ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA)

FOR 361.7KM OF RURAL ROADS IN ADAMAWA STATE

RAMP

Rural Access Mobility Project

ADAMAWA RAMP II

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Final Report

JUNE 2019

EXECUTIVE SUMMARY

ES 1: Background

The Federal Government of Nigeria through the Federal Ministry of Agriculture and Rural Development (FMARD) is being supported by the World Bank (WB) and the French Development Agency (AFD) for the implementation of the Rural Access and Mobility Project (RAMP) in the country. The RAMP is in line with achieving the Federal Government's Rural Travel and Transport Program (RTTP), which is aimed at improving and enhancing accessibility and mobility in the rural areas. Accessibility and mobility are crucial to the lives of rural populations since they are predominantly farmers. The movement of their agricultural inputs and outputs are dependent on accessibility and mobility. The existing carriageway width of these 29 rural roads varies from 4–6 m. The existing roads are earthen roads and are deteriorated due to inadequate maintenance and impact of weather elements. This road acts as a major economic corridor of the rural villages and links them up with their neighboring villages, local government headquarters. In this regard, the Adamawa RAMP 2 is applying part of its funds for the preparation of an Environmental and Social Impact Assessment (ESIA) for the proposed rehabilitation works on the 29 rural roads.

ES 2: Rationale for the ESIA

The RAMP activities will involve medium-sized civil works during the rehabilitation of roads and river-crossings. These could result in environmental and social impacts thus triggering the World Bank's Safeguard Policies including Environmental Assessment OP 4.01; Involuntary Resettlement OP4.12; Natural Habitats OP 4.04; and Physical Cultural Resources OP 4.11. The environmental and social safeguards concerns are being addressed through the national instruments already prepared under the project: an Environmental and Social Management Framework (ESMF) and a Resettlement Policy Framework (RPF), prepared when the exact project locations were not known. Based on the environmental and social screening criteria set out in the ESMF, an ESIA is required for the entire project at the State level. Against this backdrop, the Adamawa State Project Implementation Unit (PIU) has prepared this ESIA report in compliance to the Federal Government of Nigeria (FGN) Environmental Impact Assessment (EIA) Law and the World Bank Safeguard Policies, and in line with the terms of reference captured in Annex 1.

ES 3: Policy, Legal and Administrative Frameworks for the ESIA

Several state, national and international policies, legal and regulatory framework have been enumerated in this report. These legal instruments specifically address or are related to road infrastructure development, environment and social development. Importantly, policies and conventions that address gender-based violence, child rights and sexual exploitation are also enlisted.

ES 4: Description of the Proposed Roads Rehabilitation and Construction Works

Broadly, the intervention works will involve the upgrading, rehabilitation and maintenance of 29 rural roads, across Adamawa State. The selected rural roads to be rehabilitated are existing roads which present varying levels of deterioration. The width of the roads range from 4-6m and from 1.2km-28.1 km in length. Based on the draft designs, the proposed road length will range from 1.2km-27.9km. Proposed works specifically will involve road modifications, road re-alignments, construction and rehabilitation of drains, culverts and bridges. Some works will be conducted in areas where roads are prone to flooding as a result of major flood plain areas which surround them, such as Loko-Hombo and Gurin-Falingo roads. The potential environmental and social risks associated with the roads include:

i) Erosion and pot-hole vulnerability;
ii) Flooding;

iii) Difficulty in road travel as a result of thick road-surface sand piles/deposits, consequent on the general terrain of some project areas (sandy mountains and sedimentary rocks); and
iv) Limitation in the effective and efficient transportation of agricultural produce, and access to markets.

ES 5: Analysis of Alternatives

The project alternatives considered are enumerated as follows:

1. Implementation Option
2. Do Nothing Option
3. Alternative Options for Roadway Surfacing

Alternative Options for Roadway Surfacing

Three major roadway surfacing options have been proposed. The Road Economic Decision (RED) model has been used to select the most viable options. These three options are

1. Laterite Gravel Road Base
2. Single Coat Bituminous Surface Treatment
3. Double Coat Bituminous Surface Treatment

From the three options, Double Coat Bituminous Surface Treatment (DBST) is the most preferred and recommended option. DBST will be used for town and settlement sections only; the rest of the road length will be re-constructed with laterite gravel due to budget constraints and cost implications. This is in line with the proposed scope of works for the activity and draft design.

