan	60,000.00/ Low Risk	No	National/Open	Consultant's Qualification Based Selection	Rated criteria
Communication plan	14,000.00/ Low Risk	No	National/Open	Selection of Individual Consultants	Rated criteria



Gender action plan	18,000.00/ Low Risk	No	National/Open	Selection of Individual Consultants	Rated criteria
Study of the baseline situation of the results framework indicators	35,000.00/ Substantial Risk	No	National/Open	Selection of Individual Consultants	Rated criteria
Study on M&E system and knowledge management	150,000.00/ Substantial Risk	No	National/Open	Selection of Individual Consultants	Rated criteria
Technical Director	227,000.00/ Substantial Risk	No	National/Open	Selection of Individual Consultants	Rated criteria
Financial Management Specialist	147,200.00/ Substantial Risk	No	National/Open	Selection of Individual Consultants	Rated criteria
Monitoring and Evaluation Specialist	147,200.00/ Substantial Risk	No	National/Open	Selection of Individual Consultants	Rated criteria
Procurement Specialist	147,200.00/ Substantial Risk	No	National/Open	Selection of Individual Consultants	Rated criteria
Rural Infrastructure Specialist	147,200.00/ Substantial Risk	No	National/Open	Selection of Individual Consultants	Rated criteria
Environmental Safeguards Specialist	147,200.00/ Substantial Risk	No	National/Open	Selection of Individual Consultants	Rated criteria
ICT Specialist	147,200.00/ Substantial Risk	No	National/Open	Selection of Individual Consultants	Rated criteria
Natural Resource Management Specialist	113,200.00/ Substantial Risk	No	National/Open	Selection of Individual Consultants	Rated criteria
Agro-economist	113,200.00/ Substantial Risk	No	National/Open	Selection of Individual Consultants	Rated criteria
Social Safeguards Specialist	113,200.00/ Substantial Risk	No	National/Open	Selection of Individual Consultants	Rated criteria
Social Protection Specialist	113,200.00/ Substantial Risk	No	National/Open	Selection of Individual Consultants	Rated criteria
Accountant	113,200.00/ Substantial Risk	No	National/Open	Selection of Individual Consultants	Rated criteria



42. The Project will finance procurement of works of (a) small irrigation perimeters of an area between 1 ha and 5 ha for household plots, depending on the availability of water; (b) lowland development consisting of retentions of water for irrigation, ponds with perimeter fences, and auxiliaries for watering livestock; (c) watersheds to rehabilitate/improve degraded land; (d) the natural defense/regeneration of degraded lands.

43. *Training, Workshops, Study Tours, and Conferences:* Training activities would comprise workshops and training, based on individual needs, as well as group requirements, on-the-job training, and hiring consultants for developing training materials and conducting training. Selection of consultants for training services follows the requirements for selection of consultants above. All training and workshop activities (other than consulting services) would be carried out on the basis of approved Annual Work Plans/Training Plans that would identify the general framework of training activities for the year, including (a) the type of training or workshop; (b) the personnel to be trained; (c) the institutions that would conduct the training and reason for selection of this particular institution; (d) the justification for the training, that is, how it would lead to effective performance and implementation of the Project and or sector; (e) the duration of the proposed training; and (f) the cost estimate of the training. Report by the trainee(s), including completion certificate/diploma upon completion of training, shall be provided to the Project Coordinator and will be kept as parts of the records, and will be shared with the Bank if required.

44. Detailed training and workshop terms of reference providing the nature of training/workshop, number of trainees/participants, duration, staff months, timing, and estimated cost will be submitted to IDA for review and approval prior to initiating the process. The selection methods will derive from the activity requirement, schedule, and circumstance. After the training, the beneficiaries will be requested to submit a brief report indicating what skill or skills have been acquired and how these skills will contribute to enhancing their performance and attaining the project objective.

45. *Operational Costs:* Operational costs financed by the Project would be incremental expenses, including office supplies, vehicles operation and maintenance costs, maintenance of equipment, communication costs, rental expenses, utility expenses, consumables, transport and accommodation, per diem, supervision costs, and salaries of locally contracted support staff. Such services needs will be procured using the procurement procedures specified in the Project Implementation Manual (PIM) accepted and approved by the Bank.

46. *Procurement Manual:* Procurement arrangements, roles and responsibilities, methods, and requirements for carrying out procurement shall be elaborated in detail in the Procurement Manual, which will be a section of the PIM. The PIM shall be prepared by the Recipient and agreed with the Bank not later than three months from the effectiveness date.

47. The procurement arrangements applicable under Subcomponent 3.2 Contingency emergency Response shall be described in the Emergency Operations Manual, which shall be prepared by the Recipient and agreed with the Bank no later than 6 months after the Effective Date to ensure that it is in place before occurrence of any potential emergency that would require using this subcomponent.

48. *Procurement methods:* The Recipient will use the procurement methods and market approach in accordance with the Procurement Regulations.

49. Open National Market Approach is a competitive bidding procedure normally used for public procurement in the country of the Recipient and may be used to procure goods, works, or non-consultant



services provided it meets the requirements of paragraphs 5.3 to 5.6 of the Procurement Regulations (see Table A2).

Table A2: Requirements and actions for national open competitive procurement

N°	Requirements	Actions
1	Open advertising of the procurement opportunity at the national level.	The advertising must be extended to all contracts through the inclusion of all contracts in the Procurement Plan and its publication.
2	The procurement is open to eligible firms from any country.	None.
3	The request for bids/request for proposals will require that Bidders/Proposers submitting Bids/Proposals present signed acceptance at the time of bidding to be incorporated in any resulting contracts, confirming application of, and compliance with, the Bank's Anti-Corruption Guidelines, including without limitation the Bank's right to sanction and the Bank's inspection and audit.	Reinforce the related provisions (Public Procurement Code art. 29 / Code of ethics and professional conduct in Public Procurement [art. 8, 11, 12, 13, 28, 38, 39, 40, 41, 42, 44, and 47]) by taking into account the aspects related to the Bank's Anti-Corruption Guidelines (including without limitation the Bank's right to sanction and the Bank's inspection and audit rights). Introducing a template of this acceptance in the bidding documents. A World Bank-approved template will be provided.
4	Contracts with appropriate allocation of responsibilities, risks, and liabilities.	Update and take into account the required new elements (in particular, to strengthen environmental and social performance, health, and safety).
5	Publication of contract award information.	The advertising must be extended to all contracts (the field of application of the public procurement code).
6	Rights for the Bank to review procurement documents and activities.	The requirement must be included in the bidding documents in order to grant rights to the Bank to review procurement documentation and activities. The legal agreement may also allow this provision.
7	An effective complaints mechanism.	None.
8	Maintenance of records of the Procurement Process.	The requirement must be included in the bidding documents and in the legal agreement. The PCU must spell out the practical modalities and the appropriate documentation to archive in the procurement manual of procedures.

50. The thresholds for particular market approaches and procurement methods and the Bank's prior review requirements are also provided in table A3.

