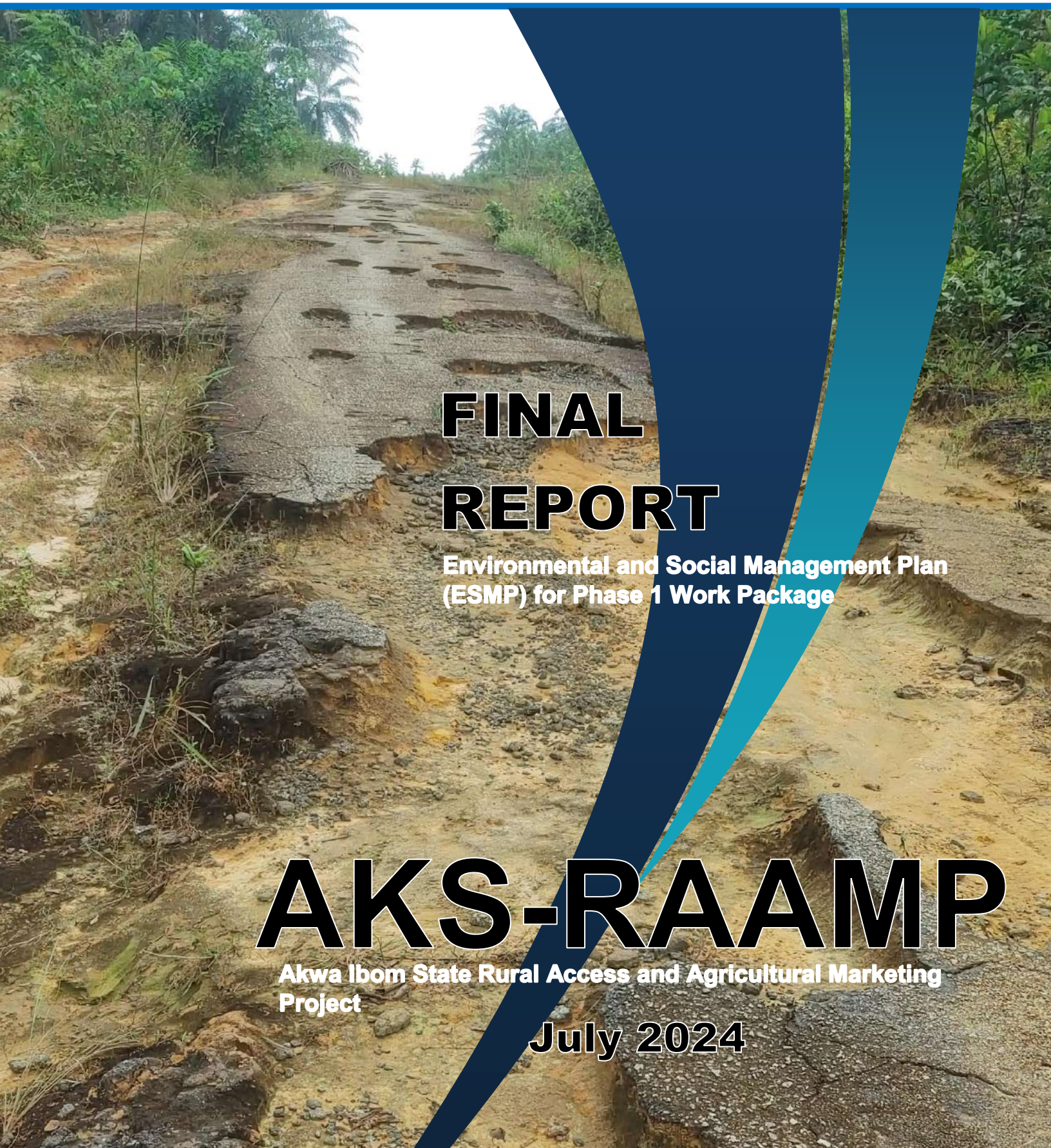
ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP) FOR PHASE 1 WORK PACKAGE