ES 6: Assessment of Environmental and Social Media in the Project Areas

Physico-Chemical Properties (pH, Chloride, Phosphates, Salinity)

The pH for surface water and groundwater were within a range of 6.22–7.26, and both within the FMEnv limits (6 – 9). The pH values of groundwater is fairly neutral while surface water in the project areas is slightly acidic, which could be as a result of Leachates or leaching from waste dumps site close to water sources. With regards the proposed intervention works; the current acidity of surface water in some of the project sites has the potential to damage existing and proposed roads. Literature has shown that use of acidic water for road construction reduces the lifespan of the roads. Therefore, based on the current acidic nature of surface waters likely to be used by Contractors during road rehabilitation and reconstruction, it is advised that in addition to laterite, limestone could be mixed with concrete for roads to be rehabilitated in areas where there is acidity of surface waters. This application neutralizes the acidic effect.

Materials proposed to be used are presented subsequently.

a) **Water:** Water for the proposed road rehabilitation and construction works can be sourced from streams/rivers within the vicinity of some of the project areas.

b) **Fine Sand:** Like water, river sand is obtainable from some of the rivers along the project area. The river sand may be compensated with fine aggregates (quarry dust) if river sand is found not to be in sufficient quantity for the roads' rehabilitation and construction.

c) **Aggregates:** Aggregates (coarse sand) and laterite can be purchased and stock piled from existing quarries in the local government areas of the State. The aggregates must meet the requirements stipulated in relevant sections of Federal Ministry of Works General Specification, Vol II (Roads and Bridges).

d) **Bitumen:** Bitumen is also available in the state and can be purchased.

In surface water and groundwater samples, chloride levels were within the FMEnv limits (250mg/l) as well as Salinity (0.1%). Phosphate levels were above FMEnv limits (5mg/l), this is as a result of fertilizer usage in farmlands around the project areas, animal feeds, manure which are washed off and dumped into the river and streams by run-off.

Socio-Economic Assessment

Socio-economic assessment was conducted in the project areas through interviews, focus group discussions and distribution of questionnaires. The methodology adopted, indices measured and results obtained are presented in chapter 3.
The results show that adequate workforce can be gotten from the communities to minimize labour influx,. 78.8% of the respondents were farmers, while 11.4% of the respondents were traders/artisans men and 9.8% of the respondents were civil/public workers which shows that any activity that will boost agriculture in the area will be highly commendable. Also based on the existence of artisans, local labour can be sourced within the project area.

Issues Affecting Transportation of Agricultural Products and other Commodities on Project Roads

The major problems affecting rural transportation in the project areas include erosion, flooding of roads by off-course Rivers and adjacent flood plains, sand piles, vegetation encroachment, potholes, and gullies. These collectively make travel slow, unsafe and hinder access to the communities. One-on-one interviews with community members revealed that during festive periods and holidays, there is a low return rate by family members who live outside the communities, specifically, those who reside in larger towns or other States due to the poor road conditions. These issues were mentioned mainly by community members bordering Shellenge-Bakta rural road and Jada-Gangyaki-Mummuye-Tola road. Details of other socio-economic parameters assessed are provided in chapter 3 of this report.

ES 7: Impacts Identification

Summary of Potential Beneficial Environmental and Social Impacts

Environmental Impacts

- Control of floods and Erosion
  Reclamation of Right of Way (ROW) on roads where villages, markets and farmlands have encroached (A standalone RAP has been prepared for any issue of displacement that arise)
- Improved rural road infrastructure and sustainable hydraulic structures
- Increased opportunity to develop environmentally sound and safe fadama agriculture and pastoral potential
- Long term and sustained engineered control of flooding of roads and flood plains through application of resistance and resilience flood plain management strategies (Annex 5)
- Development of a Waste Management Plan to address associated construction wastes within the project corridor

Social Impacts

- Employment Generation
- Stakeholders' engagement
- Capacity building for stakeholders and project personnel
- Promote community inclusion
- Creation of investment opportunities
- Provision of a lead way to drive the Adamawa State Government towards ensuring improved Integrated Water Resources Management (rivers, streams and flood plains in the project areas)
- Increased accessibility for local companies to access project communities so as to fulfil their Corporate and Social Responsibilities
- Enhanced and easy transportation of agricultural produce and other commodities
- Enhancement of the food/crop value chain in the project corridors
- Improved access to social amenities- markets, schools, mosques/churches, recreational areas and health care centers

- Improved rural road security
- Strengthening of roads rehabilitation works and supervision systems including improvement in institutional responsibilities for roads construction and maintenance
- Improvement of Local and State trade/business opportunities
- Improvement of public goodwill and satisfaction towards governance in Adamawa State.
- Transfer of skills

Summary of Negative Environmental and Social Impacts

Environmental Impacts

- Increase in fugitive dusts
- Surface water contamination from sediment-laden runoffs
- Loss of vegetation and fauna habitat destruction
- Vulnerability to erosion and road breakage during construction of side drains
- Increase in noise levels and vibration disturbances from operation of heavy-duty vehicles
- Waste generation has the potential to become public nuisance, breeding grounds for disease vectors and cause contamination of soil and water

Social Impacts

- Disruption of farming activities in fadama areas. (This has been addressed in a standalone RAP).
- Possible relocation and destruction of markets, huts, petty trading shops and farms encroaching in identified project roads.