Table A3: Thresholds for procurement methods, and prior review

N°	Expenditure Category	Contract (C) Value Threshold* [eq. US\$]	Procurement Method	Contracts Subject to Prior Review /[eq. US\$]
1	Works	$C \geq 15,000,000$	Open Competition International Market Approach and Direct Contracting	$\geq 10,000,000$
		$200,000 < C < 15,000,000$	Open Competition National Market Approach	All contracts at or above US\$10 million are subject to international advertising and use of the bidding documents agreed with the Bank
		$C \leq 200,000$	Request for Quotation	None



No	Expenditure Category	Contract (C) Value Threshold* [eq. US\$]	Procurement Method	Contracts Subject to Prior Review /[eq. US\$]
2	Goods, IT, and non-consulting services	C ≥ 3,000,000	Open Competition International Market Approach and Direct Contracting	≥ 2,000,000
		100,000 < C < 3,000,000	Open Competition National Market Approach	All contracts at or above US\$3 million are subject to international advertising and use of the bidding documents agreed with the Bank
		C ≤ 100,000	Request for Quotation	None
3	National shortlist for selection of consultant firms	C < 200,000	For Consulting Services	None
		C ≤ 400,000	For Engineering and Construction Supervision	None
4	International shortlist for selection of consultant firms	C ≥ 200,000	For Consulting Services	≥ 1,000,000
		C > 400,000	For Engineering and Construction Supervision	≥ 1,000,000
5	Selection of Individual consultants	All values	All Approaches	≥ 300,000
6	Direct contracting	All values		As agreed in the Procurement Plan
7	Training, workshops, study tours	All values	Based on approved Annual Work Plan & Budgets (AWPB)	

Note: *These thresholds are for the purposes of the initial procurement plan for the first 18 months. The thresholds will be revised periodically based on reassessment of risks. All contracts not subject to prior review will be post-reviewed. Mali, as a Fragile and Conflict-Affected Situations country, must be subject to the provision of paragraph 12 of OP 10.00 Investment Project Financing to apply flexibilities and simplification to facilitate procurement implementation. These procurement arrangements therefore draw on the Bank Guidance on Procurement Procedures in Situations of Urgent need of Assistance or Capacity Constraints issued on July 1, 2016.

51. *Procurement Risk Rating:* The project procurement risk prior to the mitigation measures is **Substantial**. The risk can be reduced to a residual rating of **Moderate** upon consideration of successful implementation of the mitigation measures contained in the action plan for strengthening procurement capacity provided in table A4.

Table A4: Action plan for strengthening procurement capacity

No.	Key Risks	Mitigation actions	By whom	By when
1	Lack of a procurement procedures manual based on “World Bank Procurement Regulations for IPF Borrowers” dated July 2016	Develop a Project Implementation Manual (PIM) of procedures with a section on procurement detailing all applicable procedures, instructions, and guidance for handling procurement, the standard bidding documents, and other standard procurement documents to be used. The PIM will outline the interaction between the project stakeholders responsible for procurement.	PCU	No later than 3 months after Credit/Grant effectiveness



No.	Key Risks	Mitigation actions	By whom	By when
2	Lack of Procurement Specialist proficient in World Bank procedures	Hire a Procurement Specialist proficient in the World Bank procurement procedures dedicated to the Project, on a competitive basis.	PCU	No later than 3 months after Credit/Grant effectiveness
4	The procurement team and technical staff involved in procurement processes have not mastered the World Bank's new Procurement Framework and its tools	Train the Procurement Specialist and the technical experts, and the tender committee members on the Bank's Procurement Regulations.	PCU	No later than 3 months after Credit/Grant effectiveness
5	Timeouts in the implementation of some activities, mainly evaluation committee management and awarding of contracts	Closely monitor and exercise quality/control of all aspects of the procurement process, including evaluation, selection, and contract award in line with the provisions of the procurement manual.	PCU	Throughout project implementation
6	Lack of a dedicated archiving room with a trained staff for its management	Provide adequate space and equipment for the procurement archive and set up an adequate filling system for project records to ensure easy retrieval of information/data according to Bank requirements for archiving.	PCU	No later than 6 months after the beginning of project implementation
		Designate or recruit an officer to be responsible for data management.		

52. *Procurement supervision.* In addition to the prior review and implementation support mission carried out by the World Bank, it is recommended that at least two missions be carried out each year, with one visit to the field to carry out post-review of procurement actions.

53. *Post-review procurement.* Post-reviews can be done either by World Bank staff or consultants hired by the World Bank. They may also be carried out by third parties such as supreme audit institutions, procurement regulatory authorities, consultancy firms, NGOs, and others, according to procedures acceptable to the World Bank to ascertain compliance with procurement procedures as defined in the legal documents. The procurement post-reviews should cover at least 10 percent of contracts across the World Bank portfolio that have not been prior reviewed in a financial year. The sampling is risk based and considers (a) the project procurement risk rating, with the riskier projects having a larger sample; and (b) the contract risk rating, to ensure that riskier contracts constitute a higher proportion of the sample. Post-reviews contribute to the overall procurement performance rating of the Project based on the rating of the post-procurement review and provide a basis for updating the project procurement risk and the risk mitigation plan.

54. *Oversight and monitoring arrangements for procurement.* The PIM will define the Project's internal organization and its implementation procedures. It will include, among other things, all relevant procedures for calling for bids, selecting consultants, and awarding contracts. The project monitoring arrangements for procurement will be specified. Detailed procurement documentation (namely, the Project Procurement Strategy for Development) may be referenced as such and retained in the project files. The detailed 18-month Procurement Plan, once agreed with the Borrower, will be uploaded to the World Bank website.



55. **Institutional arrangement for safeguards implementation.** While several stakeholders will be involved in implementing the Project, including MA, the main responsibility for safeguards screening, monitoring, and implementation will be with the PCU at the central level and regional office level. The PCU will hire an environmental safeguard specialist and a social safeguard specialist (at the central level in the PIU) and an environmental specialist and a social development specialist (at the regional level) in each of the two regional offices, all with qualifications and experience satisfactory to the Association. The environmental and social safeguards team will work closely with the National Directorate for the Sanitation of Pollution and Nuisance Control (*Direction Nationale de l'Assainissement du Contrôle des Pollutions et des Nuisances*, DNACPN) in charge of ensuring that environmental and social safeguards are properly addressed during project implementation. The PCU will sign a memorandum of understanding with the DNACPN that will define the collaboration modalities between the two entities. All PCTs and all PIPS will be systematically subject to safeguards screening that will decide which safeguards instruments are relevant for the related environmental and social risks and impacts mitigation measures. The PIM will detail the safeguards screening and mitigation process, the gender-based violence management, and the Grievance Redress Mechanism.

56. **Citizen engagement.** The proposed Project activities are based on continuing citizen engagement and stakeholder consultation and participation throughout the project cycle (design, preparation, and implementation). The determination of investments of the infrastructure component are premised on the Economic, Social and Cultural Development Programs (PDSEC) that have been developed at the communal level. To ensure that these documents indeed reflect the local wishes of the population, towns halls are expected to be held where the population can participate to verify the investment priorities identified in the PDSEC. Three main approaches will be used to foster engagement:

- Representatives of civil society organizations will be invited to provide feedback to the Steering Committee to ensure beneficiaries' concerns are taken into account and to participate in the decision-making process regarding project implementation activities.
- During implementation support missions and evaluations of the Project's achievements, focus group discussions and beneficiary satisfaction surveys will periodically gather feedback from beneficiaries on project implementation (its effectiveness, inclusiveness, quality, delivery, and targeting). This information will be used to improve implementation and address issues raised by beneficiaries to obtain better results moving forward.
- Civil society organizations and communities will be involved in Bank implementation support missions and the joint evaluation of project results upon completion of the Project. Recurrent consultations with civil society and direct beneficiaries will be part of the project M&E strategy. The preparation and implementation of safeguard instruments has been and will be part of the consultation process. Citizen engagement and beneficiary feedback will be monitored through the measurement of beneficiaries' satisfaction with project interventions.

57. **Gender.** *As reflected in the sectoral context, women occupy a variety of roles in Mali's agricultural production and marketing system, but with overall very low productivity and limited autonomy.* In most value chains, women predominate, as producers and agro-processors delivering small quantities to local markets, and as retail sellers in major markets. The primary factors that contribute to low female



productivity are (a) farm labor, with women facing significant challenges in accessing, using, and supervising male farm labor; (b) low access to appropriate production and processing technologies; (c) low technical and business development skills; and (d) landownership characteristics, with men owning more land and enjoying higher returns to ownership than women. A careful and gender sensitive approach will be necessary to empower women under the Project.

