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The World Bank

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Report No: PAD2039

INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED CREDIT

IN THE AMOUNT OF EURO 64 MILLION

(US\$70 MILLION EQUIVALENT)

TO THE

REPUBLIC OF MALI

FOR A

RURAL MOBILITY AND CONNECTIVITY PROJECT

June 23, 2017

Transport and ICT Global Practice

Africa Region

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CURRENCY EQUIVALENTS

(Exchange Rate Effective on April 30, 2017)

Currency Unit = EUR

EUR0.914 = US\$1

US\$1.371 = SDR1

FISCAL YEAR

January 1 - December 31

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Country Director: Soukeyna Kane

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ABBREVIATIONS AND ACRONYMS

ADR	Regional Development Agency (<i>Agence de Développement Régional</i>)
AF	Additional Financing
AGEROUTE	Road Maintenance Agency (<i>Agence d'exécution des travaux d'entretien routier</i>)
AGETIER	Rural Civil Works and Equipment Agency (<i>Agence d'exécution des travaux d'infrastructure et d'équipements ruraux</i>)
ANASER	National Road Safety Agency (<i>Agence Nationale de la Sécurité Routière</i>)
BP	Bank Procedure
CBO	Community-Based Organization
CE	Citizen Engagement
CMDT	Malian Company for Textile Development (<i>Compagnie Malienne pour le Développement du Textile</i>)
CPF	Country Partnership Framework
DA	Designated Account
DGMP	General Directorate of Procurement (<i>Direction Générale des Marchés Publics</i>)
DFM	Directorate of Finance and Material (<i>Direction des Finances et du Matériel</i>)
DNA	National Directorate of Agriculture (<i>Direction Nationale de l'Agriculture</i>)
DNACPN	National Directorate for the Control of Pollution and Nuisances (<i>Direction Nationale pour le Contrôle des Pollutions et Nuisances</i>)
DNR	National Directorate of Roads (<i>Direction Nationale des Routes</i>)
EIRR	Economic Internal Rate of Return
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESS	Environmental Safeguards Specialist
FM	Financial Management
FY	Fiscal Year
GDP	Gross Domestic Product
GoM	Government of Mali
GRM	Grievance Redress Mechanism
GRS	Grievance Redress Service
ICB	International Competitive Bidding
IFC	International Finance Cooperation
IFR	Interim Financial Report
IDA	International Development Association
LCS	Least-Cost Selection
M&E	Monitoring and Evaluation
MED	Ministry of Equipment and Accessibility (<i>Ministère de l'Équipement et du Désenclavement</i>)
NCB	National Competitive Bidding
NCU	National Coordination Unit
NGO	Non-Governmental Organization
NPV	Net Present Value
OHADA	Organization for the Harmonization of Business Law in Africa (<i>Organisation pour l'Harmonisation du Droit des Affaires en Afrique</i>)
OP	Operational Policy
PAD	Project Appraisal Document
PDO	Project Development Objective

PP	Procurement Plan
PPR	Post Procurement Review
QBS	Quality Based Selection
QCBS	Quality and Cost Based Selection
RAP	Resettlement Action Plan
RAI	Rural Access Index
RPF	Resettlement Policy Framework
SCD	Systematic Country Diagnostic
SC	Steering Committee
TC	Technical Committee
ToR	Terms of Reference

**BASIC INFORMATION**

Is this a regionally tagged project?	Country(ies)	Financing Instrument
No		Investment Project Financing

- ☐ Situations of Urgent Need of Assistance or Capacity Constraints
- ☐ Financial Intermediaries
- ☐ Series of Projects

Approval Date	Closing Date	Environmental Assessment Category
17-Jul-2017	30-Dec-2022	B - Partial Assessment

Bank/IFC Collaboration
No

Proposed Development Objective(s)

The Project Development Objective is to improve and sustain road access of farming communities to markets and basic services in the project area, and, in the event of an eligible crisis or emergency, to provide immediate and effective response to it.

Components

Component Name	Cost (US\$, millions)
Rural roads improvement	63.80
Routine maintenance and road safety	8.60
Operational support	3.60
Contingent emergency response	0.00

**Organizations**

Borrower : REPUBLIC OF MALI

Implementing Agency : Minister of Equipment and Accessibility

PROJECT FINANCING DATA (US\$, Millions)

☒ Counterpart Funding	☐ IBRD	☒ IDA Credit	☐ IDA Grant	☐ Trust Funds	☐ Parallel Financing
		☐ Crisis Response Window	☐ Crisis Response Window		
		☐ Regional Projects Window	☐ Regional Projects Window		

Total Project Cost:
76.00

Total Financing:
76.00

Of Which Bank Financing (IBRD/IDA):
70.00

Financing Gap:
0.00

Financing (in US\$, millions)

Financing Source	Amount
Borrower	6.00
IDA-61240	70.00
Total	76.00

Expected Disbursements (in US\$, millions)

Fiscal Year	2018	2019	2020	2021	2022	2023
Annual	10.00	17.00	20.00	18.00	5.00	0.00
Cumulative	10.00	27.00	47.00	65.00	70.00	70.00



INSTITUTIONAL DATA

Practice Area (Lead)

Transport & ICT

Contributing Practice Areas

Agriculture

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	● Moderate
3. Sector Strategies and Policies	● Moderate
4. Technical Design of Project or Program	● Moderate
5. Institutional Capacity for Implementation and Sustainability	● Substantial
6. Fiduciary	● Moderate
7. Environment and Social	● Moderate
8. Stakeholders	● Substantial



9. Other

10. Overall

● High

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

✓

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

Schedule 2. Section I.A.1.

The Recipient shall vest in its Ministry of Equipment and Accessibility the responsibility of implementing the overall Project. To that end, the Recipient shall, no later than three (3) months after the Effective Date, establish and thereafter maintain a Project Steering Committee until the completion of the Project, with terms of reference and staffing satisfactory to the Association, to be responsible for ensuring strategic direction, overall oversight, and coordination for the Project.



Sections and Description

Schedule 2. Section I.B.

The Recipient shall commit a total amount of not less than six million United States Dollars (US\$ 6,000,000) for the exclusive purpose of providing its own financing for activities under Part B.2. and Part C.2. of the Project (“Counterpart Funding”) in the following manner:

- a) not later than March 31 of each year of Project implementation, approve the following amounts allocated from the funds intended for road maintenance managed by the Road Authority for the exclusive purpose of providing its own financing for activities under Part B.2. of the Project: five hundred thousand United States Dollars (US\$ 500,000) for 2018; five hundred thousand United States Dollars (US\$ 500,000) for 2019; one million five hundred thousand United States Dollars (US\$ 1,500,000) for 2020; one million five hundred thousand United States Dollars (US\$ 1,500,000) for 2021; and one million six hundred thousand United States Dollars (US\$ 1,600,000) for 2022.
- b) (i) not later than July 31, 2017, open and maintain until the completion of the Project, a separate account for the exclusive purpose of providing its own financing for activities under Part C.2. of the Project (“Project Account”) in a total amount of four hundred thousand United States Dollars (US\$ 400,000); and (ii) not later than August 31, 2017, deposit the sum of two hundred thousand United States Dollars (US\$ 200,000) into the Project Account, and not later than August 31, 2018, deposit the sum of two hundred thousand United States Dollars (US\$ 200,000) into the Project Account.

Sections and Description

Schedule 2. Section II.A.2.

Notwithstanding Section II.A.1 of Schedule 2 to the Agreement above, no later than thirty (30) months after the Effective Date, or such later date as may be agreed upon by the Recipient and the Association in writing, the Recipient and the Association shall carry out a mid-term review of the Project, covering the progress achieved in the implementation of the Project. The Recipient shall cause the NCU to prepare, under terms of reference satisfactory to the Association, and furnish to the Association one (1) month prior to the beginning of such mid-term review of the Project, or on such other date agreed upon with the Association in writing, a report integrating the results of the monitoring and evaluation activities performed pursuant to this Agreement, on the progress achieved in the carrying out of the Project during the period preceding the date of such report, and setting out the measures recommended to ensure the efficient carrying out of the Project and the achievement of the Objective of the Project during the period following such date.

Sections and Description

Schedule 2. Section I.A.6.



The Recipient shall, no later than three (3) months after the Effective Date:

- a) update the PIM and the Manual of Administrative Procedures, Financial Management, and Procurement, in form and substance satisfactory to the Association;
- b) acquire necessary equipment for the archive and hire an archivist for filing Project related information and data; and
- (c) hire an internal auditor with qualification and experience satisfactory to the Association.

Sections and Description

Schedule 2. Section I.A.7

The Recipient shall, no later than six (6) months after the Effective Date, hire an external auditor with qualification and experience satisfactory to the Association.

Conditions

Type

Disbursement

Description

Schedule 2. Section IV.B.1

Notwithstanding the provisions of Part A of this Section, no withdrawal shall be made:

- a) for payments made prior to the date of this Agreement, except that withdrawals up to an aggregate amount not to exceed three hundred thousand Euros (€ 300,000) may be made for payments made prior to this date but on or after June 1, 2017, for Eligible Expenditures under Category (1).
- b) for Emergency Expenditures under Part D of the Project under Category (4), unless and until the Association has notified the Recipient of its satisfaction that all of the following conditions have been met in respect of said activities:
 - (i) 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;
 - (ii) 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 this Agreement, for the purposes of such activities;
 - (iii) the Recipient's Coordinating Authority has adequate staff and resources, in



accordance with the provisions of Section I.E.2 of Schedule 2 to this Agreement, for the purposes of said activities; and

(iv) the Recipient has adopted an 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.