RAAMP
AKWA IBOM STATE

Federal Ministry of Agriculture and Food Security - FMAFS



FINAL REPORT

Environmental and Social Management Plan (ESMP) for Phase 1 Work Package

AKS-RAAMP

Akwa Ibom State Rural Access and Agricultural Marketing Project

July 2024

EXECUTIVE SUMMARY

ES 1: Background

The Federal Government of Nigeria (FGN) has initiated the preparation of the Rural Access and Agricultural Marketing Project (RAAMP), the successor of the Second Rural Access and Mobility Project (RAMP-2). RAAMP has been valued at an implementation cost of 575 million USD. The project will be supported with financing from the World Bank (WB) and the French Development Agency (AFD) and will be guided by the Government's Rural Travel and Transport Policy (RTTP). The contributions from the World Bank, the AFD and the Government of Nigeria (GoN) are 280 million USD, 230 million USD, and 65 million USD respectively. The lead agency for the Federal Government is the Federal Department of Rural Development (FDRD) of the Federal Ministry of Agriculture and Rural Development (FMARD). The Federal Project Management Unit (FPMU) is responsible for overseeing the project on behalf of the FDRD, while at the state-level, the State Project Implementation Units (SPIUs) of nineteen (19) participating states (Abia, Akwa Ibom, Bauchi, Ebonyi, Ekiti, Gombe, Kaduna Kano, Katsina, Kebbi, Kogi, Kwara, Niger, Ogun, Ondo, Osun, Oyo, Plateau and Sokoto states) are implementing RAAMP in their respective states on behalf of their state governments. The Project Development Objective (PDO) of RAAMP is to improve rural access and agricultural marketing in selected participating states whilst strengthening the financing and institutional base for effective development, maintenance and management of the rural road network sustainability. RAAMP has four project components – Component A: Improvement of Rural Access and Trading Infrastructure; Component B: Asset Management, Agro-logistics Performance Enhancement and Sector Reform; Component C: Institutional Development, Project Management and Risk Mitigation and Component D: Contingent Emergency Response.

Specifically, the Akwa Ibom State RAAMP (AKS-RAAMP) in view of achieving the outputs of Component A, proposes to carryout intervention works on 76 roads totalling 286.321km. Precisely, the proposed intervention works shall include: Spot Improvement (130.63km) reconstruction and rehabilitation of river crossings/cross drainage structures (39m), backlog maintenance (61.775km), rural road upgrades (93.916km), under the Phase 1 work package (See Tables 1 – 4 in Chapter One of this ESMP for full list). The intervention works/sub-projects shall be situated in various rural communities located within 23 LGAs across the three senatorial districts of Akwa Ibom State (according to the Terms of Reference). The proposed intervention works have undergone Environmental and Social (E&S) screening and have been deemed necessary for E&S assessment. Consequently, the AKS-RAAMP is preparing an Environmental and Social Management Plan (ESMP) to identify, assess and mitigate the envisaged potential adverse E&S risks and impacts associated with the proposed intervention works. The ESMP will also enhance beneficial impacts of the proposed intervention works.

ES 2: Legal and Regulatory Framework

The preparation of this ESMP was guided by the Environmental Impact Assessment Act No. 86, 1992 (codified as EIA Act CAP E12 LFN 2004). Other social legal and regulatory frameworks applicable to the project include: The Land Use Act, Cap L5, LFN, 2004, Employee Compensation Act (2010), Labour Act (2004), Social Development Act (1974), The Child Rights Act (2003), etc. (See Table 5 in Chapter Two for the full list), while the Federal Environmental Laws, Regulations and Guidelines are applied to ensure international best practices in infrastructure development with due considerations on the safety and health of the environment.

According to the World Bank Environmental Assessment (EA) screening criteria, the project has been identified as Category B meaning that impacts will be site specific and manageable (the activities will involve minimal adverse social or environmental impacts that are few in number, generally site-specific, largely reversible, and readily addressed through mitigation measures). The ESMP was prepared in line with the Environmental and Social Management Framework (ESMF) prepared for the RAAMP and the four (4) triggered World Bank operational policies: Environmental

Assessment (OP 4.01), Natural Habitats (OP 4.04), Physical Cultural Resources (OP 4.11) and Involuntary Resettlement (OP 4.12) as discussed in chapter two of this report.