58. First, gender-based violence (GBV) is an issue that could be avoided. The project will prepare a robust and well-planned information and education campaign to be disseminated in the communities for men and women. The project will also provide the right channels in all communities to collect grievances and to provide referral for extra support when necessary.

59. Second, direct cash transfer will be provided to women, as in many countries, however, Akresh et al. (2012) show that in West African countries, the head of the household (usually male) is responsible for the household's food expenditures. While non-food expenditures (excluding housing expenditures) are the responsibility of individual members, including the wives, who hold responsibility for their own and/or other children. In this spirit, as part of the implementation process for the direct cash transfer, households will be informed about core objectives of the program and left to take the final decision about the recipient, since a key objective of this component is to address food security.

60. Third, since women are traditionally involved in small-scale activities and are economically marginalized in rural areas, their participation in income generating activities will be strongly encouraged. This will be done by encouraging them (a) to receive training and information in preparing investment plans; (b) to engage in capacity-building activities for diversification of livelihoods; and (c) to exploit access to and promotion of emerging new crops and production techniques, so they can benefit from the project investment and increase productivity. Gender-tailored activities will benefit from current experience under the Jigisemejiri Project.

61. Fourth, experience has shown that existing groups of farmers are heavily dominated by men. Therefore, the Project will support the creation of small cooperatives of poor and vulnerable women to maximize investments and reinforce mutual support mechanisms, and benefit from the promotion of the emerging value chains under subcomponent 1.3 (e.g. sesame and Arabic gum). Thus, women will be major beneficiaries of investments to support improvement of household resilience and the adoption of high-productivity and climate-resilient technologies and practices.

62. **Action:** By replicating the experience of the Jigisemejiri Project, the Project is expected to reduce gender disparities. This will be reinforced with Component 1.2, under which technical support will be provided to produce foundation seed or seedlings for crops preferred by women, such as sesame seed, and cowpea, but also horticultural crops; and Component 1.3, a positive discrimination rule will be applied for support that would be provided to female producers' associations or production groups. Local extension and advisory services will be trained and supported by NGOs, which have experience in the matter of providing advice tailored to women-specific needs. For Subcomponent 3.3, the project staff will include a senior and junior gender and social inclusion specialist.

Monitoring and Evaluation

63. The Results Framework defines the performance indicators for key project activities. The project will implement a robust M&E system to provide high-quality information and allow the government and World Bank to react immediately to any issues that may arise. The PCU will oversee M&E and compliance



with the agreed reporting requirements. The M&E system will be designed to link technical and financial data on the project's progress. It will serve as a mechanism to assess project results and as a day-to-day management tool. It will also support project supervision by ensuring that baseline and follow-up surveys and data collection for key performance indicators are available and regularly updated. Appropriate approaches and solutions will be sought to gather data to properly inform indicators.

64. M&E reports will be produced every six months for physical implementation and results monitoring. Semiannual and annual reports will be circulated to relevant sector ministries and development partners. Semi-annual joint implementation support missions with representatives from the Bank and the Government of Mali will ensure compliance with legal covenants and assess the status of key project outcomes. A Midterm Review will be conducted no later than three years after the first disbursement. A final independent evaluation will be conducted in the last semester of project implementation to assess overall achievement of expected project results.

65. The M&E section of the PIM will provide details about the definition of the Results Framework, the methodology, and the instruments to be used for data collection, the institutional arrangements for M&E functions (identification of actors and definition of their respective responsibilities), the Grievance Redress Mechanisms, and the mechanism to be used for disseminating information. M&E results will serve to update the communication strategy that will be developed and implemented by the PCU. UTGFS will provide the necessary data for subcomponent 1.1 1.2 related activities baseline survey will be conducted during the first year of the Project to verify the baseline data and targets presented in the Results Framework. Moreover, an M&E mechanism will be set up to monitor emergency response activities.

66. The Results Framework includes mechanisms to monitor gender impact and facilitate gender disaggregated analysis. The Project will consider the possibility²⁶ to include a gender impact evaluation with the World Bank's Africa Region Gender Innovation Lab (GIL). The objective of the impact evaluation could be to generate evidence on how unconditional cash transfers bundled with productive transfers (Subcomponent 1.2) can reduce gender gaps in agricultural productivity. Another option would be to compare male and female individual beneficiaries and non-beneficiaries of the high value chain component (Subcomponent 1.3) and assess the impact of this component on gender gaps in profits from producers' groups.

²⁶ This will be discussed during an in-depth technical workshop for the Project. During the workshop, impact evaluation methods, identification of the priority questions, and targeting the specific intervention(s) to test for the impacts would be discussed.



ANNEX 3: IMPLEMENTATION SUPPORT PLAN

Strategy and Approach for Implementation Support

1. The strategy for supporting project implementation will focus on successfully mitigating the risks identified at various levels, and supporting the risk management efforts proposed in the Systematic Operations Risk-rating Tool (SORT). The approach entails close monitoring of the implementation of the project's technical design, as well as governance, fiduciary, and safeguard matters. It will consist of (a) implementation support missions, carried out jointly with FAO as needed for technical support; and (b) technical assistance (TA) in areas of weakness and where new approaches and/or procedures have been introduced.
2. One of the biggest implementation challenges identified is that overall capacity of many decentralized ministerial services is weak. To respond to this challenge, and to ensure that project resources are being used effectively to achieve the Project Development Objective (PDO), the supervision strategy is composed of measures to review progress and respond to implementation issues that include the following:
 - (a) *Implementation support missions.* The World Bank Task Team will conduct semiannual review and implementation support missions to review project implementation performance and progress toward the achievement of the PDO. Given the overall project design and scope, a multidisciplinary team comprising technical specialists, along with fiduciary, environmental, social, and operations specialists, will be needed to support the government in implementing the Project. The first implementation support mission will take place as soon as possible after IDA credit/grant effectiveness to provide startup support through direct and timely feedback on the quality, soundness, and acceptability of implementation plans.
 - (b) *Midterm Review.* A Midterm Review will be carried out midway in the implementation phase, at the end of Project Year 3. It will include a comprehensive assessment of progress in achieving the project objectives laid out in the Results Framework. The Midterm Review will also serve as a platform for revisiting design issues that may require adjustment to ensure satisfactory achievement of the Project's objective.
 - (c) *Other reviews.* Each year, the Bank and the Ministry of Finance will consider the need for additional analytical, advisory, and knowledge-sharing activities and/or third-party reviews. Third-party reviews will be especially useful for following up on project activities in areas affected by conflict. Such reviews will be planned over and above the semiannual implementation support missions.
 - (d) *Implementation completion.* At the close of the Project, the Bank will carry out an implementation completion review to assess the success of the Project and draw lessons from its implementation.



3. *Objective of implementation support missions.* The implementation support and oversight missions will have the combined aim of reviewing the quality of implementation, providing solutions to implementation problems, and assessing the likelihood of achieving the PDO. More specifically, they will:
- (a) Review implementation progress by component, including institutional development aspects;
 - (b) Provide solutions to implementation problems as they arise;
 - (c) Review with the PCU the project action plan and disbursement programs for the next six months;
 - (d) Review the project's fiduciary aspects, including disbursement and procurement;
 - (e) Verify compliance of project activities with the Bank's environmental and social safeguard policies;
 - (f) Determine progress toward the PDO against targets in the Results Framework and assess the quality of implementation by reviewing case studies and results of surveys to measure results indicators; and
 - (g) Review the quality of capacity-building activities, which are crucial to implementing the Project effectively.

The missions will combine field visits, field-based focus group discussions, interactive workshops with stakeholders for feedback, and regional and national workshops to highlight implementation issues, pick up lessons emerging from implementation, and share mission recommendations, including agreements on actions moving forward. Missions will also review quarterly/annual reports and various studies.