PROJECT TEAM

Bank Staff

Name	Role	Specialization	Unit
Cheick Omar Tidiane Diallo	Team Leader(ADM Responsible)	Transport Specialist	GTI08
Vincent Vesin	Team Leader	Senior Transport Specialist	GTI08
Mahamadou Bambo Sissoko	Procurement Specialist(ADM Responsible)	Senior Procurement Specialist	GGO07
Tahirou Kalam	Financial Management Specialist	Financial Management Specialist	GGO26
Aoua Toure Sow	Team Member	Program Assistant	AFCW3
Emeran Serge M. Menang Evouna	Safeguards Specialist	Environmental Safeguards	GEN07
Fabio Galli	Team Member		GTI08
Joanne Catherine Gaskell	Team Member		GFA07
Khalid Boukantar	Team Member	Program Assisant	GTI05
Konjit Negash Gebreselassie	Team Member		GTI08
Najat Yamouri	Team Member	Citizen Engagement	GSU01
Richard Abdulnour	Team Member	Agile Fellow	MNAVP
Salamata Bal	Safeguards Specialist	Senior Social Dev. Spec.	GSU01
Yeyande Kasse Sangho	Team Member	Senior Agribusiness Specialist	GFA01



Extended Team

Name	Title	Organization	Location
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I. STRATEGIC CONTEXT

A. Country Context

1. **Mali is a large landlocked country with a population of about 15.3 million, growing at about 3 percent per year, and with a land area of about 1,238,000 square km.** The population is unevenly distributed, as 60 percent of the country's surface area is desert. Mali is also one of the world's poorest countries, with a Gross Domestic Product (GDP) per capita of only US\$724 (Atlas Method) and a Human Development Index ranking 175th out of 188 countries.¹ Life expectancy is low (57 years), malnutrition is high (28 percent of children under five are stunted)², and most of its population is illiterate (69 percent of adults).³ The structure of the economy is predominantly rural and informal, with 64 percent of the population residing in rural areas⁴ and with 80 percent of the jobs in the informal sector.⁵

2. **The incidence of poverty in Mali is high and predominantly rural.** Prior to the 2012 political and security crisis, Mali had made some progress in reducing poverty thanks to increased agricultural production and better functioning value chains⁶, which led to a decline in the incidence of poverty from 60 percent in 2000 to 51 percent in 2010. However, since then, there have been no improvements in the poverty rate and about 90 percent of the poor reside in rural areas. Geographically, poverty is concentrated in the southern tier of the country, where around 90 percent of the country's population resides.

3. **The Malian economy grew between 1995 and 2010 at approximately 5.0 percent per year.** In 2012, as a result of the military coup and the insurgency in the north of the country, Mali's GDP growth slowed dramatically to about 1.2 percent. Growth resumed in 2013, following the reestablishment of the constitutional order and improved security situation in the north. It has averaged about 4 percent since 2013, despite a recent deterioration in the international terms of trade for Mali. Taking into account the weight of the agricultural sector (about 40 percent of GDP), the Malian economy remains largely dependent on the performance of the agricultural sector.

4. **Improving Mali's long-term growth potential will require greater productivity in the agricultural sector.** Mali's economy remains dominated by the primary sector, as reflected in the country's low ranking on the economic complexity⁷ index – 102nd out of 128 countries.⁸ This means that the country will need to focus on improving the competitiveness of the primary sector, as key to reducing rural poverty. In addition, Mali could capture a larger market share in specific value chains where it has higher comparative advantage such as the production and export of cereals, tropical fruits, livestock, fish, and cotton.

B. Sectoral and Institutional Context

B.1 Sectoral context

5. **Growth in the agricultural sector is constrained by a variety of factors including transport bottlenecks.** Thanks to good rainfall patterns and increased productivity, Mali's agriculture sector has outperformed non-agriculture sectors in the past decade, with a trend growth rate of over 10 percent.



Agriculture (including agro-pastoralism) is Mali's biggest employer, accounting for 63 percent of all jobs and 86 percent of jobs in rural areas. There is significant spatial variation in agricultural performance across regions in rural Mali, with high agricultural productivity in the irrigated fluvial basin of the Niger River and in the south. In contrast, northern, dryland cropping regions of Mali face lower yield growth and lower farm efficiency. Part of this variation in productivity is agro-climatic: dryland cropping zones face lower rainfall, higher rainfall variability, and more soil constraints. However, important sources of farm inefficiency in the dryland cropping zone include non-environmental factors such as access to seeds, information constraints, gender disparities, and transport bottlenecks.⁹ In the southern cropping zone, the primary constraints to greater agricultural productivity include poor health, low use of agricultural technologies, and lack of access to markets.

6. **Road transport is by far the dominant transport mode in Mali.** The country has a total road network of about 89,000 km of which: (a) 14,000 km are national roads; (b) 7,000 km are regional roads; (c) 29,000 km are local roads; and (d) 39,000 km are communal roads. Among these 89,000 km, only 23,000 km have been classified and only about 5,690 km are paved. The rural access index¹⁰ (RAI) for Mali is about 22 percent, which is well below the average of 34 percent for Sub-Saharan Africa. The RAI of the southern part of the country (about 1/3 of the land area and 90 percent of the population) is about 33 percent. The rural road network consists of communal unpaved roads connecting villages, within the same communes or across several rural communes, to the main roads (national roads or regional roads). The two other modes of transport besides road are the railway connecting Dakar (Senegal) to Koulikoro, and inland water transport on the Niger River from Koulikoro to Gao and on the Senegal River from Kayes to the border with Senegal. The modal share of road transport in Mali is currently around 90 percent and growing for both freight and passengers.

B.2 Sectoral challenges

7. **Poor overall road connectivity.** Road connectivity poses a major challenge both intra and inter regionally for three major reasons. First, the quality of the rural road network remains poor in terms of service level and all-season passability. Secondly, road connectivity within the country remains inadequate, due to a poorly developed and maintained secondary and tertiary road network. Thirdly, transport prices to reach international markets via the nearest seaports (Conakry, Dakar, and Abidjan) are among the highest in the world due to a combination of poor infrastructure, non-tariff barriers, inefficient transport services provision, and lengthy customs clearance procedures.

8. **Poor rural road network passability during rainy season.** During the rainy season (June – September), many rural roads become impassable for long (3-4 months) periods of time. This results in consumer and producer prices peaks during the rainy season. Conversely, heavy investments over the last decade or so in the core road network connecting regional capitals seems to have reduced the differences in consumer prices between regions. This is illustrated by the decline in the difference between the maximum and the minimum regional prices at the national level, suggesting that better roads improve market integration and connectivity.¹¹ Furthermore, with climate change, high rainfall events that cut off and damage rural roads are expected to become more frequent, particularly in Mali's dryland zone. This may further reduce the all-weather passability of large parts of the rural road network.



9. **Inadequate capacity and funding to maintain the rural road network.** A road authority in charge of managing a second-generation road fund, which collects resources through fuel levy, toll fees and overloading fines, has been in place since 2002 to finance the maintenance of the road network. In 2016, the road authority mobilized about US\$45 million to finance the maintenance of mainly national, regional, and urban roads, the repair of ferryboats, and the rehabilitation of long-span bridges on national road corridors. However, the resources mobilized only cover about 55 percent of the maintenance needs of the national, regional, and urban road networks. Until recently, the road authority was not mandated to finance the maintenance of the rural road network since this responsibility had been transferred in principle to local governments. Unfortunately, local governments have neither the resources nor the capacity to maintain the rural network effectively, which means that large parts are now in poor condition.

10. **Poor road access negatively affects the development of agricultural value chains in southern high agricultural productivity zone.** A rural access study financed by the recently closed Mali Second Transport Sector Project (P090075) showed that many rural roads in the southern region of Sikasso are impassable during the rainy season, leaving about 74 percent of villages isolated. Sikasso is the country's biggest production basin for mango, whose harvest time coincides with the rainy season. Because of poor road access, Mali's exporters and processors have great difficulties in securing an adequate mango supply to meet demand. The value chain for cotton, along with other promising high-value crops, face similar constraints.

11. **Transport remains a major bottleneck for farmers in the dryland zone, where one third of Mali's poor live.** A study of nationally representative plot-level agricultural data (Living Standards Measurement Study - Integrated Surveys on Agriculture, known as LSMS-ISA 2014) shows that faster travel time to markets and/or access to motorized transport significantly increase farm revenues. This is because the dryland agricultural zone has lower population density, longer distances from farms to markets, lower input use, and higher crop prices compared to the southern zone. In general, the dryland crop zones serve as a trade corridor with grain moving from the south towards the food deficit region in the north, and livestock moving from the north towards the south.

B.3 Institutional context

12. **The Ministry of Equipment and Accessibility (*Ministère de l'Équipement et du Désenclavement* - MED) is responsible for the entire road network** through the National Directorate of Roads (*Direction Nationale des Routes* - DNR). A road maintenance contracting agency (*Agence d'exécution des travaux d'entretien routier* - AGEROUTE) is in charge of procuring and managing yearly routine and periodic maintenance contracts. As mentioned earlier, a road authority finances the maintenance of the road network. The National Policy on Transport, Transport Infrastructure, and Accessibility (2015-2025) and the National Rural Transport Strategy (2008) are the strategic documents guiding all interventions in the transport sector.

13. **When the National Decentralization Policy Framework was adopted in 2005, the responsibility of managing rural infrastructures, including rural roads, was transferred to the local governments.** Regional Development Agencies (*Agence de développement régional* - ADR) were recently created as decentralized entities in charge of implementing infrastructure development operations at the local level. Given that local governments do not have the capacity to improve and maintain the rural roads,



the DNR and the National Directorate of Rural Engineering continue to play a vital technical support role to the local governments.

14. **The Ministry of Agriculture is responsible for the entire agricultural sector through the National Directorate of Agriculture, the National Directorate of Rural Engineering, the Institute of Rural Economy, and several rural development agencies.** A rural infrastructure contracting agency (*Agence d'exécution des travaux d'infrastructure et d'équipements ruraux* - AGETIER) is in charge of procuring and managing rural infrastructure ranging from irrigated perimeters and storage facilities to rural roads. The agricultural orientation law, which combines all the laws and regulations of the agricultural sector, guides the agricultural development policy (2011-2020). In addition, there is a ten-year action plan to support the implementation of the policy called the National Investment Plan for the Agricultural Sector (2015-2025), which has as a target about 5,800 km of rural roads improved to open up agricultural production basins by 2025.