  (It is noteworthy to state that the Adamawa RAMP PIU is currently preparing a Resettlement Action Plan (RAP) to address all forms of physical and economic displacement. Furthermore, all issues triggering OP 4.12 highlighted in this ESIA report will be firmly and appropriately addressed in the RAP. The mention of any such issues in this ESIA report is for the purpose of highlighting envisaged socioeconomic impacts. The RAP as mentioned earlier will address all OP 4.12 related issues, risks or impacts).
- Gender Based Violence, Violence Against Children, and Sexual Exploitation and Abuse
- Labour Influx
- Increased risk of communicable diseases such as HIV/AIDS and other STIs: due to influx of migrant workers, hawkers etc.
- Increased demand on existing community health and sanitation infrastructure
- Increased traffic with potential to increase the rate of traffic accidents and injuries.
- Disturbance of fishing activities and recreation areas (addressed in standalone RAP)
- Occupational accidents and injuries to workers
- Risks related to community health and safety
- Increased respiratory and eye problems from exposure to dusts and gaseous

ES 8: Environmental and Social Management Plan and estimated costs

The ESMP has been developed to meet international and national standards on environmental and social (E&S) performance and covers the project implementation phases (i.e. Pre-construction, construction and operation & maintenance phases) of the project. It also presents the cost of mitigation measures of potential adverse impacts resulting from the proposed works, including monitoring responsibilities and cost. The total cost of mitigation is **Eighty Seven Million, Six Hundred and Thirty-Three Thousand, Seven Hundred and Five Naira Only (₦87,633,705.00)** which corresponds to Two Hundred and Forty-two Thousand, Seven Hundred and Fifty-three US Dollars Only (USD242,753.00). Table below gives a detailed breakdown of mitigation and monitoring from pre-construction phase to operation phase.

It is noteworthy to state that the cost of mitigation measures are indicative of the twenty-nine (29) rural roads

Indicative cost of implementing the Environmental and Social Management Plan (ESMP)

S/N	Activity	Description	Estimate US($)	Estimate Naira(N)
1	Mitigation	Cost for implementing the mitigation measures in the ESMP	242,753.00	87,633,705.00
2	Monitoring	Cost for monitoring and audit for responsible institutions in the ESMP	108,162.00	39,049,000.00
3	Capacity Building	Training workshops	83,162	30,354,416
4	Budget for Disclosure	Costs for disclosure of safeguards instruments	4,016.6	1,450,000
	Sub-Total		438,093.6	158,151,800
	Contingency	10% of Sub-total	43,809.36	15,815,180
Grand Total			**481,902.96**	**173,967,000.00**

ES 9: Stakeholder Consultation

Stakeholder Consultations were held from the 13th-27th of August 2018. Consultations were conducted with all relevant levels of stakeholders following a proper stakeholder identification and mapping. Specific details of consultation with stakeholder in the decision-making category are provided in the Executive Summary. More specific details on consultations are provided in chapter 6, and the annexes 11 and 12 of this report.

Date:		**August 13th, 2018**	
Location:		**PIU Conference Room**	
Participants:		PIU, State Ministries, Leaders and Community members from project roads, women group, youth group, farmers, drivers/cyclists	
S/N	**Stakeholder Group**	**Negative Concerns/Impacts**	**Response of PIU/ESIA Consultant**
1.	All project Communities	Loss of Land/Farmland and other economic assets. This will cause financial loss, disruption of business or Agricultural activities. Loss of temporary structures among others.	Road rehabilitation will follow Existing road alignments as much as possible to avoid loss of assets/land. Any unavoidable loss of Land/farmland or assets or business will be compensated based on the Resettlement Policy Framework (RPF) which will be implemented through a Resettlement Action Plan (RAP)
2.	Community members especially women and young children	Fear of Road Accidents as the improved roads will lead to high speed by vehicles on the roads which may result in accidents. They also feared that construction vehicles and plants may cause accidents within the project communities.	They were assured that contractors will erect caution signs, warning signs and speed limit signs during and after construction. Contractors drivers will be trained on OHS and safety procedures
3.	Women Group	Fear of increased spread of STD, HIV/AIDS, and SEA in the various projects communities-brought about by influx of immigrant workers and	The Adamawa RAMP SPIU And Local Government Health departments and Community Leaders shall sensitize the communities against sexual immorality, and especially their women and young girls against being lured with money and

		women of easy virtue coming to look for business at construction camps.	job/business opportunities by construction workers, contractors and other new comers to the project areas. The contractors and their workers shall be required to sign and abide by code of conduct.
4.	All the project Communities	Erosion of Communities cultural values and norms by new comers-works and services providers who may have different backgrounds from the project Communities. The labor influx will result in mixing and socialize with the project community members.	They were informed that the construction camps shall be located away from the communities to minimize close interaction. The community leaders shall sensitize their members especially youth to shun unhealthy foreign culture and norms. Contractor workers will also be sensitized on the do's and don'ts of the project communities