4. *Technical assistance (TA).* Implementation support will include technical support from the Bank, FAO, and possibly other bilateral/multilateral agencies for critical aspects of the Project, to ensure proper financial management and procurement, and to monitor social and environmental safeguards. The objective of the technical support would be to help the project teams internalize good practices and remove implementation bottlenecks as they are identified during implementation support missions. TA will include training workshops to develop core resource teams within regional implementation units and project teams, helping to finalize manuals, and reviewing and advising on terms of reference for required studies and technical support missions.

Implementation Support Plan and Resource Requirements

5. *Technical support.* Project coordination will remain somewhat complex, albeit based on existing experience with the ongoing projects in Mali. Some investments planned under the Project are relatively complex from a technical standpoint, especially in terms of ensuring that the activities to be funded actually result in the expected efficiency improvements. In addition to the Bank's core supervision team, the FAO Investment Center, as well as several consultants, may be mobilized periodically to provide TA to implementing agencies in the form of hands-on training and mentoring.

6. *Focus of support.* The first two years of implementation will focus more on technical support. Thereafter, the focus will shift to more routine monitoring of progress, troubleshooting, and assessments based on the Results Framework. The support missions will be complemented by regular short visits by individual specialists to follow up on specific thematic issues as needed.



7. *Financial support.* The Project Financial Management (FM) Specialist, based in the country office, will review the FM systems, including their continued adequacy; evaluate the quality of the budgets and implementing agencies’ adherence to these budgets; review the cycle of transaction recording through to final report generation; evaluate the internal audit function; review Interim Financial Reports and/or annual Financial Statements; follow up on the advances to the designated accounts; follow up on both internal and external audit reports; and periodically assess the Project’s compliance with the FM Manual and Financial Agreement. Table A3.1 summarizes the FM implementation support plan.

Table A3.1 : Financial management implementation support plan

FM activity	Frequency
<i>Desk reviews</i>	
Interim Financial Report review	Quarterly
Audit report review of the program	Annually
Review of other relevant information, such as interim internal control systems reports	Continuous as they become available
<i>On-site visits</i>	
Review of overall operation of the FM system (implementation support mission)	One per year
Monitoring of actions taken on issues, highlighted in audit reports, auditors’ management letters, internal audit, and other reports	As needed
Transaction reviews	As needed
<i>Capacity-building support</i>	
FM training sessions	During implementation, and as and when needed

8. *Procurement support.* With regards to procurement, the Bank will provide implementation support to the client through a combination of prior and post-reviews, procurement training to project staff and relevant implementing agencies, and periodic assessment of the Project’s compliance with the procurement manual. Implementation support missions will be geared toward (a) reviewing procurement documents, (b) providing detailed guidance on the Bank’s Procurement Guidelines, and (c) monitoring procurement progress against the detailed Procurement Plan. Based on the recommendations of the fiduciary assessments of the implementing agencies, and in addition to the prior review supervision to be carried out from the Bank office, the semiannual supervision missions will include field visits, of which at least one mission will involve post-review of procurement activities.

9. *Safeguards.* The Bank specialists in social and environmental safeguards based in Bamako will have responsibility for supervising safeguard activities. They will conduct supervision of the Project’s safeguard activities at least twice a year, participate in regional meetings to discuss findings, and draft action plans to improve implementation. OP 4.12 is triggered because the Project will finance activities in Subcomponents 1.2, 1.3 and 2.2, and 2.3 that can lead to adverse social risks and impacts. The Resettlement Policy Framework developed by the Borrower will be the basis for reorienting activities during implementation and for the development of site-specific Resettlement Action Plans (RAPs) to mitigate social impacts. Women and youth will be specifically considered in the Project, as evidenced by project activities specifically intended for their benefit. To minimize conflict and increase social inclusion, the Project will follow citizen engagement guidance and promote transparency throughout implementation.

10. *Focus of implementation support.* Table A3.2 summarizes the focus of implementation support during the project’s implementation of the proposed project.



Table A3.2 Main implementation support activities

Time	Focus	Skills needed
First 12 months	<ul style="list-style-type: none"> • Project startup • Support to implementation activities (sensitization, council/community consultations and planning, capacity building, strengthening implementation capacity, including M&E) • Guidance on applying safeguard instruments • Development of impact evaluation methodology, and oversight of baseline survey • Procurement, FM, M&E, and safeguard training of staff at all levels 	<ul style="list-style-type: none"> • TTL+ operation officer + co-TTL • Agricultural economics • Social development • Financial management • Procurement • Environment • Communication • M&E
12–48 months	<ul style="list-style-type: none"> • Monitoring implementation performance, including progress • Review of annual work plans and disbursement schedule • Review strength of councils and cooperatives, quality of participatory process, and capacity-building activities • Review quality of quarterly/annual reports, data, and various produced studies • Assess quality of implementation process • Assess quality of M&E system (including quality of data collected) • Review of audit reports and Interim Financial Reports • Review adequacy of the FM system and compliance with financial management covenants • Assess quality of safeguards instruments and their application 	<ul style="list-style-type: none"> • TTL+ operation officer + co-TTL • Agriculture economics • Social development • Financial management • Procurement • Environment • Facilitation of mechanisms for coordination/collaboration • Communication • M&E

Note: TTL = Task Team Leader.



ANNEX 4: ECONOMIC AND FINANCIAL PERFORMANCE

Introduction

- 1. This annex presents the economic and financial analysis of the proposed Mali Drylands Development Project (PDAZAM).** The evaluation is built on (a) a literature review of social protection intervention when designed separately or jointly with agriculture development interventions, and (b) the cost-benefit analysis applied to a range of agricultural production models (rainfed crops, irrigated crops, and livestock) and income generating artisanal to semi-industrial activities (seed production, agricultural equipment, storage/conservation).
- 2. The Project's objective is to have all households in a selected area of the drylands transitioning into sustainable rural development.** To achieve this objective, a package/combination of interventions at the commune and village level that attempt to boost agricultural production and that support improving livelihoods of poor people in the agriculture sector is included in the Project. Consequently, the selection of the types of beneficiaries of the Project in a selected area include (a) farmer groups that are capable of making an impact in terms of increasing production; (b) poor and vulnerable households that would not otherwise have an opportunity to improve their productivity or resilience; and (c) those who would benefit from local-level interventions to boost agricultural production (improved land perimeters, small land management and irrigation, and so forth), but who are not necessarily already organized to benefit from the investments. As such, the Project is creating an environment at the commune and village level where all people have access to the means necessary for increasing production, and perhaps diversifying their livelihoods.
- 3. There is a vast literature on assessing impacts of both social protection and agricultural interventions, separately or combined.** Combining social protection and agricultural programs are needed to boost impacts on rural areas by creating the synergies needed for building resilience and increasing agricultural productivity. Beneficiaries of social protection programs gain from agriculture sector expertise to build their productive assets and expand their income-earning opportunities. Combining learning and innovation and climate-smart practices with new farm technologies with larger agricultural infrastructure investments can help these households participate in the growth process. At the same time, the agriculture sector beneficiaries would gain from social protection expertise in areas such as citizen engagement, public service delivery, addressing gender disparities, improving health access and services, and reducing household risks to shocks.

Project Development Impact and Economic Benefits

- 4. Social protection systems, programs, and policies help individuals and societies build resilience to risks, achieve equity, and improve livelihoods.** Social protection impacts have been widely presented on the human development of children and on local economies. The 2011 Independent Evaluation Group report shows that social protection increases school enrollment, attendance, and school progression, and reduces child labor; health care usage and growth monitoring, and nutrition are also enhanced and contribute to alleviating the credit constraints for households, and allow them to make more and better investments in assets and production; and programs successfully protect consumption during crisis and help avoid the negative consequences of shocks on investments in children's human capital. Moreover, Thome et al. (2016) indicate that, in Africa, each U.S. dollar transferred to poor eligible households through social programs generates an additional US\$0.27 to US\$1.52 of local income, representing a range



on income multiplier from 1.27 to 2.52. Most of the spillover goes to households that are not eligible for transfers because they do not meet the poverty or other eligibility criteria of the programs and are positioned to respond to increased demand for local products. Therefore, social protection program impacts are achieved at the household level through the regular distribution of cash transfers, accompanied by other activities such as home visits and training to help families invest in human capital, productivity, and diversifying livelihoods.