C. Higher Level Objectives to which the Project Contributes

15. **The proposed project directly supports the Government's Strategic Framework for Economic Recovery and Sustainable Development of Mali (2016-2018).** The two areas of focus that it supports are: (i) infrastructure development to improve the territorial network effect and interconnection of transport infrastructure and equipment; and (ii) rural development and food security to promote intensive, diversified, and sustainable agriculture, ensuring self-sufficiency and competitiveness in sub-regional and international markets.

16. **The proposed project supports the World Bank's Country Partnership Framework (CPF) for the period of FY16-19 (Report No.94005-ML).** The World Bank's 2015 Systematic Country Diagnostic (Report No.94191-ML) for Mali identified poor access to markets, lack of off farming opportunities, and of competition in the transport sector, as binding constraints to improving the livelihoods of poor farmers and pastoralists. The proposed project is fully aligned with CPF objective 2.1 Improve productive capacity and market integration of farmers and pastoralists; and CPF objective 2.3 Improve infrastructure and connectivity to all Malians. Thus, the proposed project will directly contribute to the CPF's expected outcome of "expanded access to markets in key agricultural value chains".

17. **The proposed project also supports the World Bank Group's Mali Agri Joint Implementation Plan (FY16-19) focused on agriculture and livestock,** which aims at "reducing poverty through private sector investment in agribusiness". The plan's actions target governance, infrastructure, non-financial services, and access to finance. The proposed project will contribute to the infrastructure aspect by improving road access via the improvement of rural roads located in the production basins of the Sikasso and Koulikoro regions. Improved road access will better integrate key value chains by facilitating the movement of agricultural products to markets for domestic consumption and agro processing. In the dryland zone, improved road access will facilitate the distribution of agricultural inputs to small-holder farmers, as well as the movement of crops from the southern zone (surplus zone) to the dryland zone (deficit zone).

D. Synergies with agriculture programs and projects



18. In the Sikasso region, the proposed project is expected to cover the financing gap of rural roads needs for key value chains such as mangoes, potatoes, cotton and animal feed. It will complement the Mali Agricultural Competitiveness Support Project (PACAM – P151449) financed by the World Bank, the Agro-Pastoral Value Chain Development Program and the Priority Project for Local Economic Development (PPDEL) both financed by the Swiss cooperation, and the Project for the Development of the Cotton Value Chain financed by the French Development Agency.

19. In the Koulikoro region, the proposed project will create the road accessibility enabling conditions for: (i) a future smallholder productivity project to be financed by the World Bank in FY19 in Mali's dryland; (ii) the current e-voucher program for inputs distribution in the Upper Niger Valley zone, financed by USAID; and (iii) small scale irrigation (*Irrigation de Proximité* - IPRO) financed by the European Development Fund. Furthermore, the proposed project will also seek synergies with the ongoing Regional Sahel Pastoralism Support Project in Mali (P147674 – PRAPS/M) for physical access to livestock live animal markets, and with the proposed Livestock Sector Development Support Project (P160641 – PADEL/M) for access to livestock and fish farming intensification inputs and marketing needs.

II. PROJECT DEVELOPMENT OBJECTIVES

A. PDO

20. **The Project Development Objective is to improve and sustain road access of farming communities to markets and basic services in the project area,** and in the event of an eligible crisis or emergency, to provide immediate and effective response to it.

21. **The project area** includes the administrative region of Sikasso and the administrative region of Koulikoro except the circle of Nara. Sikasso is geographically located in the high productivity agro-ecological zone, called the agricultural surplus zone or the southern zone. Koulikoro is geographically located in the low productivity agro-ecological zone, referred to as the dryland or the Sahelian zone.



B. Project Beneficiaries

22. The project will directly benefit **farming communities** (about 650,000 people) near the selected rural roads to be improved.¹² These communities, in particular women who perform a significant part of agricultural work, currently live isolated from markets and basic services due to poor road access. The proposed project is expected to reduce isolation, provide better access to agricultural inputs, and provision of extension services to the farming communities, in order to increase their marketable surpluses. The proposed project will also provide construction related short-term/medium term jobs during the civil works and related routine road maintenance phases. The proposed project will also directly benefit farming communities by providing them with all-weather access to basic services like schools, health centers, and government offices.

23. The proposed project will indirectly benefit the **urban population** near the project area. This population will benefit from having more and cheaper locally-produced agricultural products available for consumption.

24. The proposed project will also indirectly benefit the **agro-industry** by facilitating the flow of agricultural products from farmers to agro-industries and traders who need these products for processing, exports, or domestic trade.

C. PDO-Level Results Indicators

25. The following key indicators will be used to evaluate the achievement of the PDO:
- Proportion of agricultural products transported to primary markets or processing centers;
 - Variation in vehicle operating costs for the distribution of inputs and collection of cotton;
 - Number of accessible schools and health centers;
 - People provided with an all-season road (of which women); and
 - Proportion of improved project roads under routine maintenance.

III. PROJECT DESCRIPTION

26. The proposed project is designed to support the Government's strategy to improve rural road access in the Sikasso (southern zone) and Koulikoro (dryland zone) regions through focused spot improvement and routine maintenance works to improve the quality, passability and sustainability of part of the rural road network.

27. The proposed project will assist the Government of Mali (GoM) and the local authorities to put in place a local level sustainable routine maintenance system. The project will also finance road safety activities adapted to relatively low volume traffic in the rural context.

A. Project Components

Component 1 - Rural roads improvement (US\$63.8 million equivalent, 100 percent IDA)



Subcomponent 1.1 - Rural roads improvement works (US\$56.0 million equivalent, 100 percent IDA)

28. About 1,700 km of existing unpaved rural roads will be improved using the spot improvement method to ensure all-season connectivity. The civil works will be executed in four consecutive phases. About 400 km of roads have already been identified and will be improved during the first phase, while around 400 km will be improved during each subsequent phase.

29. Activities to be financed include: (a) technical engineering studies, social and environmental safeguards studies, and bidding documents; (b) civil works; (c) supervision of civil works; (d) contract management by AGETIER; (e) third-party technical audits; and (f) third-party monitoring of implementation of social and environmental mitigation plans.

Subcomponent 1.2 - Small common facilities (US\$5.8 million equivalent, 100 percent IDA)

30. This subcomponent will finance small common facilities located along the rural roads of subcomponent 1.1. The proposed facilities are designed to foster greater women empowerment, while maximizing the positive impact of the project on selected farming communities along project roads. Similar types of infrastructure were financed under the recently closed Mali Second Transport Sector Project (P090075), which produced positive effects. The proposed facilities will be of different kinds, such as vegetable garden perimeters, multi-functional platforms for women, water wells with hand pumps, small warehouses for crops, small weekly market buildings, parking lots, fences and additional rooms for existing schools and health centers.

31. Activities to be financed include: (a) identification/assessments of needs, (b) technical engineering studies and bidding documents; (c) works and goods; (d) supervision; (e) third-party technical audits; and (f) impact studies.

Subcomponent 1.3 - Preparatory and other studies (US\$2.0 million equivalent, 100 percent IDA)

32. This subcomponent includes the Project Preparation Advance (PPA) financing and will finance: (a) techno-economic studies and related social and environmental safeguards studies to scale up the project to other areas in the country under a potential additional financing (AF); (b) a study on the provision of transport services in rural areas and related action plan to be financed under a potential AF; (c) a study on the transport needs for livestock inputs and products and related action plan to be financed under a potential AF; and (d) other relevant studies as needed.

Component 2 - Routine maintenance and road safety (US\$8.6 million equivalent, of which US\$3 million funded by IDA and US\$5.6 million funded by the Road Authority)

33. This component focuses on the routine maintenance of rural roads in good condition improved by the proposed project or by other development partners. Routine maintenance ensures that early deteriorations are corrected in a timely manner before they become advanced, thus preserving the road assets and decreasing the cost involved. Routine maintenance is simple, labor intensive, and can be implemented by unskilled workers living in the project area, after receiving some basic training. These aspects of routine maintenance make it suitable for implementation by direct beneficiaries living along the road. A study on routine maintenance of rural roads by direct beneficiaries was carried out during the preparation phase and found that, in many communes in the region of Sikasso, direct beneficiaries



are already organized in associations to perform maintenance of the rural roads in their villages. The study found that those associations need to be better organized, trained, equipped, and supervised.

34. The Global Road Safety Facility (GRSF) is currently financing technical assistance to help reduce road traffic fatalities and injuries in accordance with UN decade of Action 2011-2020 and the recently adopted sustainable development goal (target #3.6). A road safety management capacity review has been completed. Component 2 will address some of the challenges highlighted in this review.

Subcomponent 2.1 - Routine maintenance mechanism (US\$2.2 million equivalent, 100 percent IDA)

35. This subcomponent will develop institutional and stakeholder capacity to put in place an efficient and sustainable mechanism for the routine maintenance of rural roads.

36. Activities to be financed include: (a) capacity building for the central and local governments' technical services through acquisition of equipment and training on road asset management, innovative funding schemes and the use of construction materials for rural roads works; (b) in-class and on-the-job training of Community-Based Organizations (CBOs) in charge of carrying out routine maintenance; (c) acquisition of tools and safety equipment for the CBOs; and (d) NGO service fees for formation of CBOs and coordination of all activities related to routine maintenance.

37. The selection of CBOs members will give priority to women and household members with income below the poverty line. The unified registry database developed by a World Bank-financed Emergency safety nets project (P127328) will be used to better target underprivileged groups of the project area.

Subcomponent 2.2 - Routine maintenance works (US\$5.6 million equivalent, 100% funded by Road Authority)

38. Activities to be financed include: (a) labor cost for the CBOs performing routine maintenance works and managing rain barriers, as well as construction materials cost; (b) programming and inspection missions of technical services; (c) technical audits; and (d) evaluation.

Subcomponent 2.3 - Road safety (US\$0.8 million equivalent, 100 percent IDA)

39. This subcomponent will address road safety along the rural roads improved by the project. The interventions focus on road safety management through improved crash data collection system, safer roads and mobility, safer vehicles, safer road users, and post-crash response.