Consultation with Adamawa State Ministry of Works

Items	Summary of Discussions	Resolution/ Resolution
Date	August 18th, 2018	
Location	Office of the Permanent Secretary, Adamawa State Ministry of Works	
Participants	Eng. Mohammed Suleiman (Permanent Secretary), Eng. Abdullahi Farouk Tarfa (Director, Civil Engineering Department), RAMP PIU, ESIA Consultants	
Introduction	The PIU introduced the RAMP to the Ministry and solicited their support in the success of the project	
Concerns Raised	Roads should be aligned to link up several communities so that the benefits can be optimized During the design and construction works efforts should be made to avoid obstacles such as rocks, hills	These will be incorporated in the project design and construction phase
	During the design and construction of the roads, efforts should be made to avoid destruction of heritage sides such as grave yards, shrines and monuments, as this will bring disharmony between community members and workers	This will be addressed through site specific consultations before commencement of project works. In addition, Chance Find Procedures will be provided in the ESIA to address such probabilities.
	Community may request that borrow pits be left for other uses after the construction phase	Civil workers should ensure that all borrow pits reinstated before leaving the site as this is the World Bank requirement. This will also be included as part of contractor's agreement
	There should be constant and continuous consultation with the Ministry of Works, particularly the Civil Engineering Department. Failure to consult with the Ministry in the past has led to; compromise of quality of roads; inadequate road filling; cut off and submerge of some hydrological structures	The SPIU engineers will ensure they liaise with the Ministry of works to ensure project quality and sustainability

Consultation with Federal Roads Maintenance Engineer Adamawa State

Items	Summary of Discussions	Resolution/ Resolution
Date	August 19th, 2018	
Location	FERMA Office, Yola	
Participants	Eng. B. Y. Kawuwa, Federal Roads Maintenance Engineer Adamawa State), RAMP PIU, ESIA Consultants	
Introduction	The meeting started at 11.00pm with the PIU introducing the RAMP to the Ministry and solicited their support in the success of the project	
Concerns Raised	Each of the 29 roads should be handled based on its peculiarities e.g. erosion prone areas, flooding areas, rocky areas and normal areas. Otherwise these issues will lead to unsustainability of project investments	Potential for erosion and flood will be incorporated in the project design and compliance to standards will be monitored by the supervision consultants and the SPIU
	For proper maintenance and sustainability, there should be periodic maintenance (checks on the roads, e.g. potholes, and washouts). There is also need to	Component 2 of the project would finance road maintenance activities on rehabilitated roads and support state

	constantly check for erosion to avoid/prevent water over-tripping, eroding of embankment, development of washouts; etc.	mechanisms for maintenance funding. The model to be used in the maintenance mechanism involves community-based approach to among others.
	Maximum attention should be paid on using caution signs. Relevant caution signs should be place at the appropriate places throughout the construction and post construction periods to avoid accidents	This will be stated as mitigation measures in the ESMP and contractors will be monitored by the supervision consultants and the SPIU to ensure compliance

Requests from Stakeholders

The stakeholders made the following requests and recommendations.

- The construction companies should employ youth from the project communities for the required labor.
- The project proponents should be considerate in paying compensation to all displaced persons;
- The project proponents should consult with other stakeholders like the Water Board, electricity supply companies, and NNPC for their inputs before implementing the project to avoid disruption of other infrastructure and to minimize damaging of the roads after construction in the process of fixing infrastructural utilities, services and facilities.
- The project should be able to optimize the utilization of the existing facilities such as borrow pits and quarries if available, to reduce the economic, environmental and social impacts of creating new ones;
- Women who are interested should be considered for offices such as site secretaries and record keepers during the construction stage;
- Project communities should be sensitized on the effect of STDs HIV/AID and on the need to maintain their cultural values;
- Community welfare should be considered by the project proponent to build thing like clinics and boreholes for the various communities.

Vulnerable Groups

Vulnerable groups in the project areas were identified. Consistent with the North-Eastern states of Nigeria, these include:

- Children
- Old men and women
- Physically challenged individuals