5. **There is, however, scope to improve social protection programs to reduce vulnerability in the drylands and improve nutrition outcomes by reducing the sensitivity to shocks of vulnerable households and by improving the capacity of these households to be more resilient.** This is more effectively achieved when social protection support is combined with investments in human capital and livelihoods, and when it is integrated with other development programs from sectors such as agriculture, as proposed by this Project. On reducing vulnerability, the literature²⁷ shows that cash transfers allow households to invest in human capital, build assets, and diversify their livelihood strategy. Increasingly, the delivery of financial support as income support to reduce financing constraints and finance productive assets is becoming particularly common in the Sahel (for example, Niger and Senegal), where the poorest households live in rural areas, operate small family farms, and lack productive assets. Yet, if the poor rely mostly on their own labor and lack productive assets, their incomes remain low and poverty continues without such support.

6. **In Mali, the Jigisemejiri Project has been implemented for almost four years.** To date, the Jigisemejiri Project has provided quarterly cash transfers to 67,867 families, reaching 390,465 individuals (80,975 children 0–5; 103,874 children 6–14; and 31,092 elderly aged 60+), of which 49 percent are women, in Kayes, Sikasso, Koulikoro, Segou, Mopti, Gao, and Bamako. Jigisemejiri is also providing information sessions through accompanying measures that promote good practice on nutrition, health, education, and family planning for the participants and other members or the community to promote behavioral changes. Since October 2017, the Project has provided nutritional supplements to 105,000 beneficiaries (70 percent of whom are children under 5 years of age, and 30 percent of whom are pregnant women); and started provision of income generating activities to 5,127 households.

7. In addition, due to the project partnership with the National Agency for Medical Assistance (*Agence Nationale d'Assistance Médicale*), which is in charge of the Medical Assistance Plan (*Régime d'Assistance Médicale*, RAMED), 56,698 heads of households and direct family members have received the RAMED card for free health care; and due to the project partnership with the Interprofessional Mutual of Mali (*Mutuelle Interprofessionnelle du Mali*, MIPROMA), 1,351 MIPROMA enrollment cards have been distributed to program beneficiaries to support the government objective of achieving universal health coverage for the Malian population. Jigisemejiri is increasing coverage in the North by including new areas of Mopti, Gao, and Tombouctou²⁸ with cash transfer and/or income generating activities and/or labor-intensive public works, and it is supporting the rehabilitation of the Kona port. While Jigisemejiri is progressing well, regular assessments and evaluations are in place to further improve the implementation and impact of programs.

8. **A mid-term evaluation of the Jigisemejiri Project by the International Food Policy Research Institute (IFPRI) in October 2017 indicates that,** according to households' self-reports on how they used their last cash transfer, the three largest categories of expenses were food consumption, health, and

²⁷ See, for example, Fao cash +; del Ninno, Coll-Black, and Fallavier 2016; and Grosh et al. 2008.

²⁸ See <http://www.jigisemejiri.org/prestations/#/>.



agricultural investments (about 65 percent, 11 percent, and 4 percent, respectively), corresponding to approximately 80 percent of the last transfer received, or CFAF 24,000 (US\$45). The intervention improves household consumption and reduces poverty, albeit not significantly. The program reduces household poverty by 1.80 percentage points, as measured by the Household Consumption Score relative to the national poverty line, representing a 21 percent reduction in the poverty headcount index. The intervention significantly reduces household food insecurity by 1.88 points as measured by the Household Food Insecurity Access Scale, representing a 27 percent reduction in food insecurity. The intervention significantly improves household dietary diversity as measured by the Dietary Diversity Index (DDI) and Food Consumption Score (FCS). The program increases the DDI by one item, or a nearly 7-percent increase relative to the control group, and increases the FCS by 3.7 points, or a 6-percent increase relative to the midline control mean. The intervention also significantly increases household savings and investment. It increases the proportion that invests in small animals by 6 percentage points, and increases the proportion of those that invest in livestock by 11 percentage points.

9. **The current Project, through its combined intervention, tackles constraints of agricultural productivity and resilience to be able to boost socio-economic impacts.** The results highlighted above with respect to social protection intervention are strongly associated with increasing household resilience, but without extra investment, caution is needed to affirm that this impact would be enough to bring the poorest of the poor out of extreme poverty in the long term. Other studies²⁹ indicate that impacts tend to remain even after implementation is completed, but it is difficult to say for how long it is going to last. Continuous support from social protection interventions and/or access to programs to support productive activities such as those offered in Subcomponent 1.3 might be necessary to ensure that the investments are not wiped away when households face negative shocks years after the intervention. Subcomponent 1.3 can ensure that former beneficiaries of Subcomponent 1.2 are included in mainstream agricultural services (credit, extension services, access to new technologies, and so forth). Veras et al. (2017) call this combination a necessary transition from a sustainable livelihoods program toward complementary programs such as the ones provided in Subcomponent 1.3 that could be the desirable graduation path for beneficiaries of Subcomponent 1.2. In addition, Banerjee et al. (2015) show that coaching and support for preparing business plans, and follow-up activities, which involves regular visits by trainers, are critical to the success of programs. However, more “coaching” visits did not necessarily lead to higher income, but instead resulted in higher investment levels by beneficiary households.³⁰

10. **Adding to this picture the investment in communities to improve the environmental, physical, and socioeconomic context of agriculture through the development of infrastructures will create synergies with productivity optimization activities under Component 1.** In fact, as the Project integrates access to more productive assets among the poor, and supports more productive and potentially more diversified livelihoods, beneficiaries can take extra advantage of the investments made in agriculture and pastoralists, as proposed in Component 2 of this Project. For example, community investments can help communities reduce their sensitivity to shocks by developing the productive infrastructure that can permanently improve the livelihood strategies of recipients and their communities. For example, in Ethiopia, construction of 600,000 kilometers of soil and stone bunds enhanced water retention and reduced soil erosion, and protected land with area enclosures, leading to improved soil fertility and

²⁹ Misha et al. 2014; Macours, Premand, and Vakis 2012.

³⁰ Blattman et al. 2016.



increased carbon sequestration that benefited the entire population in the selected areas, reducing overall vulnerability associated to droughts in the regions³¹.

11. **From an agricultural development standpoint, the PDAZAM is designed to help remove major constraints hindering improved agricultural productivity, and to some degree, marketing of products in Mali drylands.** These constraints include (a) an insufficient supply of goods³² and services (training, financial services, management and technical support and advice, post-harvest treatment, and processing) adapted to the needs of semi-arid farmer, in terms of quality, quantity, and price; and (b) limited availability of and low accessibility to efficient, resilient, and adaptable technologies and techniques. The Project will have tangible socioeconomic benefits that can be quantified either in monetary or physical terms including (a) an increase in income of direct and indirect beneficiaries; (b) creation of additional employment, both at the farm level and upstream (supply of farm inputs) and downstream (supply of processed products) of productive activities in drylands; (c) increased exports (for example, “emerging” *filières* such as sesame and Arabic gum); and (d) an increase in fiscal revenues resulting from increased turnover of small to medium enterprises. Some of these benefits can be calculated accurately, but others can be estimated only roughly, such as those accruing under Subcomponent 1.2 and Component 2.

12. **A financial analysis was done for potential direct beneficiaries** of (a) cash transfer recipients when supplemented with support to productive inputs and assets under Subcomponent 1.2, and (b) PIPs through Subcomponent 1.3 and potential beneficiaries of irrigation, natural resource management, and marketing investments through Subcomponent 2.2 and 2.3 activities.