40. Activities to be financed include: (a) awareness campaigns for children in about 100 schools; (b) training and awareness campaigns for 100 truck drivers; (c) acquisition of equipment for road accidents data collection and analysis; (d) training and certification for 10 technical agents in road safety inspection and audit; (e) acquisition of 100 three-wheeler ambulances; and (f) acquisition of 10,000 reflectors to be installed on intermediate means of transport.

Component 3 - Operational support (US\$3.6 million equivalent, of which US\$3.2 million funded by IDA and US\$0.4 funded by the GoM)

**Subcomponent 3.1 - Project management (US\$2.8 million equivalent, 100 percent IDA)**

41. Activities to be financed include: (a) operating costs of the existing National Coordination Unit (NCU); (b) equipment for NCU; (c) training for NCU staff; (d) fiduciary management including audits; (e) support for monitoring and evaluation, including a study to measure the rural access index (RAI) in the regions of Sikasso and Koulikoro using the new methodology developed by the World Bank in 2016; and (f) implementation and monitoring of environmental and social safeguards.

Subcomponent 3.2 – Social safeguards (US\$0.4 million equivalent, 100 percent GoM)

42. Activity to be financed: implementation of RAPs.

Subcomponent 3.3 – Citizen engagement (US\$0.4 million equivalent, 100 percent IDA)

43. This subcomponent supports the participation of project beneficiaries during project design, implementation and beyond. Specific activities to be financed include: (a) communication and consultation with direct beneficiaries, (b) community monitoring through the deployment of an ICT based solution including training of actors; and (c) costs related to grievance redress mechanism. (Details provided in section VI.E.)

Component 4 - Contingent emergency response (US\$0, 100 percent IDA)

44. This component, known as the Contingent Emergency Response Component (CERC), will be available should the need arise to redirect some of the project resources to contribute with other projects in the Mali portfolio to responding to an emergency. The available resources may finance emergency response activities and address crisis and emergency needs. An Immediate Response Mechanism Coordinating Agency and expenditure management procedures will be defined in an Immediate Response Mechanism Operational Manual (IRM/OM), to be prepared separately and approved by the World Bank, in line with guidance provided under OP 10.00, paragraph 12. In case this component is used, the project will be restructured to reallocate funds, revise the PDO and indicators, and detail implementation arrangements.

B. Project Cost and Financing

45. The proposed project will be financed by an IDA credit of US\$70 million equivalent and by a GoM counterpart funding contribution of US\$6 million equivalent.

Table 1: Project Cost and Financing

Project components	Total amount in million US\$	IDA amount in million US\$	Government funding in million US\$	IDA percentage
1. Rural roads improvement	63.8	63.8	0.0	100%
<i>1.1 Rural roads improvement works</i>	<i>56.0</i>	<i>56.0</i>	-	



<i>1.2 Small common facilities</i>	<i>5.8</i>	<i>5.8</i>	<i>-</i>	
<i>1.3 Preparatory and other studies</i>	<i>2.0</i>	<i>2.0</i>	<i>-</i>	
2. Routine maintenance and road safety	8.6	3.0	5.6	34.8%
<i>2.1 Routine maintenance mechanism</i>	<i>2.2</i>	<i>2.2</i>	<i>-</i>	
<i>2.2 Routine maintenance works</i>	<i>5.6</i>	<i>-</i>	<i>5.6</i>	
<i>2.3 Road safety</i>	<i>0.8</i>	<i>0.8</i>	<i>-</i>	
3. Operational support	3.6	3.2	0.4	89.4%
<i>3.1 Project management</i>	<i>2.8</i>	<i>2.8</i>		
<i>3.2 Social safeguards</i>	<i>0.4</i>	<i>-</i>	<i>0.4</i>	
<i>3.3 Citizen engagement</i>	<i>0.4</i>	<i>0.4</i>		
4. Contingent emergency response	0	0	0	-
TOTAL	76.0	70.0	6.0	92%



C. Lessons Learned and Reflected in the Project Design

46. The proposed project design takes stock of country-specific lessons and of international best practices for rural road projects. In particular, country-specific lessons include the experience from two recently closed World Bank projects, namely the Mali Second Transport Sector Project (P090075) and the Mali Agricultural Competitiveness and Diversification Project (P081704). What follows are the key lessons reflected in project design:

47. **Keep project activities focused to a limited geographical area.** In countries with limited capacity, it is critical to start with a limited number of geographical areas of intervention and to scale up only once the project is found to be working. This approach will be used for both the improvement of rural roads and the routine maintenance mechanism.

48. **Field surveys are key before selection of project roads.** Extensive field visits were conducted of the rural roads proposed under the first phase of project, and they revealed that some road sections needed to be adjusted to better focus on impassable stretches, on stretches in need of drainage structures and to take out road stretches either in good condition or currently receiving investment from other development partners. In addition, the field visit allowed to better assess the potential impact of the project in terms of environmental and social safeguards.

49. **Spot improvement approach.** In Mali, the well tested and effective road spot improvement approach produced positive results for rural roads in the recently closed Second Transport Sector Project by maximizing all-weather passability with a reasonable level of service. This technical approach will be used in the proposed project.

50. **Security situation in project area.** Given the current situation in Mali, security needs to be a criteria used in the selection of roads, since security issues can seriously impede civil works and supervisions. Adequate security will be a criteria used to select project roads. The regions of Sikasso and Koulikoro (except the circle of Nara) are currently considered safe zones.

51. **Small common facilities along project roads.** Small common facilities significantly enhance the impact of the rural roads investment on the living condition of the local population, especially women. This was a key lesson learned in the implementation and completion results report of the recently closed Mali Second Transport Sector Project (P090075). Such facilities will be financed along project roads.



IV. IMPLEMENTATION

A. Institutional and Implementation Arrangements

52. The proposed project will be housed at the MED, which is in charge of managing the road network. The institutional arrangements to effectively prepare and implement the proposed project activities agreed are as follows:

53. **Project Steering Committee (SC).** A SC will be chaired by the minister in charge of roads or his representative and will include, among others, representatives of the Ministry of Agriculture and the ministry in charge of decentralization. The SC will ensure that throughout the life of the proposed project, there is an adequate strategic direction, overall oversight, and coordination with other line ministries.

54. **Project Technical Committee (TC).** A TC, already established by ministerial decision, is chaired by the coordinator of NCU and include designated focal points (technical experts) from the National Roads Directorate, the Agency of Road Safety, the National Directorate of Agriculture, the National Directorate of Rural Engineering, the Malian Company for Textile Development (*Compagnie Malienne pour le Développement du Textile* – CMDT), the Upper Niger River Valley Agricultural Program, and the regional councils of Koulikoro and Sikasso. The TC is responsible for the technical oversight, the development of the annual work plans and budget, and ensuring that the proposed project meets its objectives.

55. **NCU.** A unit anchored at the MED is in charge of implementing transport projects financed by the World Bank. The already existing and fully operational NCU will be in-charge of coordinating the project activities among different ministry entities, central and the decentralized government entities, the overall fiduciary aspects (procurement and financial management), safeguards compliance monitoring, and monitoring and evaluation.

Implementing Agencies. There are two implementing agencies (AGETIER and NCU) organized as followed:

56. **AGETIER** will implement the rural roads improvement works through a delegated contract management by the regional councils of Sikasso and Koulikoro.

57. **NCU** will implement the preparatory studies, small common facilities, routine maintenance activities, and road safety activities. NCU will have the fiduciary responsibility of the above-mentioned activities, while the technical services of MED led by the National Directorate of Roads will have the technical responsibility. NCU will hire a suitably qualified NGO to coordinate the activities related to routine maintenance road works.



B. Results Monitoring and Evaluation

58. **Framework for monitoring outcomes/results.** The monitoring of outcomes/results will be based on the agreed results framework and monitoring arrangements that are described in detail in section VII.

59. **Responsibility for monitoring activities.** The NCU will be responsible for regular monitoring of the project. It will produce semi-annual and annual progress reports. These reports will assess progress based on the indicators of the results framework. An international consultant will be hired to assist the NCU in M&E.

60. **Community monitoring.** A system of community monitoring will be established. Details are provided in section VI.E. below.

C. Sustainability

61. **Sustainability** of the rural roads to be improved under the project (subcomponent 1.1) will depend on putting in place effective routine maintenance mechanisms to ensure that the improved roads remain passable in all seasons for several years after the completion of the works. To ensure that improved roads are adequately maintained, the proposed project will seek the involvement of the direct beneficiaries via the establishment of a routine maintenance mechanism (subcomponent 2.1) and subsequent routine maintenance works to be financed by the Road Authority, (subcomponent 2.2). This source of funds should guarantee the availability of money for routine maintenance after the project closing. More specifically, the Road Authority now has to earmark at least 5 percent of the Road Fund's annual revenues for the routine maintenance of rural roads. This minimum earmark was set in October 2016 through an inter-ministerial decree supported by a World Bank Development Policy Operation (PRIGSO – P157900). Finally, the proposed project will also support the operation of rain barriers on rural roads that will be closed during high rainfall events to preserve the road surfaces from rutting and damage caused by traffic of heavy vehicles on wet soil.

V. KEY RISKS

A. Overall Risk Rating and Explanation of Key Risks

62. **The overall risk profile for the project is high.** The most critical risks relate to political instability and security, institutional capacity for implementation and sustainability, and stakeholders

63. **Political and governance risks (High).** Security issues can seriously impede the project's works and supervision. The 2015 Peace and Reconciliation Accord in Mali Resulting from the Algiers Process was a positive sign of progress in containing conflict and violence within the country. However, the Accord is not expected to lead immediately to a stabilization of the North. In addition, recent trends have seen a spread of conflict and violence further south through terrorist attacks and banditry, disrupting access to basic services and markets for the population in central Mali as well.



64. The project intervention area consists of all the administrative circles of the region of Sikasso and all the administrative circles of the region of Koulikoro except the circle of Nara at the border with Mauritania. These two regions are located in the South of the country and are relatively safe compared to the rest of the country. To mitigate the risk of potential escalation of violence in the project area, the project design has taken security concerns into account by first making security a criterion for the selection of project road, and by putting in place a third party audit as well as a community monitoring mechanism to monitor implementation in case the World Bank missions cannot visit the project sites.