ES 3: Proposed Intervention Works

The proposed intervention works will be carried out in the 76 roads spanning a total length of 286.321km. The work packages include: a) Backlog Maintenance (11 roads - 61.775km) b) Spot Improvement (29 roads – 130.63km) c) Road Upgrades (35 roads – 102.204km) d) Cross Drainage Structures (4 Nos – 39.00m). The civil work activities are summarized below.

- Site clearance on both sides of roads.
- Excavation and hauling of unsuitable material.
- Compacting excavated sections to 100% WAS compaction.
- Excavation of fill material from approved borrow pits.
- Filling, shaping, and compacting approved fill material for sub-base and base course.
- Desilting existing drains and culverts.
- Construction of reinforced concrete drains and cross drainage structures.
- Prime coating and overlaying with asphaltic wearing course.
- Installation of traffic control features along the road corridor.
- Vegetation control.
- For paved roads: prime coating, surface dressing of eroded slopes.
- For unpaved roads: grading and compacting, construction of earthen drains.
- Construction of box and pipe culverts, including reinforcement and concrete walkway.
- Provision of stone pitching for embankment protection at designated culvert locations.

Refer to Chapter 3 for specific description of the civil work activities according to work packages.

ES 4: Description of the Environment and Social Baseline of the Project Locations

The 76 roads (earmarked for rehabilitation and upgrades are located across 23 LGAs in Akwa Ibom state. Akwa Ibom state, located just north of the Equator, experiences a humid tropical climate with abundant rainfall and high temperatures ranging between 26°C and 29°C[1]. Its mostly flat landscape, dominated by coastal plain sediments, features undulating terrain in Itu and Ibiono Ibom LGAs, with elevations up to 200 feet above sea level[2]. The state boasts lush vegetation, including saline water swamp forest, freshwater swamp forest, and rainforest, with 22 protected forest areas covering 31,857 hectares[3]. Its complex drainage system comprises rivers like the Cross River, Imo River, and Qua Iboe River[4]. Environmental challenges include deforestation, soil erosion, and pollution from oil exploration. With a population of over 5.4 million, Akwa Ibom's economy revolves around crude oil production, supplemented by agriculture, fishing, and minor industries. Livelihoods vary, with fishing, farming, and trade being prominent occupations, alongside public sector employment. Traditional crafts also play a significant role in the state's economy and culture.

[1] Source: About Akwa Ibom: Climate

[2] Source: About Akwa Ibom State: Geography & Location

[3] Source : Analysis of Vegetation Index of Protected Forests in Akwa Ibom State, Nigeria between 2000 and 2021

[4] Source: Qua Iboe River estuary, Akwa Ibom State, southeastern Nigeria

Characteristics of the Specific Project Locations (roads to be intervened)

- The areas are rural in nature owing to indicators such as minimal population, socio-economic infrastructure and use of technology.
- The conditions of most roads are deteriorated with numerous potholes, erosion, and some sections of the roads are narrow and barely accessible by vehicles. Notable roads include Backlog Maintenance (Nung Ukim – Ukwok – Ibam Edet with spur from Aba Itiat – Usuk Ukwok Market, Ifuho Mickon – Ayayin Ikot – Nkpo Bridge); Spot Improvement (Affi Uda – Udinghie – Akprangkprang, Uruting Road, Eyonsek – Eniogo – Eyobasi with a Spur to Eniogo Beach, Abiakowo – Akai Udo – Isuk Ebughu, Ukam – Ikot Obio Okoi – Ikot Abia Road); Upgrading (Qua Iboe Junction – Akoi Beach, Ikpe Ikot Nkon – Ekoi Ikot Nyono – Ikot Udo Ofe – Ibem Ukot – Oniongono Ikpe – Mbiakpa Ibakesi Road)
- Several cultural sites and practices have been identified including the Atuk Idim Asutan Ekpe Shrine along Okop Nko – Okop Ndua Road, Udo Akpan Umoh shrine along Osuk Ntan – Ikot Akpan Obong road, Akai Ekpo Shrine along Edeobom - Ekponwa Market Spur, Tombstones along Ekoi - Adaha Efiat etc.
- Areas with security threats were also identified in some locations. Detailed information on all these locations is provided as follows:
  - Eket – Ibeno – Nditia Road
  - Ukam – Ikot Obio Okoi – Ikot Abia Road
  - Umume – Oboro Oro – Oruko Road etc.