Economic and Financial Analysis

13. **This section presents the PDAZAM ex-ante economic and financial analysis.** It is intended to assess the efficiency of the use of the resources of the Project by beneficiaries and by society in general; and to measure the financial viability and sustainability of investments, as well as their effects and impact on beneficiaries and on the whole country. The approach adopted for the economic and financial analysis is based on a cost-benefit analysis.

14. *Methodology and assumptions.* **The financial analysis assesses the Project impact on the financial situation of its key stakeholders.** The analysis helps clarify whether the targeted group will have sufficient incentives to participate in the Project—that is, whether operating revenues will outstrip operating costs, and whether incremental benefits arising from investments are positive. This analysis is important since some of the targeted groups must participate if the Project is to achieve at least the agricultural productivity dimension of its objective.

15. **A PDAZAM financial analysis has been carried out for project activities that readily lend themselves to quantification—specifically, activities mainly undertaken in Component 1.** A wide array of crop and livestock activities may be promoted through the type of support in Component 1 and investments in Component 2, making it practically impossible to predict beneficiary households and PIPs, or to account for all possible cases in the analysis. Based on studies conducted in the Mali drylands³³, and in view of the discussions held in the regions visited during mission identification and preparation, 10 stylized financial models have been developed to assess the project financial viability associated with

³¹ Veras et al., 2017.

³² Water for irrigation, quality seeds, fertilizers, pesticides, and equipment.

³³ For example, World Bank 2016.



three main classes of households (extremely vulnerable, very vulnerable, vulnerable, moderately vulnerable): (1) production of rainfed cereals, (2) production and processing of rainfed cereals, (3) local poultry farming, (4) cattle for milk production, (5) milk processing, (6) rainfed cereal seed production (7) sheep rearing, (8) rice-onion-tomato production, (9) production and repair of agricultural equipment, and (10) onion storage.

16. **Costs have been estimated for implementation of the following three project components:** (a) support for the improvement of the productivity and resilience of the beneficiary populations; (b) productive infrastructure at the community level; and (c) institutional support, crisis management, and coordination of the Project. Benefits are those generated by productive investments at the farm and enterprise level supported by the PDAZAM. These benefits are easily and objectively quantifiable. However, benefits from community-level investment and capacity building are positive but difficult to quantify. As a result, no attempt has been made to quantify them. These benefits have not been taken into consideration in the calculation of project profitability.

17. **The financial analysis has been conducted by laying out and projecting detailed farm budgets over a 15-year period.** The analysis is based on a comparison of the “with-project situation” (WPS) to the “without-project situation” (WOPS) (table A4.1). The production arising from Productive Cash Transfers (PCTs) (Subcomponent 1.2) and PIPs (Subcomponent 1.3) is assumed to be incremental to the reference situation. In the WOPS, it is assumed that additional investments would not take place; therefore, there would be no incremental benefits or expenses. In the WPS, the Project will support households by providing PCTs and farmer groups with grants for PIPs and strengthening their technical and managerial capabilities.

Table A4.1: Characteristics of the models under the without (WOPS) and with (WPS) project situation

Target group	Characteristics	Financial Models	
		Situation w/o project (WOPS)	Situation with project (WPS)
Very vulnerable household	Cereals “hunger-gap” period 6–9 months, agriculture occupation 3–4 months per year	Dry cereal production in rainfed cultivation and water recession on 20 ha for 10 households, or 2 ha per household; traditional seeds, tillage equipment worn, yields (412 kg/ha)	Production of dry cereals in rainfed cultivation and recession on 20 ha for 10 households, is 2 ha per household; quality seed, tillage equipment in good condition, performance (950 kg/ha)
		Transformation of dry cereal in a mortar and pestle, 600 kg per year	Transformation of dry cereal in the multifunctional platform (4,800 kg/year), also generating electricity for 200 light bulbs
		Local poultry, an initial core of 10 hens and 1 rooster bought at the market, 20% mortality rate, 384 marketed chickens	Local poultry, an initial higher performance core of 10 hens and 1 rooster, mortality rate of 5%, 714 marketed chickens
Vulnerable households	Cereals “hunger-gap” period 3–4 months, agriculture occupation 3–5 months per year	Production and repair of farm equipment; basic tools; 5 material types produced; 148 agricultural materials produced annually in total	Production and repair of farm equipment; powerful tools; 5 material types produced; 595 agricultural materials produced annually in total



		Breeding of sheep: initial core of 20 sheep and 1 ram purchased at the market, 20% mortality rate, rude food (straw and crop residues); 34 lambs marketed	Breeding of sheep: initial core of 20 sheep and 1 ram purchased from performing breeders, mortality rate of 2%, coarse food and compound; 114 lambs marketed
		Sampling of seed on the previous (325 kg/ha yield) harvest or purchase at the market of surpluses marketed by other producers	Quality seed production of dry cereals on 10 ha for 10 households, or 1 ha per household; tillage equipment in good condition, basic seed; performance (750 kg/ha)
Less vulnerable households	Cereals "soudure" period <3 months, agriculture occupation > 5 months per year	Breeding dairy cattle, initial core of 4 cows and 1 bull purchased at the market, crude feed (straw and crop residues), 7 liters of milk a day for 120 days, or 5,250 liters annually	Breeding dairy cattle, initial core of 4 cows and 1 bull purchased at the market, coarse food and feed, 10 liters of milk daily for 210 days, or 12,000 liters a year
		Transformation of milk curd with traditional tools, 30,000 liters per year	Transformation of milk curd, and yoghurt with high performance tools, 144,000 liters per year
		Production of upland rice and vegetables (onion) of recession on 20 ha to 40 households, is 0.5 ha per household, common seeds, rice yield: 3000 kg/ha, onion: 15,000 kg/ha	Production of upland rice and vegetables (onion) irrigated on 20 ha to 40 households is 0.5 ha per household; quality seeds, water control, rice yield: 5,000 kg/ha, onion: 25,000 kg/ha
		Conservation of onion 12 tons for 2 months in 3 basic infrastructures of 4 tons	Conservation of onion 12 tons for 4 months in a single infrastructure with metal racks

Financial Analysis

18. **The PDAZAM will promote activities in semiarid zones ranging from cereals and horticulture to livestock, and will span various segments of the value chains from input supply to production to artisanal or semi-industrial processing.** In these priority activities, the Project will facilitate access of small-scale producers and micro-enterprises to higher-performance and resilient technologies (irrigation, seed quality) for the production segment, and post-harvest equipment for conservation and processing and marketing technology for the storage/processing segments. Technical and economic information collected from typical farms or businesses has been validated by the national PDAZAM preparation team. Data were also collected from providers of private and public advisory services and potential beneficiaries. Compiled information was used to build stylized financial models. Main characteristics of the stylized models are presented in table A41 above.

19. **As shown in table A4.2.2, all models have good prospects for profitability that should make the activities attractive for small-scale poor farmers in the semiarid zones of Mali.** For all financial models



promoted, gross margins, internal rates of return, and additional net present value (NPV) are positive. In all models, the gross margins are higher in the situation with-project (WPS) than in the situation without-project (WOPS), releasing positive additional margins, estimated on average at US\$15,781. The financial internal rate of return (FIRR) is higher in WPS than in WOPS, for all models. Compared to WOPS, the Project will allow an average increase in NPVs of US\$41,986. Overall, all models indicate positive NPVs and cost-benefit ratios higher than 1.