65. **Institutional capacity for implementation and sustainability risks (Substantial).** The Government may not be committed to earmark part of the Road Fund for the routine maintenance of the rural road network. This risk is being mitigated by the recently signed inter-ministerial decree earmarking at least 5 percent of the Road Fund for routine maintenance of the rural road network.

66. **Stakeholder risks (Substantial).** Local communities' engagement and collaboration between local government and the central government including the NCU is key for the success of the routine maintenance mechanism. Without that engagement and collaboration, long-term sustainability of the road investments will not be achieved. The risk is mitigated by putting in place a technical committee including both local government and central technical services, and by using an experienced NGO to work closely with the direct beneficiaries and conduct public awareness campaigns.

VI. APPRAISAL SUMMARY

A. Economic Analysis

67. **Selection criteria and prioritization.** The methodology to select and prioritize the rural roads to be improved under the proposed project will follow the following three stages:

68. **Rural roads master plan (stage 1).** A long list of candidate rural roads representing about 5,800 km has been proposed for financing under the project by the local governments and agricultural development services of the regions of Sikasso and Koulikoro based on the needs of the farming communities. From this list, a master plan will be developed where the physical condition of each candidate road will be assessed to verify that the road is impassable during part of the year due to interruption points. Socio-economic data will also be collected for each candidate road to conduct a multi-criteria analysis.

69. **Multi-criteria analysis (stage 2).** A multi-criteria analysis will rank all candidate roads based on four socio-economic criteria. These criteria and their respective weight (in percentage) are the following: average yearly tonnage of agricultural products (cereals, cotton, fruits) transported on the road (35 percent), number of markets and agricultural inputs facilities served by the road (25 percent), number of beneficiaries served per km of road (25 percent), and number of basic services (clinics, maternities, schools, and administrative facilities) (15 percent). The highest ranked candidate roads totaling about 1,700 km out of the proposed 5,800 km will become the shortlist of roads to be improved under the project.

70. **Distribution of road investments between the dryland zone and the southern zone.** In order not to disadvantage the dryland zone where agricultural productivity is low compared to the southern



zone, but where one third of Mali's poor live, the above socio-economic criteria will be applied separately to each zone, so that each region benefits from an equal length of improved rural roads. Without this approach, the candidate roads located in the high productivity southern zone would out prioritize the candidate roads located in the dryland zone, with negative regional consequences in terms of equity, poverty reduction, and social inclusion.

71. **Final selection (stage 3).** Consultations at the regional level will be conducted to ensure that the shortlist is indeed the priority of the farming communities.

72. **Economic analysis.** An economic analysis was performed on a sample of roads in the project intervention area as representative of the roads to be improved. This sample includes the roads of the first phase and additional road sections chosen to cover all the sub-prefectures in the project area impassable during the rainy season.

73. Due to the unpaved road condition and relatively low traffic on most of the road sections, the Road Economic Decision Model (RED) was used to perform the economic analysis using the consumer surplus approach to estimate project benefits in terms of road user costs (vehicle operating costs) savings.

74. A 6 percent annual traffic growth was assumed over the evaluation period for all types of vehicles. This assumed rate corresponds to the forecasted annual growth rate of the agricultural sector. The economic analysis was done for a 10-year evaluation period and adopting a discount rate of 12 percent. The initial road condition corresponds to a roughness coefficient of 22 m/km and the final condition after improvement correspond to 10m/km.

75. The Net Present Value (NPV) for the sample (12 road sections) is US\$97.9 million, at 12 percent discount rate, and the overall Economic Internal Rate of Return (EIRR) is 76 percent (EIRR for road sections ranging from 33 percent to 99 percent). A sensitivity analysis was done with estimated investment costs increased by 20 percent, an estimated annual traffic growth rate reduced by 20 percent, and a combination of both. The sensitivity analysis shows that the EIRR in all cases for all roads is well above the 12 percent threshold, confirming the robust economic justification of the project.

76. **The benefits to road access in the dryland zone are threefold.** First, rainfall variability in this region is higher, which leads to frequent production shocks. These shocks are expected to become worse with climate change. Road access can smooth production shocks by stabilizing prices and providing access to food during periods of shortage. Secondly, input use – including improved seed and chemical fertilizers that show positive returns to production – is much lower compared to the southern zone. Road access facilitates access to inputs and can lower the prices of these inputs, increasing agricultural yields. Finally, on-farm labor productivity is especially low in this region – the marginal value of family labor is less than the median wage rate, implying the overuse of family labor in farm production. In this context, off-farm value addition opportunities such as millet processing and sorghum-based animal feed are necessary to generate employment. Road connectivity can help to make small agricultural enterprises viable in secondary towns.

77. Public sector financing is appropriate to finance rural roads because their traffic is not high enough to justify the concession to the private sector of their improvement and management. In



addition, public investment in road infrastructure is a way for the government to play a key role in the country's development strategy by enhancing access to markets and basic services.

78. The use of the World Bank's resources is justified by the World Bank's broad expertise and international experience in rural roads. This ensures the use of reliable procurement and financial management processes, the application of social and environmental safeguards, the employment of well-adapted technical standards, the execution of road works with proper quality control, and the use of efficient monitoring and evaluation systems

B. Technical

79. **Technical specifications for rural roads improvement works.** These specifications will focus on all-season passability rather than full-scale rehabilitation. The improvements will be localized on priority sections along the selected roads, which are often cut off during rainy season, dangerous and at risk of deterioration in the future. The other sections which are in good conditions will not be treated. The actual scope of work will especially concentrate on the construction of small bridges, drainage structures such as culverts and concrete slabs, side ditches, and partial earthwork on critical locations to ensure continuity of the road profile. This approach, called "spot improvement", reduces the cost of works per km and therefore allows the inclusion of more beneficiaries per dollar spent. In addition, it is an approach that has been successfully tested and implemented by the World Bank in Mali under the Second Transport Sector Project (P090075) and elsewhere in Sub Sahara Africa. Finally, the spot improvement approach is appropriate for rural roads in Mali as traffic count studies shows that the majority of traffic on these roads is composed of intermediate means of transport (animal carts, bicycles, motorcycles, motorized three-wheelers) rather than of more sophisticated motor vehicles (cars, buses, trucks). The average unit cost is estimated to be US\$30,000 per km inclusive of studies and supervision.

80. **Performance-based contracts for routine maintenance.** The scope of work of routine maintenance is focused on maintaining year-round passability and mainly include clearing bridges, culverts, side ditch and vegetation off the roads, scour and erosion protection, small repair of drainage structures, as well as minor earthwork to treat ruts and rills. The payments received by the CBOs that will execute routine maintenance will depend on the achievement of clearly predefined performance indicators related to the activities above. The payments will not be based on the amount of inputs and works executed. The performance indicators will focus on all-season passability of the roads under maintenance. Performance-based contracts also tend to make inspection easier. The deconcentrated branches of the National Directorate of Roads and the National Directorate of Rural Engineering will conduct inspections to verify that the road condition meets the performance indicators. An external technical audit will be conducted to assess the efficacy of the routine maintenance mechanism.

81. **Greenhouse Gas (GHG) Evaluation.** Carbon dioxide (CO₂) emissions have been estimated using the HDM-4 model relationships, based on aggregated composition of traffic, existing travel conditions, and impacts from the project interventions. The evaluation compares anticipated baseline without project emissions, when there are no project interventions, and with project scenario emissions. Baseline emissions are estimated from the existing traffic allowing for annual growth, while the project scenario accounts for changes in emission levels of the normal traffic due to improved ride quality and increase in travel speeds. Over a 10-year evaluation period, the total CO₂ emissions will decrease from



585,283 tons without the project to 417,920 tons with the project (29 percent decrease) for the sample rural roads selected for the evaluation. The CO₂ emissions on the project roads will decrease with the project because vehicles speeds will increase on the project roads resulting in reduced fuel consumption and thus reduced CO₂ emissions.

82. **Climate change adaptation.** Mali has been identified as highly vulnerable to climate change, which will exacerbate the intensity and frequency of extreme weather including flood events, which has detrimental effect on road passability. This means that going forward, historic rainfall data are no longer a good indicator for rainfall intensity prediction. Therefore, the hydraulic sizing of medium size drainage structures (i.e. bridges and culverts) at the engineering design stage will use hydrologic data based on climate change projection and most recent rainfall data developed by Mali's weather forecast agency (*Mali Meteo*). Furthermore, maps of flood prone areas currently being developed can be used for better identification of the location of future drainage structure. Rainfall monitoring equipment at the rain barriers will be installed to control the use of the gate and also to ensure that roads are adequately closed during high rainfall events.



C. Financial Management

83. A Financial Management (FM) assessment of the implementing agency (NCU) was carried out in March 2017. The objective of the assessment was to determine whether the NCU has acceptable FM arrangements in place to ensure that the project funds will be used only for intended purposes, with due attention to considerations of economy and efficiency. The assessment complied with the financial management manual for World Bank-financed investment operations effective March 1, 2010.

84. The NCU, under the oversight of the SC and TC, will have the overall fiduciary responsibility of the project. The NCU has experience in implementing projects financed by the World Bank. The overall FM performance of the last project (Mali Second Transport Sector Project (P090075) - PST2) was rated satisfactory. The FM team is in place. The position of internal auditor is vacant due to the budget constraints which did not allow to keep it after the closure of the PST2. The NCU is familiar with the World Bank's FM requirements. The closure audit report for the PST2 was submitted on time and was unqualified.

85. An FM assessment of AGETIER was carried out in March 2017. The assessment revealed that AGETIER has in place the following financial arrangements: (i) an FM manual (*Manuel des Procedures*) acceptable to IDA; (ii) FM staff with acceptable experience in World Bank procedures; (iii) an external auditor recruited through a competitive and transparent process; and (iv) internal auditor in place with job description acceptable to IDA.