Refer to Chapter 4, Tables 17 – 20 for site specific description of the roads to be rehabilitated.

Environmental Baseline of the Site-Specific Locations

Surface water samples were collected from 28 rivers and streams along the 75 roads slated for intervention. In-situ analysis was also performed real-time for parameters like Dissolved Oxygen, pH, and Turbidity. Physiochemical parameters (e.g., Salinity, TDS, Nutrient Levels, and Heavy Metals) and microbial parameters (e.g., Total coliforms, E. Coli) were also carried out. The analysis of surface water samples showed that most parameters met the FMEnv/NESREA permissible limits ***(Detailed results are provided in Table 21 and Annex 18)***.

Fifteen (15) topsoil samples were collected from 75 roads using a systematic random sampling method. The analyses of both Physiochemical parameters and microbial parameters were carried out. The result revealed that studied parameters from soil samples for almost all the locations were within the FMEnv/NESREA permissible except for one location which showed elevated levels of lead (60.38 mg/L), chromium (3.982 mg/L), and cadmium (15.46 mg/L), exceeding permissible limits of 2.0 mg/L, 0.05mg/L and 0.03mg/L respectively. The d*etailed results are provided in Table 21 and Annex 18*.

Air quality levels were measured at strategic locations along the proposed roads corridors. Factors considered includes sections of the road in proximity to: a) local communities, churches, schools, etc. b) socioeconomic clusters (markets, business premises, artisanal shops, etc.) etc. Air quality measurements were taken across 180 locations. The results for the air quality parameters (CO, NOx, SOx, NH_4, H_2S, VOC, SPM 2.5, SPM 10, SPM Total) measured showed parameters are within permissible limits – CO (10), NOx (0.04 – 0.06), SOx (0.01), NH_4 (0.2), H_2S (0.008), VOC (0.1), SPM 2.5 (80), SPM 10 (250), See Annex 25 for details.

Accordingly, noise levels were measured at the same sampling stations as those used for air quality measurements. The results show that noise levels ranged from 21dB – 48dB, which were all within the National Environment (Noise Standard and Control) Regulation of 55dB (day). Detailed results are presented in Annex 25.

Socioeconomic Baseline of the Project Locations

A comprehensive socioeconomic baseline study was conducted to assess the existing conditions in all rural communities situated within and/or along the roads earmarked for structural rehabilitation and upgrade within the project area. A semi-structured questionnaire[5] were administered to a diverse range of respondents, including community locals, women and youth groups, men, business owners, farmers, stream users, etc. located within the project corridors. In total, 1725 respondents were surveyed across all roads earmarked for rehabilitation under the works.

Socioeconomic survey was conducted on Gender Distribution, Age of Respondents, Education & Literacy Rate, Religious Affiliations, Marital Status, Income Levels and Livelihood Activities and Health of the respondents across the project locations. The result of the survey revealed that of the total respondents, 56% were male (964 respondents) and 44% were female (761 respondents), for respondents age, 50-75 (38%) age bracket were the majority, while for Education & Literacy Rate 88% of respondents had formal education. The result further revealed that for Religious Affiliations, 96% (1662) of respondents: were identified as Christians, Marital Status 44% (766) of respondents were married and they formed the majority of the respondents, while for Income Levels and Livelihood Activities respondents with ranging from 0 – N100,000 (96%) to N100,000 were the majority. **Refer to Chapter 4, Section 4.5, for full details on the socioeconomic baseline studies.**

ES 5: Identified Potential Project Environmental and Social Impacts

The project impacts and mitigation measures are highlighted in Chapter 5 and 7 respectively. However, a summary is provided below:

Positive Impacts

- The proposed road intervention project shall reduce the risk of erosion and flood as a result of proper drainage and culvert construction. Some notable locations include the following roads; Affi Uda – Udinghie – Akprangkprang, Uruting Road, etc.
- The prime coating of the roads proposed for upgrading with Medium Curing (MC-1) cut-back bitumen will improve the durability and surface integrity of the roads. Furthermore, it will reduce the road's susceptibility to erosion and fugitive dust generation which occurs mostly during the operation phase.
- The rural roads rehabilitation will improve the transportation of agricultural products and commodities to markets, reducing post-harvest losses therefore promoting more efficient and sustainable farming practices.
- Rehabilitation of rural roads will improve transportation infrastructure, making it easier for the locals to commute. This will lead to increased mobility, reduced travel time, and lower transportation costs for individuals and businesses.
- The intervention works will enable farmers and local businesses to transport their products to markets more efficiently. This will result in expanded market reach, increased sales, and better economic opportunities for rural entrepreneurs.
- The intervention works will promote social inclusion by connecting remote communities to the broader network. This will help reduce isolation and strengthen social ties among different communities. ***(Refer to Section 5.3 for full positive impacts of the project).***

[5] A semi-structured questionnaire was prepared and administered to a minimum of six (6) respondents per quadrant (about 25 respondents per sheet). All administered questionnaire was retrieved and analysed to estimate socioeconomic conditions within the project communities.

Potential Adverse Impacts and Mitigation Measures

Some potential adverse impacts of the intervention works and mitigation measures are provided in the table below.

Adverse Environmental Impacts	Mitigation Measures	Adverse Social Impacts	
Removal of beneficial flora and economic crops currently located on the ROW of the road. Locations include Abiakowo - Akai Udo - Isuk Ebughu, etc.	Limit Site Clearing to designated zones (width of the road)	Traffic build-up is envisaged in some access roads leading to the roads earmarked for intervention such as Calabar – Ikot Ekpene expressway – the access road to Nkim Itam – Ikot Anie Itam, etc. This may result in minor delay in commuters' travel time.	Implement Traffic Management Plan (TMP) Schedule mobilization and haulage of equipment for off peak periods e.g. evening hours or weekends
Fugitive dust generation during excavation, site clearing and other civil works.	Provide workers and PAPs with appropriate PPEs such as respirators or masks, to reduce dust inhalation.	Livestock Roadkill: may occur as trucks move through some project areas where open grazing of livestock is practiced	Enforce speed limits (40mph), install speed bumps and train drivers to reduce vehicle speed in areas with open grazing.
Surface Water streams/rivers) Contamination: from machinery oil/lubricant spills, battery acid, etc., particularly during material cleaning or lubricant refilling, around areas such as Eyonsek - Eniongo - Eyobasi with a spur to Eniogo Beach (Eniogo River), Eket – Ibeno – Nditia (Nditia River) (as well as other roads with surface water present).	Implement spill prevention and containment procedures Conduct regular equipment maintenance to prevent leaks and spills	Road users may suffer restricted access to selected roads when works are ongoing.	Early notification of PAPs and road users.
Desilting in existing dilapidated culverts for the purpose of rehabilitation may cause sediment runoffs in nearby streams	Use of containment measures, such as berms or barriers, around construction sites to prevent runoff into streams during desilting.	Implementation of civil works (widening of the shoulders of the existing road) may result to reclamation of the ROW and impact on livelihoods, farms, etc. Power distribution pole relocation may occur along Umume-Uboro Oro-Oruko Road during road widening or drain construction, potentially causing damages, power outages, and eliciting negative reactions from relevant agencies overseeing the infrastructure.	Implement RAP and compensation to affected individuals or communities Explore the option of adjusting the road alignment to the right to entirely avoid any interference with the power distribution poles.
Carbon emission from exhaust fumes of vehicles carrying construction materials to work/project areas may also occur.	Use vehicles, plants and equipment that are in good condition generally less than 5 years old.		Communicate with local residents and businesses to inform them about scheduled temporary power outage.
Noise levels may exceed the NESREA National Environmental (Noise Standard and Control) (75dB) due to the operation of vehicles.	Where possible retrofit all hired vehicle exhausts with mufflers/silencers to minimize noise.		Coordinate with PHEDC in advance to plan for pole relocation and minimize disruptions to power supply.
Increase in on and off-site quantities of generated construction wastes as well as toxic waste (such as asphalt, spent oils and chemicals) etc.	Implement WMP	Labour influx may lead to: Potential pressure on community resources (e.g., water points), Increase risk of communicable diseases, Sexually Transmitted Infections (STIs) and Sexually Transmitted Diseases (STDs) as a result of consensual and transactional sexual intercourse	Workers' camp to include utilities (water, etc.) Vaccinate workers against common and locally prevalent diseases
Project activities may affect water and sanitation conditions, increase chances of stagnated water, which may lead to waterborne diseases.	Ensure proper design and construction of drainage systems to prevent stagnation of		Provide HIV/AIDS and STDs campaigns and sensitization