Table A4.2.2: Summary of the profitability indicators for the financial models

Financial model	Gross margins WOPS	Gross margins WPS	NPV WOPS	NPV WPS	FIRR WOPS	FIRR WPS	B/C WOPS	B/C WPS
Sorghum/Production	2,491.0	3,316.0	646.6	6,253.6	13.0%	39.6%	1.0	1.5
Cereals/Processing	200.0	2,311.0	56.1	2,251.6	12.3%	18.4%	1.0	1.1
Local Poultry	1,678.7	2,403.2	1,627.8	5,705.8	27.3%	37.8%	1.1	1.2
Milk/Production	1,999.3	6,783.8	419.8	13,238.0	12.6%	25.1%	1.2	1.8
Milk/Processing	13,162.5	83,937.6	7,768.0	11,7891.3	22.3%	32.5%	1.0	1.1
Sorghum/Seeds/Production	1,428.0	6,326.0	1,729.4	16,933.6	11.3%	16.8%	1.1	3.2
Sheep Rearing	469.3	2,488.3	806.2	7,213.2	13.2%	16.5%	1.1	1.3
Rice/Onions/Tomatoes	13,742.0	27,658.0	37,939.3	125,867.4	25.6%	39.5%	1.3	1.6
Agricultural Equipment	17,490.0	72,200.0	29,506.1	191,529.0	47.3%	67.7%	1.2	1.6
Onions/Storage	411.8	3,575.7	343.8	13,401.5	21.7%	33.1%	1.0	1.2
Average								

Note: B/C = benefit/cost ratio; FIRR = financial internal rate of return; NPV = net present value; WOPS = situation without-project; WPS = situation with-project.

20. **Methodology and assumptions. The economic analysis aims at assessing project viability from the standpoint of the overall national economy.** It is based on the aggregation of individual incremental net benefits calculated through the models developed in the financial analysis, with a few adjustments highlighted below, and in accordance with the targets set in the results framework. The following assumptions are made: (a) economic costs were generated using the COSTAB³⁴ for the Project; (b) economic benefits have been estimated at 90 percent of the financial benefits, with retail prices computed as farm-level or factory-level product prices, without transport costs, taxes, or transfer between agents; (c) economic cost of labor was considered, corresponding to about 50 percent of labor financial costs, in view of the high unemployment rate and underemployment in Mali; (d) the discount rate used is 8.3 percent, corresponding to the interest rate of the capital in the long term; (e) the period of analysis is 15 years in an ex-ante financial and economic analysis; (f) economic cost selected is the total cost deducted from the amount of the “grants for PIPs” category, already taken into account in financial models; and (g) 100 percent of the quantifiable benefits of the Project excluding community investments and capacity-building activities, which benefits are difficult to quantify.

21. **Based on the above assumptions, the NPV is about US\$17.6 million. The economic rate of return (EIRR) of the Project is about 21.3 percent.** Sensitivity analysis (table A2.3) based on project costs

³⁴ COSTAB is designed to help organize and analyze project costs. COSTAB consists of a set of divisions (data structures) that organize the data that COSTAB uses to produce its reports. Each division specifies a coherent set of data and relationships.



increases of 10 percent, 20 percent, and 30 percent gives an EIRR of 20.1 percent, 19.0 percent, and 17.9 percent, respectively. The corresponding NPVs are US\$16.6 million, US\$15.5 million, and US\$14.5 million, respectively. The sensitivity analysis based on reductions of 10 percent, 20 percent, and 30 percent of additional gross margins gives an EIRR of 20.0 percent, 18.4 percent, and 16.7 percent, respectively. The corresponding NPVs are, respectively, US\$14.8 million, US\$12.0 million, and US\$9.2 million. The sensitivity analysis based on a one-year or two-year delay in the realization of benefits gives an EIRR of 18.6 percent and 16.0 percent, respectively. The corresponding NPVs are, respectively, US\$14.0 million and US\$10.5 million.

Table A2.3: Summary of sensitivity analysis

	EIRR	NPV @8% (millions of CFAF)	NPV @8% (US\$)
Base Scenario (NPV = 0)	21.3%	33,190,5	17,590,940.6
Costs + 10%	20.1%	31,255,3	16,565,288.7
Costs + 20%	19.0%	29 320,1	15,539,636.7
Costs + 30%	17.9%	27,384,9	14,513,984.7
Benefits - 10%	20.0%	27,936,2	14,806,194.6
Benefits - 20%	18.4%	22,682,0	12,021,448.5
Benefits - 30%	16.7%	17,427,7	9,236,702.5
Benefits delayed by 1 year	18.6%	26,336,1	13,958,112.5
Benefits delayed by 2 years	16.0%	19,818,4	10,503,760.9

Note: US\$1 = CFAF 530.

Greenhouse Gas (GHG) Accounting

22. The impact of the Project on Green House Gas (GHG) emissions was estimated using the EX-ACT tool, developed by FAO, to provide estimations of the impact of AFOLU (agriculture, forestry, and other land use) projects and policies on the carbon balance. EX-ACT is a land-based accounting system, estimating CO₂e stock changes (i.e. emissions or sinks of CO₂) expressed in equivalent tons of CO₂ per hectare and year. The tool was designed using mostly data from the IPPCC Guidelines for National Greenhouse Gas Inventories (IPCC, 2006), which furnishes EX-ACT with recognized default values for emission factors and carbon values in soils and biomass (the so-called “Tier 1 level” of precision).

23. The GHG accounting calculations undertaken in the EX-ACT model were based on characteristics in the West African tropical dry regime with Mali being largely endowed with high activity clay mineral soils interspersed with sandy soils in the North and the land use and crop management practices for WPS and WOPS. The project covers some 12 districts in the regions of Kayes, Koulikoro, Segou, and Mopti representing some 40 percent of the land area of these regions or roughly 4 million ha. The assumptions made are as follows:

- (i) Under the WOPS scenario of 4 million ha, an area of approximately 2.2 million ha of land is cultivated with seasonal crops while 1.8 million ha remain as moderately degraded grassland, an area likely to deteriorate further without project intervention.



(ii) In WPS, the seasonally cultivated area will increase to some 2.4 million ha while reducing grazing pressure on 1.6 million ha of the overall grassland land area due to higher dry-mass production.

(iii) WPS also assumes Land Use Changes (LUCs) with an increase of 1,010 ha of increase orchard crops, some 186,520 ha of additional annual crops, mainly millet, sorghum and other coarse grains and dry pulses, and some 30,000 ha of lowlands developed for flooded rice production.

(iv) The improved production will provide more crop residue and thus a small increase in livestock population along an estimated 1 percent per year representing some 86,000 additional animals per year.

(v) Additional use of fertilizers, agrochemicals and other inputs on existing areas, as well as on the newly developed cultivated areas amounting to some 2.40 million ha.

24. The carbon balance under this scenario is significant representing a reduction of some 43 percent relative to the WOPS option. The combination of the project's activities would be leading to a total reduction in CO₂ emissions of 4.51 million mt/equivalent over a period of 20 years starting from project implementation. Per year, the mitigation potential is estimated at -225,552 tons of CO₂-e, or -0.1 tons of CO₂e per hectare (the summary table of results is included in Annex 5). Assigning an economic value to this mitigation potential is a complex task. According to the World Bank Guidance Note on the Social Value of Carbon (2014), the value of carbon can be derived from three different measures: (i) the social cost of carbon; (ii) the marginal abatement costs; and (iii) the carbon market prices. The recent draft Guidance Note on Shadow Price of Carbon in Economic Analysis (September 2017) recommends "projects' economic analysis use a low and high estimate of the carbon price starting at US\$40.0 and \$80.0 respectively, in 2020 and increasing to US\$50 and 100 by 2030". Marginal abatement costs are designed to reflect the carbon price necessary to achieve various climate change targets. Carbon market prices are the market value of CO₂ emission reductions or sequestration (offsets) that are registered and sold through various market structures. Carbon market prices currently average US\$8 per ton. Following the World Bank guidelines, this analysis presents three scenarios (in addition to the baseline one without the environmental benefits): using the low and high range social cost of carbon.

25. When accounting for GHG emissions the following emerges. The EIRR in the base case increases from 21.3 percent to 25.3 percent at US\$8 per ton of CO₂ equivalent, to 50.3 percent at US\$40 per ton, and to over 89.2 percent at US\$80 per ton. Net present value (NPV) at 8 percent discount rate increase from US\$17.6 million to US\$21.9 million at US\$8 per ton, to US\$39.28 million at US\$40.0 per ton and to US\$61.0 million at US\$80 per ton of CO₂ equivalent.