86. **The overall FM risk for the proposed project is rated moderate.** The FM arrangement satisfies the World Bank's minimum requirements under OP/BP 10.00, and therefore is adequate to provide, with reasonable assurance, accurate and timely financial management information on the status of the project required by the World Bank. However, in order to maintain the continuous timely and reliable information produced by the NCU, the implementation manual including fiduciary procedures will also be updated to include specific arrangements related to this new project and to the recruitment of internal auditor. These mitigation measures are dated covenants and should be implemented within three months following the effectiveness of the project.

Table 2: FM action plan

Action	Responsible party	Deadline and conditionality
1- Update the Manual of Administrative Procedures, Financial Management and Procurement to take into account specific arrangements related to the project	NCU	Three (3) months after effectiveness
2- Recruit an internal auditor	NCU	
3- Recruit an external auditor	NCU	Six (6) months after effectiveness

87. **Internal control system.** The internal control system will consist of a steering committee to oversee the project activities, the manual of administrative procedures, financial management and procurement to define control activities, and an internal audit function to carry out ex-post reviews and to evaluate the performance of the overall internal control system.



88. **Planning and budgeting.** The NCU will prepare a detailed annual work plan and a budget, which should be approved by the project SC. The annual work plan and budget will be submitted to the SC for approval, and thereafter to IDA for no objection no later than November 30th of the year preceding the year the work plan should be implemented.

89. **Accounting.** The SYSCOHADA, assigned accounting system in West African Francophone countries, will be applicable. The NCU will customize and update the existing accounting software to meet project requirements.

90. **Interim financial reporting.** Interim un-audited financial reports (IFR) will be prepared every quarter and submitted to the World Bank regularly (e.g. 45 days after the end of each quarter) on time. The frequency of IFR preparation as well as its format and content will remain unchanged.

91. **Annual financial reporting.** The NCU will produce project annual financial statements, which will comply with SYSCOHADA and World Bank requirements.

92. **Auditing.** The NCU will submit audited project financial statements satisfactory to the World Bank every year, within six months after closure of the fiscal year. A single opinion on the audited project financial statements in compliance with the International Federation of Accountants will be required. In addition, a management letter will be required. The management letter will contain the auditor's observations, comments, and recommendations for improvements in accounting records, systems, controls, and compliance with financial covenants in the Financial Agreement. The project will comply with the World Bank's disclosure policy of audit reports and will place the information provided on the official website within one month of the report being accepted as final by the team.

93. **Upon credit effectiveness, transaction-based disbursements will be used.** The proposed 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 the World Bank. An initial advance up to the ceiling of the DA will be made and subsequent disbursements will be made against submission of Statements of Expenditures reporting on the use of the initial/previous advance. The option to disburse against submission of quarterly unaudited IFR (also known as the Report-based disbursements) could be considered, as soon as the project meets the criteria. The other methods of disbursing the 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 (WA) electronically using the eSignatures module accessible from the World Bank's Client Connection website.



D. Procurement

94. **Applicable guidelines.** Procurement for the proposed project will be carried out in accordance with the World Bank “Guidelines: Procurement of Goods, Works, and Non-Consulting Services under International Bank for Reconstruction and Development (IBRD) Loans and IDA Credits & Grants by World Bank Borrowers” dated January, 2011, revised July 2014; and “Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credit & Grants by World Bank Borrowers”, dated January 2011, revised July 2014; 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 the provisions stipulated in the Legal Agreement. National Competitive Bidding (NCB) shall be in accordance with procedures acceptable to the World Bank.

95. **Frequency of procurement reviews and supervision.** The World Bank will conduct six-monthly supervision missions, an annual Post Procurement Review (PPR). PPR can be done either by World Bank staff or consultants hired by the World Bank. The PPR should cover at least ten percent of contracts that have not been prior-reviewed in a financial year. The sampling is risk-based and takes into consideration: (i) the project procurement risk rating, with the riskier projects having a larger sample, and (ii) the contract risk rating, to ensure that riskier contracts constitute a higher proportion of the sample. The World Bank reserves the right to conduct an Independent Procurement Review at any time up to two years following the closing date of the project.

96. **Procurement responsibilities.** The procurement activities will be carried out by the NCU and by AGETIER. Furthermore, NCU will be responsible for the coordination and quality control of all procurement related activities funded by the proposed project. Both NCU and AGETIER have valuable experience in the implementation of World Bank financed projects although for the AGETIER there have been problems in the past concerning technical competence on certain subjects and the lack of sufficient staff to oversee the work with rigor and quality. NCU has a procurement manual, which will be updated according to the World Bank’s revised procurement guidelines and to take into account the new project. While NCU and AGETIER will have the full responsibility of the administrative/fiduciary matters linked to procurement, the technical responsibility (preparation of the technical specifications, Terms of References (ToRs), and evaluation of bids) will remain the responsibility of the technical services meaning the National Directorate of Roads, the National Directorate of Rural Engineering and the National Road Agency.

97. **Procurement risks and related mitigation measures.** An assessment of the capacity of the two implementing agencies was carried out on March 7 and 8, 2017. This assessment is summarized in the two tables below.

Table 3: National Coordination Unit

No	Key risks	Mitigation Actions	By Whom	By When
1	Lack of procurement manual taking into account the provisions of the revised Guidelines of July 2014 and the specific needs of the project	Update the Manual of Administrative Procedures, Financial Management, and procurement in line with the World Bank’s revised Guidelines of July 2014 by taking into account the specific needs of the Project; and to be approved by the World Bank	NCU	No later than three months (3) after effectiveness



2	Inadequate communication between NCU and the technical structures within different ministries (the National Directorate of Roads and the National Directorate of Rural Engineering) may lead to delays in the drafting and validation of ToRs and technical specification; and poor cost estimation	Strengthening the flow of communications to improve interaction, between the technical structures (namely the National Directorate of Roads) of the MED and the NCU, in their respective responsibilities; turnover of staff should be minimized and any turnover which, if necessary, should be properly managed to ensure continuity	MED/NCU	Throughout the project implementation
3	The interaction between the NCU, the Directorate of Finance and Material (DFM) of the Ministry in Charge of Roads (MED) and the procurement body (<i>Direction Générale des Marchés Publics-DGMP</i>) may cause delays and possible political interference	All interactions related to the procurement responsibility must be consistent with the institutional arrangements agreed on with the Recipient. In particular, all procurement documents prepared by the NCU-PST2 will be reviewed by the DFM-MED, if any, and transmitted for review to: (a) the National Authorities in charge of such review; and (b) to the World Bank for contracts subject to prior review Close monitoring of procurement plans on a monthly basis and closely monitor and exercise quality control on all aspects of the procurement process, including evaluation, selection and award	DFM-MED/ NCU NCU/IDA	Throughout the project implementation Throughout the project implementation
4	The internal control mechanism exists at the level of the DFM of MR but this control may not be proficient on the procurement side	The Control Body (<i>Direction Générale des Marchés Publics et des Délégations de Service Public – DGMP-DS</i>) and the Regulation Authority (<i>Autorité de Régulation des Marchés Publics et des Délégations de Service Public - ARMDS</i>) will have to play their role to ensure good governance and limit the opportunities for undue influence by any central unit of the Recipient	DGMP-DS/ARMDS	Throughout the project implementation
5	The non-functionality of the new archive room	Equip the new archive room with appropriate equipment to keep the documents in good condition. Recruit an archivist to set up adequate filing system for project records to ensure easy	NCU	No later than 3 months after effectiveness



		retrieval of information/data.		s
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Table 4: AGETIER

No	Key risks	Mitigation Actions	By Whom	By When
1	Lack of procurement manual taking into account the provisions of the revised Guidelines of July 2014, and the specific needs of the project	Update the Manual of Administrative Procedures, Financial Management, and procurement in line with the World Bank's revised Guidelines of July 2014 by taking into account the specific needs of the Project; and to be approved by the World Bank	NCU	No later than three (3) months after effectiveness

98. **Procurement Plan.** A Procurement Plan (PP) for the first 18 months of project implementation was discussed and agreed between the recipient and the World Bank task team on April 21, 2017.

Table 5: Thresholds for Procurement methods and Prior Review for Moderate Risks.

Expenditure Category	Contract Value (Threshold) (US\$)	Procurement Method	Contract Subject to Prior Review (US\$)
1. Works	15,000,000 or more	ICB	All ICB contracts and contracts equal or above 15,000,000
	Below 15,000,000	NCB	None
	Below or equal to 200,000	Shopping	None
	No threshold	Direct Contracting	All contracts
1. Goods and Non-consulting services	3,000,000 or more	ICB	All ICB contracts and contracts equal or above 4,000,000
	Below 3,000,000	NCB	None
	Below or equal to 100,000	Shopping	None
	No threshold	Direct Contracting	All contracts
2. Consultancy	Firms	QCBS, QBS, FBS, LCS, QC	All contracts equal or above 2,000,000 and contracts specified in the PP irrespective of this threshold
	Individual	IC (at least 3 CVs)	All contracts equal or above 400,000 and contracts specified in the PP irrespective of this threshold
	No threshold	Single Source	All contracts

**These thresholds are for the purposes of the initial procurement plan for the first 18 months. The thresholds will be revised periodically based on re-assessment of risks. All contracts not subject to prior review will be post-reviewed.



NB: All terms of reference for consulting services will be subject to IDA's prior review.