Adverse Environmental Impacts	Mitigation Measures	Adverse Social Impacts	
	water and promote effective water flow away from the project area.	between workers, locals and followers, risk of illicit behaviour and practices (such as theft, physical assaults, substance abuse, prostitution, etc.), etc.	Ensure workers sign Code of Conduct (CoC), etc.
Rehabilitation activities may increase the occurrence of open defecation by construction workers leading to poor environmental sanitary conditions.	Provision of gender specific mobile toilets (Porta-Potty) and enforcement of their use by construction workers.	Teenage and adolescent females/males as well as adults, may be exposed to SEA/SH as a result of interactions with workers and possibly followers.	Conduct GBV sensitization and awareness program Mapping of Service providers and establishment of GBV-GRM
Excavation of earth from existing borrow pits will result in widening of the borrow pit perimeter and may predispose areas currently suffering erosion to further erosion and inundation, especially where existing borrow pits were not reclaimed from previous activities.	As much as possible, refrain from gathering earth materials from borrow pits that are susceptible to erosion. If sourcing earth materials from erosion-prone pits is unavoidable, deploy erosion control measures around borrow pits to mitigate widening and prevent additional erosion.	Construction Workers may be susceptible to robbery and extortion including equipment theft from local hoodlums and pirates along Eket – Ibeno – Nditia Road, Umume -Uboro Oro – Oruko Road, etc.	Obtain a Social License to Operate (SLO) from the host communities prior to commencement of civil works. Liaise with and build positive relationships with vigilantes and community watch groups to enhance local security support and ownership of project.
OHS risks and impacts which includes: Workers' fatigue, road accidents, etc., exposure to risk of dust, toxic bituminous fumes and elevated noise levels, exposure of workers to flammable toxic gases leading to injuries or fatalities from gas leaks and explosions from gas pipeline, etc.	Implement OHSMP Provide workers with appropriate PPEs such as dust masks, respirators, ear plugs, and noise-cancelling headphones; Conduct regular OHS regular training sessions on health and safety practices, including the proper use of PPE;	Children may face harassment or violence from workers, particularly when asked to perform tasks like buying food or assisting with materials.	Ensure that children and minors are not employed directly or indirectly on the project.

Refer to Chapter 5 and 7 for full details of the anticipated E&S risks and impacts and mitigation measures respectively.

ES 6: Environmental and Social Monitoring Programme and Costing

Four (4) ESMP matrix table has been prepared for the four (4) work packages – Backlog Maintenance, Spot Improvement, Roads Upgrades and Cross Drainage. However, costings were proffered based on the number of lots in each work package This is simply because several contractors will be procured for the intervention works. Nonetheless, where unique peculiarities exist in any of the project locations or are noteworthy, the ESMP has captured such. The ESMP also includes indicators, institutional arrangement, roles, responsibilities and an estimated budget. All the mitigation measures specified in the ESMP shall be included in the bid documents and contract documents for the successful implementation of the road rehabilitation. Details are documented under Chapter 7. In addition, a summary of the ESMP mitigation cost for each work package per Lots has been included in Table 48 of this report.