ANNEX 5: GREENHOUSE GAS ACCOUNTING

Corporate Mandate

1. The World Bank has adopted, in its 2012 Environment Strategy, a corporate mandate to conduct greenhouse gas (GHG) emissions accounting for investment lending in relevant sectors. The ex-ante quantification of GHG emissions is an important step in managing and ultimately reducing GHG emission, and it is becoming a common practice for many international financial institutions.

Methodology

2. To estimate the impact of agricultural investment lending on GHG emission and carbon sequestration, the World Bank has adopted the Ex-Ante Carbon-balance Tool (EX-ACT), developed by FAO in 2010. EX-ACT allows the assessment of a project's net carbon-balance, defined as the net balance of carbon dioxide (CO₂)-equivalent GHG emitted or sequestered resulting from project implementation compared to a without-project scenario. EX-ACT estimates the carbon stock changes (emissions or sinks), expressed in equivalent tons of CO₂ per hectare and per year.

Project Boundary

3. The agricultural land in the 12 districts covered by the project represent an estimated 4.03 million ha of grasslands of which some 2.2 million ha are currently cultivated in an extensive manner with little fertilizer inputs. The balance of this land is moderately degraded grassland that has a tendency to degrade further without intervention in the project area. The project will increase the cultivated area by some 217,000 ha to a total of 2.4 million ha under cultivation leaving some 1.6 million as grassland that will suffer from reduced pressure due to increased.

- Improved practices on annual crops including dryland crops consisting of millet, sorghum, maize, wheat, fonio, groundnut and Niebe up amounting to 2,223,379 ha WOPS to 2,409,899 ha WPS including newly cultivated areas.
- Flooded rice intervention practices improved on existing low lands of 25,000 ha as well as newly developed low lands amounting to 30,000 ha for a total of 55,000ha of rice area with improved water management regime.
- Improved fertilizer application in the entire cultivated area of the project area amounting to some 685 thousand tons.

Results

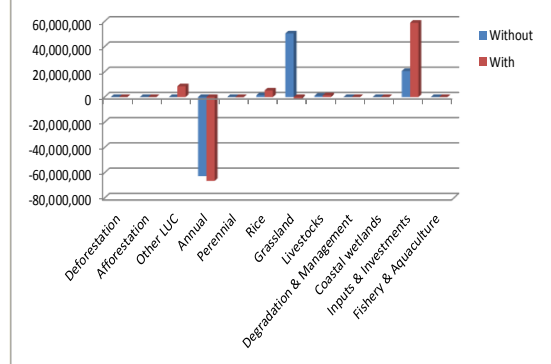
4. The improvement in carbon balance under this scenario is significant representing a reduction of some 43 percent relative to the WOPS option. The combination of the project's activities would be leading to a total reduction in CO₂ emissions of 4.51 million mt/equivalent over a period of 20 years starting from project implementation. Per year, the mitigation potential is estimated at -225,552 tons of CO₂-eq, or -0.1 tons of CO₂-eq per hectare.



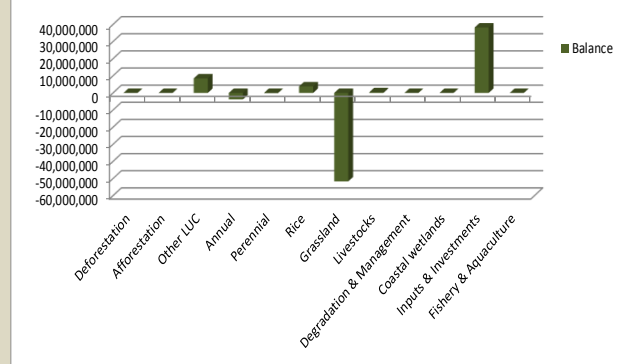
Figure A5. 1: Impact of Project Investments on GHG Emissions and Carbon Sequestration

Project Name	Mali Dryland Development P.	Climate	Tropical (Dry)	Duration of the Project (Years)	20						
Continent	Africa	Dominant Regional Soil Type	HAC Soils	Total area (ha)	4036110						
Components of the project	Gross fluxes			Share per GHG of the Balance					Result per year		
	Without	With	Balance	All GHG in tCO ₂ eq			N ₂ O	CH ₄	Without	With	Balance
	All GHG in tCO ₂ eq			CO ₂	N ₂ O	CH ₄					
	Positive = source / negative = sink						Biomass	Soil	Other		
Land use changes											
Deforestation	0	0	0	0	0	0	0	0	0	0	0
Afforestation	0	0	0	0	0	0	0	0	0	0	0
Other LUC	0	8,516,702	8,516,702	-714,772	9,185,007	46,467	0	0	0	425,835	425,835
Agriculture											
Annual	-62,713,849	-66,434,923	-3,721,074	0	-3,721,074	0	0	0	-3,135,692	-3,321,746	-186,054
Perennial	-33,660	-152,815	-119,155	-113,322	-5,833	0	0	0	-1,683	-7,641	-5,958
Rice	1,353,625	5,167,617	3,813,992	0	0	0	3,813,992	0	67,681	258,381	190,700
Grassland & Livestocks											
Grassland	50,403,552	-1,241,161	-51,644,712	0	-51,644,712	0	0	0	2,520,178	-62,058	-2,582,236
Livestocks	969,171	1,393,183	424,012	0	0	230,244	193,769	0	48,459	69,659	21,201
Degradation & Management											
Coastal wetlands	0	0	0	0	0	0	0	0	0	0	0
Inputs & Investments											
Inputs & Investments	20,668,352	58,887,538	38,219,185	0	0	2,785,231	35,433,954	0	1,033,418	2,944,377	1,910,959
Fishery & Aquaculture											
Fishery & Aquaculture	0	0	0	0	0	0	0	0	0	0	0
Total	10,647,191	6,136,141	-4,511,049	-828,094	-46,186,613	2,785,231	35,710,665	4,007,761	532,360	306,807	-225,552
Per hectare	3	2	-1	0.5	-11.4	0.7	8.8	1.0			
Per hectare per year	0.1	0.1	-0.1	0.0	-0.6	0.0	0.4	0.0	0.1	0.1	-0.1

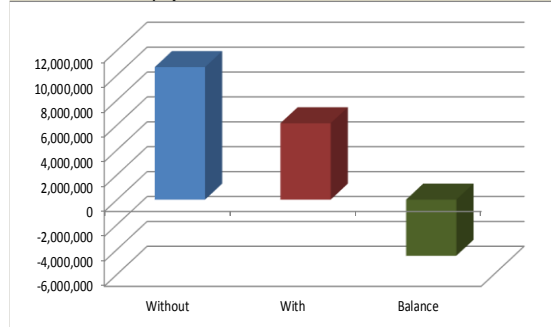
Fluxes per component



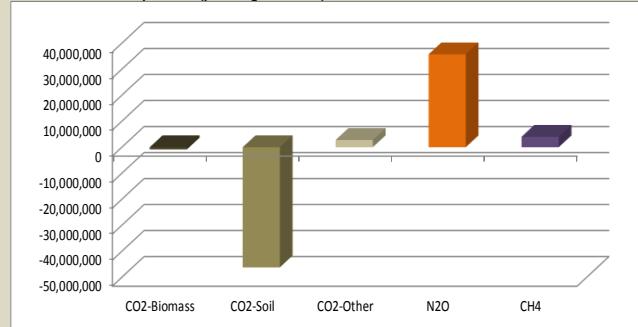
Balance per component



Total without and with project and balance



Share of the balance per GHG (plus origin for CO₂)



Note: CO₂ = carbon dioxide; LUC = Land Use Changes; tCO₂-eq = tons of carbon dioxide equivalent.



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