E. Social (including Safeguards)

99. **Safeguards.** The proposed project is not expected to have significant negative social impacts. The civil works using spot improvement approach will be executed along the existing alignment of the roads on specific locations (i.e. not the full length) and with limited impact on land acquisition. The project triggers the safeguards policy OP/BP 4.12 on involuntary resettlement because the civil works may affect strips of farmland, trees and crops. However, no physical displacement of people is expected since the civil works will be executed on existing roads and outside rural settlements. Given that only five road sections totaling around 400 km are known out of the total 1,700 km, a Resettlement Policy Framework (RPF) was prepared as due diligence to cover the whole project and was disclosed in country on March 14, 2017 and on the World Bank's Infoshop on March 28, 2017. An environmental and social screening of the already known road sections concluded that the proposed civil works would encroach onto strips of farmland, trees, crops in the case of two out of the five roads sections in the Sikasso and Koulikoro Region. Therefore, two Resettlement Action Plans (RAPs) were prepared and disclosed both in the country on April 28, 2017, and on the World Bank's Infoshop on May 1, 2017. Those instruments define the procedures to follow to compensate the affected communities and propose mitigation measures. The RAPs will be implemented prior to issuing the notice to proceed with the civil works. Once the other sections of the roads are identified, a screening will be carried out to assess the potential impacts. When needed, the government will provide the necessary resources to implement with diligence and efficiency the identified RAPs throughout the life of the project. Extensive consultations with various stakeholders (local authorities' representatives, project affected people, traditional chiefs, Government and local non-governmental organizations) have been conducted during the preparation of the RPF and RAPs and will continue throughout the project implementation to help empower beneficiaries and strengthen the decision-making process.

100. **Positive impact on women.** Consultation with local government representatives and agricultural technical services revealed that women are organized into associations for vegetable gardening and for managing multi-functional platforms. Vegetable gardening is a significant source of revenue for women because it can be carried out year-round as it uses groundwater instead of rainwater. The subcomponent 1.2 (small common facilities) will finance vegetable gardening perimeters and multi-functional platforms that are exclusively used by women. Impact studies related to this subcomponent will disaggregate data by gender. In addition, women will be fully involved in the routine maintenance mechanism. In terms of participation and voice, a quota will be established for women during the constitution of the community-based organization in charge of routine maintenance of the rural roads. A capacity building program and advisory services will be set up to help women's associations to be more capable to participate in the maintenance of roads.

101. The proposed project will have further positive impact with job creation during the civil works, improving road access to basic services for beneficiaries, with a focus on women. Various consultations conducted with local communities and local governments during preparation, demonstrated a strong interest of women association to benefit from the project. The improved roads will facilitate access to maternal health services for women and facilitate access to input and output markets for women's agricultural production. Gender inequalities put a drag on agricultural productivity: a recent analysis on agricultural productivity (Living Standards Measurement Study - Integrated Surveys on Agriculture, known as LSMS-ISA) shows that in Mali female-managed plots are less efficient than male-managed plots, particularly in the dryland zone.



102. **Citizen engagement (CE)** approach informed the design of the project and is mainstreamed through the following three beneficiary feedback mechanisms that are embedded in the project interventions at the local level: (i) Consultations; (ii) Community monitoring; and (iii) Grievance redress mechanisms. Communication and outreach is intertwined with CE and integrated in each phase of the project implementation as a building block for CE interventions. This will ensure that the local communities are fully informed about the project activities as well as the CE mechanisms, thereby, allowing for an effective and informed beneficiary feedback throughout project implementation.

➤ **Participatory planning.** The design of the project integrated citizens' feedback at the local level through the involvement of the direct beneficiary at an early stage of the project preparation. Consultations in the form of public hearings were conducted to inform the beneficiaries about the proposed project as well as the expected results. Expression of needs were also requested from both the local governments and the agricultural technical services in order to agree on the long list of roads taking into account the local communities needs in terms of access to markets and basic services. Therefore, the targeted roads and socio-economic infrastructure were or will be selected with direct input from the beneficiary communities.

➤ **Outreach and Consultations.** Information about the launch of the project activities in specific regions, their objectives and expected results will be aired through rural radios to inform the targeted local communities about the specific activities in their neighborhoods and to announce the date and location of the consultations and public hearings. The subsequent consultations will focus on detail information on the road improvement works and the durations, the small common facilities requested by the communities and the grievance redress mechanism in place.

➤ **Community monitoring and Beneficiary Feedback.** A community monitoring mechanism will be in place to enhance citizens' voice, build their ownership of project activities and increase transparency. The mechanism will monitor, through beneficiary feedback, the on-the-ground impact of the project interventions. This will allow direct beneficiaries to first provide feedback related to sites where access was once lost or difficult after a rainstorm to assess the quality of the civil work, and second, feedback related to road maintenance quality once the roads are improved. This will increase transparency and accountability at the local level and help build trust and ownership. Data will be disaggregated by gender to provide more granularity of the project impact on women. A focal point, embedded within each targeted community will be identified and equipped with a smartphone. They will monitor the passability of the improved rural roads and maintenance activities through a short survey with members of beneficiary communities and will send the data to a center for treatment and analysis managed by regional councils. The conclusion of the data analysis will be shared among actors mainly implementing agencies for feedback and follow up. The short surveys will focus on (i) providing data on implementation status of projects activities in the form of texts or visuals; and (ii) channeling citizens' queries and comments. This process will also be a tool to inform project team on the impact of the road improvement on access to market and to basic services and will be followed by specific actions to address implementation and maintenance issues voiced by beneficiaries. The local government representatives and local civil society organizations (CSOs) will be closely involved throughout this process to strengthen their capacity in terms of community monitoring and build a collaborative approach among the various actors.



103. **Project-level grievance redress mechanism.** A Grievance Redress Mechanism (GRM) operated by the NCU will be in place to allow all project-affected beneficiaries to submit complaints and receive timely feedback and resolution of issues. The existing GRM used for the recently closed Second Transport Sector Project will be consolidated. The GRM is a three- step process. The first step is the registration of the complaints of the person affected by the project activities. Access to complaints registration forms and agents in charge of registering complaints will be widely publicized in all project sites; complaints registrations will be free of charge. The second step is the resolution of the complaint amicably by a mediation committee. A mediation committee playing the role of third party will be put in place for each road concerned by involuntary resettlement. The members of the committee will be a representative of the regional councils, the mayors of the beneficiary communes, representatives of the people affected by the project, members of civil society and women associations, traditional chiefs. The committee will meet once a month or when needed. The committee will assess all the complaints and will rule on the admissibility of each complaint. For each complaint deemed admissible by the committee, NCU will prepare the technical elements for its timely resolution, including but not limited to the proposed resolution or compensation, the list of interviews, the exact reason of the complaints. **All complaints will be treated within a 30-day period.** The GRM provides two additional uptake points: (i) through the community monitoring; and (ii) at the national level through the national courts. NCU will document the grievances and maintain a database to monitor the type of complaints and their timely resolution.

104. **Labor influx related risk.** Given that the civil works contracts will have a short duration (6 months on average) and will be executed by national small and medium enterprises, the risk related to high labor influx is limited. Nevertheless, the proposed project will finance public awareness campaigns for prevention against sexual abuses, child work, AIDS/ HIV and other sexual transmissible diseases. Also, there will be a specific clause in bidding documents for contractors to ensure that they are considering these concerns in their financial offer. A particular attention will be given in the final work contract. The NCU will produce a monthly report, with detailed inputs from the supervision consultant for each work camp in activity related to workers' behaviors.

F. Environment (including Safeguards)

105. The Project activities described in Section III above may cause some limited effects that could raise environmental sustainability concerns. The project preliminary environmental screening, concluded that potential adverse environmental impacts are site-specific and few of them are irreversible. **Therefore, the proposed project is classified as Category B.** The proposed project triggers the following environmental policies: OP/BP 4.01 (Environmental Assessment); OP/BP 4.11 (Physical Cultural Resources); and OP/PB 4.36 (Forests).

106. **Safeguards instruments.** For the proposed project both the framework and specific approaches have been used based on the availability of the information related to the project sites. An Environmental and Social Management Framework (ESMF) was approved and disclosed in country on March 14, 2017 and on the World Bank's Infoshop on April 21, 2017. The specific Environmental and Social Impact Assessment (ESIA) for the road works of the first phase was approved and disclosed in country and on the World Bank's Infoshop on May 9, 2017.



107. **Institutional Arrangement for Safeguards Processing.** The overall responsibility of safeguards processing relies on the NCU within the MED. This unit will work closely with the National Directorate of Sanitation, Noises and Pollution Control (DNACPN) within the Ministry of Environmental, Sanitation and Sustainable Development. More specifically, the NCU will maintain a position of an Environmental Safeguards Specialist (ESS) during the whole duration of the project. The ESS will work closely with the Social Safeguards Specialist. The ESS will be responsible for the full implementation of the ESMF that was prepared and disclosed in-country and on the World Bank's site prior to project appraisal. The ESS will ensure that systematic screening of all subprojects as well as the development of any related additional site-specific safeguards documents (ESIA/ESMPs) are prepared and disclosed timely. The safeguards documents for subsequent phases will be properly consulted upon and publicly disclosed both in-country and on the World Bank's site prior to the start of the civil works.

108. **Consultation and Disclosure of the safeguards documents.** During the preparation of the ESMF and the specific ESIA, the Client undertook a meaningful consultation with the main stakeholders. 533 persons were consulted during the preparation of the ESMF in Koulikoro and Sikasso regions. During the preparation of the ESIA for the first year road improvement section, 1,397 persons were consulted in these two regions. The consultations involved, project affected people, local authorities' representatives, traditional rulers and local nongovernmental organizations representatives. During the preparation of additional specific safeguards documents, the same meaningful consultation will be undertaken and the documents disclosed in country and at the World Bank's InfoShop. During the whole duration of the project, the NCU will maintain consultation with the main stakeholders.

109. **Coordination between feasibility studies and ESIA.** The selection of the road sections will take into account a number of constraints, including security risks and environmental and social concerns, among others. The consultants working on the engineering studies will work closely with the consultants working on the Environmental and Social Impact Assessment (ESIA) to ensure that the best options are chosen.

G. World Bank Grievance Redress Service

110. Communities and individuals who believe that they are adversely affected by a World Bank (WB) supported project may submit complaints to existing project-level grievance redress mechanisms or the WB's Grievance Redress Service (GRS). The GRS 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 WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance 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 (GRS), 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

COUNTRY : Mali

Mali - Rural Mobility and Connectivity Project

Project Development Objectives

The Project Development Objective is to improve and sustain road access of farming communities to markets and basic services in the project area, and, in the event of an eligible crisis or emergency, to provide immediate and effective response to it.