Capacity Building and Training

Capacity building measures will be required to ensure that institutions involved in implementing the various ESMP components have the necessary knowledge and skills to fulfil their roles. A capacity building plan, recommended modules and its associated cost implications has been documented in Chapter 7, section 7.4 of this report.

Implementation Schedule

The activities related to environmental management and monitoring will be integrated in the overall road rehabilitation schedule. The roads rehabilitation activity is expected to be completed within 18 months. Refer to Section 7.7, Table 46 for more details.

ESMP Budget

To effectively implement the mitigation and monitoring measures recommended in this ESMP, necessary provision will have to be made. The cost of these measures has been estimated and included in the ESMP and presented in the table below. The cost of mitigation to be implemented by the Contractor will be included in the contract as part of the implementation cost by the Contractor. The overall total estimated cost for the ESMP implementation, monitoring and capacity building for all intervention packages is estimated at Seventy-Two Thousand, Seven Hundred and Thirty-Four US Dollars Only (**USD 72,734).** This is equivalent to One Hundred and Two Million, Four Hundred and Eight Thousand, Eight Hundred and Forty-Three Naira Only **(N102,408,843).**

Item	Intervention Package(s)				Total Cost (A+B+C+D)	
	Backlog Maintenance (A)	Spot Improvement (B)	Road Upgrades (C)	Cross Drainage Structures (D)	NGN	USD
Mitigation	23,743,978	28,147,328	5,274,368	11,365,512	68,531,186	48,673
Monitoring	5,254,656	5,405,312	4,729,472	3,066,624	18,456,064	13,108
				Capacity Building	7,400,448	5,256
				Sub-Total ESMP Implementation Cost	94,387,698	67,037
				Contingency (5% of Sub-Total ESMP Implementation Cost)	4,719,384.9	3,351.85
				GRM Implementation Cost	1,500,928	1,066
				ESMP Disclosure	1,800,832	1,279
				Grand Total ESMP Implementation Cost	**102,408,843**	**72,734**

***Note:** All conversions were done using the Central Bank of Nigeria (CBN) current exchange rate of 1USD = 1,408 NGN at April, 2024.*

ES 7: Grievance Redress Mechanism

The GRM for the proposed intervention works will adopt the provisions in the existing Beneficiary Feedback and Grievance Redress Mechanism and will be applied at 3 levels (community, AKS-RAAMP and FPMU levels). The GRM will assist the AKS-RAAMP PIU to ensure that deliberate processes and procedures are put in place to capture, assess and respond to concerns from project beneficiaries, project executors and the general public during the implementation of the project. This will ensure smooth implementation of the road rehabilitation, timely and effectiveness in addressing problems that may be encountered during implementation. In line with the Beneficiary Feedback and Grievance

Redress Mechanism, when a grievance is received and registered, necessary steps will be taken to resolve the issues namely: a) Receipt and Registration of Grievance, b) Feedback, c) Verification, Screening and Sorting of Grievances, d) Investigation and Consideration of grievances, e) Implementation and Case Closing (Refer to Chapter 6 ***for more details of the Grievance Redress Mechanism***)

ES 8: Stakeholder Engagement

Stakeholder consultations for the preparation held between 10th – 17th January 2024 across the project locations is provided below. Participants at the various consultations included AKS-RAAMP PIU, local government representatives, Community leaders (Obong), Youth Groups, Women Association, Elders, Farmers, Stream users (fishermen, recreationists, and Community members etc. Government/State Agencies (Akwa Ibom State Ministry of Environment and Petroleum Resources (AKSMEPR), Akwa Ibom State Environmental Protection and Waste Management Agency (AKSEPWMA), Akwa Ibom State Federal Roads Safety Corps (FRSC). A summary of critical issues discussed are stated below:

i. The ESMP Consultant team requested for all relevant documents (e.g. design reports, feasibility studies, screening reports, road intervention catalogue etc) to facilitate the entire E&S assessment within the state. In response, the AKS-RAAMP PIU diligently documented all outlined requirements and reiterated its steadfast commitment to providing comprehensive assistance to ensure a seamless and successful execution of the Environmental and Social (E&S) Assessment process.