Project Development Objective Indicators

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
Name: Proportion of agricultural products transported to primary markets or processing centers		Percentage	30.00	70.00	Annual	For each road to be improved by the project, DNA phytosanitary agents will measure the tonnages, before and after the project, at the largest collection point that is located along the road and is expected to become more accessible thanks to the project. Agricultural products selected are the products whose proportion transported before project is below 30%. These products could include maize, millet,	National Directorate for Agriculture (DNA)



Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
						sorghum, rice, pea, sesame, peanut, banana, watermelon, potato, onion, scallion, tomato, cucumber, eggplant, pepper, and chili.	
Description: Ratio between the tonnage of agricultural products transported from secondary markets (collection points) to primary markets or processing centers and the tonnage of agricultural products brought to secondary markets and destined for commercialization. Link with PDO: this indicator relates to the improvement of road access to markets.							
Name: Variation in vehicle operating costs for the distribution of inputs and collection of cotton		Percentage	0.00	-20.00	Annual	Vehicle operating costs are measured in FCFA/km and comprise the costs of gas and spare parts (e.g. tires), and the wages of the trucking crew and maintenance workers. The CMDT fleet department calculate these costs each year at the end of the harvesting campaign.	Compagnie Malienne pour le Développement du Textile (CMDT)
Description: Variation in the vehicle operating costs of the CMDT trucks transporting agricultural inputs and cotton before and after the improvement of rural roads. Link with PDO: this indicator relates to the improvement of road access to markets.							



Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
Name: Number of accessible schools and health centers		Number	0.00	500.00	Annual	At the completion of the road improvement works (reception provisoire), the supervision consultant counts all concerned facilities along the improved road and records the total number in its completion report.	Supervision consultant under the control of National Coordination Unit (NCU)
Description: Number of schools and health centers (community health centers (CSCOM), dispensaries, and maternity hospitals) that have become accessible all year round as a result of the project. These facilities existed before the project and were located along the project roads but were not accessible all year round due to the poor condition of the roads, hence the baseline's value of zero. Link with PDO: this indicator relates to the improvement of road access to basic services.							
Name: People provided with an all-season road		Number	0.00	650000.00	Annual	The Mali Geographic Institute (IGM) determines the 2-kilometer buffer zone along the project roads and the list of villages located in the buffer zone. The population of these villages is then drawn from the 2009 population census (RGPH 2009) and adjusted for population growth with a rate of 3.6% per year. A project road is	NCU



Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
						accounted for in the indicator only after the improvement works for this road have been completed.	
Share of women		Percentage	0.00	51.00	Annual	Same as for the people provided with an all-season road.	NCU
Description: Rural population living within 2 kilometers of a road improved by the project into an all-season road. (Given the type of roads selected for the project and the characteristics of the rural population in Mali, the vast majority of these people belong to farming communities). Link with PDO: this indicators relates to the farming communities who benefit from improved road access to markets and basic services.							
Name: Proportion of improved project roads under routine maintenance		Percentage	0.00	100.00	Annual	The data source is the inspection reports, which will be compiled by the NCU every year from year 3 onwards. Roads improved by the project will start receiving routine maintenance only in year 3 because there is a one-year warranty period at the completion of road improvement works.	NCU



Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
Description: Ratio between the km of roads improved by the project and receiving routine maintenance through the mechanism established by the project, and the km of roads improved by the project. Roads improved by the project here means the roads that have been definitely taken over (i.e. reception definitive has occurred). Roads receiving routine maintenance means the roads for which the DNR's regional technical services in charge of inspecting routine maintenance works have delivered a satisfactory inspection report. Link with PDO: this indicator relates to the sustainability of road access.							

Intermediate Results Indicators

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
Name: Roads rehabilitated, Rural		Kilometers	0.00	1700.00	Annual	The data source is the works acceptance reports (procès-verbal de reception provisoire des travaux), which will be compiled by AGETIER every year.	AGETIER
Description: Kilometers of all rural roads reopened to motorized traffic, rehabilitated, or upgraded under the project. Rural roads are roads functionally classified in various countries below Trunk or Primary, Secondary or Link roads, or sometimes Tertiary roads. Such roads are often described as rural access, feeder, market, agricultural, irrigation, forestry or community roads. Typically, rural roads connect small urban centers/towns/settlements of less than 2,000 to 5,000 inhabitants to each other or to higher classes of road, market towns and urban centers.							
Name: Small common facilities provided by the project		Number	0.00	125.00	Annual	Every year, the NCU will compile this number from the reports issued by the supervision consultants	NCU



Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
						in charge of works (rapports de fin de travaux du bureau de contrôle) and the reports of acceptance of goods delivery (procès-verbal de reception provisoire des fournitures).	
Description: Cumulative number of small common facilities that have been completed under the project.							
Name: Variation in travel time		Percentage	0.00	-30.00	Annual	For each project road, once before and once after improvement, the DNR will measure the travel time by pick-up truck from one end of the road to the other, during the rainy season, on a working day, in daytime. The DNR will issue mission reports recording these travel times and will calculate the relative variation for each road.	National Directorate of Roads (DNR)
Description: Average relative variation of the travel time along the project roads before and after the project.							
Name: Rural roads		Kilometers	0.00	1200.00	Annual	NCU will compile the total	NCU



Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
maintained by the local population						length of these roads from the annual activity reports issued by the NGO that will coordinate the community-based organizations.	
Description: Cumulative kilometers of roads that receive routine maintenance performed by the community-based organizations formed under the project. These roads could be roads improved by the project or by other development partners.							
Name: Number of person-days worked for routine maintenance		Days	0.00	144000.00	Annual	NCU will compile the information on employment provided in the annual activity reports of the NGO that will coordinate the community-based organizations. To set the end target, it was assumed that 5 km of road can be maintained by a group of 10 people, each working 60 full days per year.	NCU
Share of women employed in routine maintenance		Percentage	0.00	20.00			
Description: Annual number of person-days worked by the community-based organizations established under the project to perform the routine maintenance of rural roads.							



Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
Name: Road safety awareness campaigns in schools		Number	0.00	100.00	Annual	ANASER will report the number of campaigns in its semi-annual activity reports.	Road Safety Agency (ANASER)
Description: Cumulative number of schools that are located along the project roads and have benefited from a road safety awareness campaign organized by the road safety agency (ANASER) and financed by the project.							
Name: Grievances addressed within the stipulated timeframe		Percentage	0.00	90.00	Annual	GRM operated by NCU	NCU
Description: share of all grievances received by the Grievance Redress Mechanism (GRM) that have been addressed within the stipulated timeframe of 30 days.							



Target Values

Project Development Objective Indicators

Indicator Name	Baseline	YR1	YR2	YR3	YR4	YR5	End Target
Proportion of agricultural products transported to primary markets or processing centers	30.00	30.00	40.00	50.00	60.00	70.00	70.00
Variation in vehicle operating costs for the distribution of inputs and collection of cotton	0.00	0.00	-20.00	-20.00	-20.00	-20.00	-20.00
Number of accessible schools and health centers	0.00	200.00	300.00	400.00	500.00	500.00	500.00
People provided with an all-season road	0.00	185000.00	350000.00	450000.00	650000.00	650000.00	650000.00
Share of women	0.00	51.00	51.00	51.00	51.00	51.00	51.00
Proportion of improved project roads under routine maintenance	0.00			100.00	100.00	100.00	100.00

Intermediate Results Indicators

Indicator Name	Baseline	YR1	YR2	YR3	YR4	YR5	End Target
Roads rehabilitated, Rural	0.00	400.00	800.00	1200.00	1700.00	1700.00	1700.00
Small common facilities provided by the project	0.00	25.00	50.00	75.00	100.00	125.00	125.00



Indicator Name	Baseline	YR1	YR2	YR3	YR4	YR5	End Target
Variation in travel time	0.00	0.00	-30.00	-30.00	-30.00	-30.00	-30.00
Rural roads maintained by the local population	0.00	0.00	0.00	400.00	800.00	1200.00	1200.00
Number of person-days worked for routine maintenance	0.00	0.00	0.00	48000.00	96000.00	144000.00	144000.00
Share of women employed in routine maintenance	0.00			20.00	20.00	20.00	20.00
Road safety awareness campaigns in schools	0.00	25.00	50.00	75.00	100.00	100.00	100.00
Grievances addressed within the stipulated timeframe	0.00	90.00	90.00	90.00	90.00	90.00	90.00

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¹ Human Development Report, UNDP, 2016

² *Priorities for Ending Poverty and Boosting Shared Prosperity – Mali Systematic Country Diagnostic*, June 2015, World Bank.

³ *Adult and Youth Literacy 1990-2015 – Analysis for 41 Selected Countries*, 2010, UNESCO.

⁴ World Development Indicator dataset.

⁵ *Priorities for Ending Poverty and Boosting Shared Prosperity – Mali Systematic Country Diagnostic*, June 2015, World Bank.

⁶ Full range of value-adding activities required to bring a product or service through the different phases of production, including supply of inputs, services such as transport or storage, physical transformation, and ultimately response to consumer demand.

⁷ The economic complexity of a country is dependent on the complexity of the products it exports. A country is considered 'complex' if it exports not only highly complex products, but also a large number of different products.

⁸ Haussmann and Hidalgo (2008): a country should seek a development path that builds on the knowledge captured in its existing product mix and aim to increase the complexity of its production.

⁹ Average distance from farms to a market, for example, averages 8 km in the southern zone and 13 km in the dryland zone (LSMS-ISA 2014).

¹⁰ The rural access index measures the number of rural people who live within two kilometers (typically equivalent to a walk of 20-25 minutes) of an all-season road as a proportion of the total rural population. An "all-season road" is a road that is motorable all year round by the prevailing means of rural transport (typically a pick-up or a truck which does not have four-wheel-drive).

¹¹ *Priorities for Ending Poverty and Boosting Shared Prosperity – Mali Systematic Country Diagnostic*, June 2015, World Bank.

¹² Farming communities are communities whose primary activity is the growing of crops, raising of livestock and pisciculture. In Mali, the vast majority of rural communities are farming communities, as 78 percent of rural households are primarily engaged in crop farming and 13 percent in pastoralism (Mali Systematic Country Diagnostic 2015).