ii. **AKSEPWMA**: In response to the enquiry by stakeholders of the AKSEPWMA on the potential environmental impacts of the road rehabilitation, the ESMP Consultant stated that the project will be in three phases (pre-rehabilitation, rehabilitation, and operation phases). Potential adverse risks and impacts will be identified based on phases and appropriate mitigation measures will be proffered for the identified adverse impacts and incorporated into the ESMP report. He went further to state that amongst other adverse impacts identified, some of the environmental adverse impacts are waste generation, impact on air quality, surface water contamination, impact on natural habitat etc.

iii. **FRSC**: In response to concerns raised by the comptroller of the FRSC Akwa Ibom State branch regarding traffic impacts of road rehabilitation, the ESMP Consultant clarified that traffic disruptions are expected, particularly during the construction phase due to temporary access restrictions. Additionally, traffic may increase on access roads leading to the project site during the preconstruction phase as materials and equipment are mobilized. The FRSC's assistance may be required for traffic redirection. The comptroller expressed support for ensuring smooth traffic flow and minimizing congestion during rehabilitation activities.

iv. **Local Government Area (LGA) Chairmen**: There were inquiries about measures to ensure that the rehabilitation work does not disrupt local communities and businesses along the routes. The consultant clarified the essence of the ESMP which was currently being developed to target and address all adverse impacts/consequences of the project including the disruptions envisaged.

v. **Community Consultation**: Locals of Ikot Otu enquired to know if the AKS-RAAMP will provide infrastructures such as school and hospitals for the communities as he stated that the villages lack access to social services such as schools and hospitals. The ESMP team informed the locals that the AKS-RAAMP is designed and focused on improving access to markets by rehabilitating rural roads within the state. He further stated that the project does not have the authority and capacity to construct schools and hospitals. Lastly, he stated that the concerns raised will be incorporated in the ESMP report which is being prepared by the AKS-RAAMP.

vi. According to the consultations, areas of cultural significance were noted and documented in Table 27: Potential Negative Environmental and Social Impacts during Rehabilitation Phase and also annex 26. They

were informed that this will be captured in the ESMP with appropriate mitigation measures and will be duly communicated to the Contractors, construction workers and other stakeholders involved in project execution.

vii. The ESMP Consultant inquired about significant challenges encountered by road users and farmers in the project communities. Local vigilantes from Eket – Ibeno – Nditia informed the Consultant about past security issues in the area, such as theft of motorcycles from farmers transporting their produce in the evenings, as well as daylight robberies by hoodlums and delinquents; The youth secretary and treasurer from Ukam – Ikot Obo Okoi – Ikot Abia road stated that there were past security concerns in their community, but since the youths took on security roles and formed a local vigilante group, instances of insecurity have decreased; The locals of Ebighi Edu raised concerns about sporadic insecurity in the community and at the Attabong Beach Market. They reported facing security challenges such as theft, robbery, and kidnappings by sea pirates. Despite government intervention efforts, the community still experiences attacks, leading to the market's non-operational status; the locals of Esuk Edu stated that there have been incidences of pirates' attacks in Esuk Edu village. ***Refer to Chapter 8 and Annex 21 for more details of the stakeholder Consultations.***

ES 9: Recommendations

The recommendations below have been provided for the proposed project.

- Considering that about 45% of the 76 roads selected to be rehabilitated in Akwa Ibom State are either affected by flooding or erosion to some degree (***See Annex 26 for list of roads affected by flooding/erosion***), it is best practice to manage the root-causes of the erosion and flood occurrences, especially if they are due to topographical or engineering defects. Roads prone to or affected by flooding and erosion will require adequate attention from the Akwa Ibom government and the AKS-RAAMP PIU. Decision making as regards most suitable, environmentally sound and cost-effective hydraulic controls in flood plains is critical. Decision makers need to weigh the pros and cons associated with resistance and resilience flood control strategies so as to ensure long-term viability of proposed rehabilitation and construction works.
- Drains should be designed and installed based on knowledge of the topography and natural drainage pattern of the area with knowledge of the watershed mitigation measures. (**See Chapter 9 for more information on Recommendations**).