PROJECT: TRANSGAMBIA ROAD CORRIDOR PROJECT
COUNTRY: GAMBIA

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP) SUMMARY
4th FEBRUARY 2018

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<tr>
<th>Team Leader</th>
<th>P.D. TAMBAH, Transport Engineer</th>
<th>RDGW4/PICU.1</th>
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<tr>
<td>C.R. MHANGO, Environmental Officer</td>
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1. INTRODUCTION

The Trans-Gambia Corridor Project is an economic and strategic link connecting the northern and southern parts of both The Gambia and Southern Senegal, and by extension ECOWAS countries through the corridor between Dakar and Lagos. The objective of the project is to facilitate over land traffic flow between the northern and southern parts of the two sister countries and other ECOWAS Member States. The construction or upgrading of the Trans-Gambia Highway is an integral part of the Trans-Gambia Corridor Project. The expected outcomes include: (i) reduced transport cost, travel time and customs formalities time at the borders; and (ii) enhanced potential for trade thereby contributing to poverty reduction and social-economic empowerment of communities on the corridor and the West African Region as a whole.

The Trans-Gambian Corridor (Kaolack-Trans Gambian Highway-Zinguinchor) having a length of 24 km is a part of the Cairo-Dakar-Lagos corridor. The Trans-Gambia Road Transport Corridor is an economic and strategic link connecting the northern and southern parts of both The Gambia and Senegal, and by extension ECOWAS countries through the corridor between Dakar and Lagos. The sector goal of the project is to support economic growth of the countries on the Trans-Gambian Corridor (Kaolack-Trans Gambian Highway-Ziguinchor), considered part of the Trans-West African Highway (from Dakar to Lagos Corridor) and ECOWAS at large by fostering integration through reliable, efficient and seamless transport infrastructure that will increase the competitiveness of the region. This second phase of pavement strengthening of the Trans-Gambia corridor road will be funded by the European Union and will support and complement the Trans-Gambia Corridor Project (TGCP) funded by African Development Bank (AfDB) grant. The overall objective of this second Phase of the Programme (as was the case with the ongoing first phase) is to boost regional countries integration while improving road infrastructure and promoting intra-community and regional trade. The expected outcomes include: (a) reduced transport costs and travel time; (b) enhanced potential for agriculture thereby contributing to poverty reduction among communities on the corridors; (c) improved road safety, and (d) improved regional trade and integration.

The ESMP report was prepared by SAI SYSTRA Group, as part of the Feasibility and Detailed studies for the TransGambia Corridor Project II carried out in May 2016. The result from this ESIA /ESMP study reveals that project activities in terms of upgrading or strengthening of trans Gambia highway way sites in Soma (LRR) and Farafenni (NBR) may not have major negative impacts on the environment and local communities during implementation.
2. POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK
The ESIA for the proposed TransGambia Road Corridor Project will be conducted within the policy, legal and institutional framework of the Gambia, NEA, EU, AfDB and relevant international environmental conventions to which the Government of the Gambia is a signatory. The National Environmental Agency (NEA) is the environmental regulatory authority in charge of issuing environmental guidelines and reviewing the Environmental Impact Assessment process.

2.1 NATIONAL LEGISLATION AND POLICY

2.1.1 The Gambia Environmental Action Plan (GAP)
The Gambia’s Environmental Action Plan provides the overall policy framework for sound environmental management in The Gambia. It seeks to promote and implement sound environmental policy. The GEAP puts special emphasis on environmental management, pollutions and nuisances and the necessity to safeguard the well-being of the populations. It is the first integrated environment and natural resources management policy framework of the country that provides an overview of the existing environmental situation and outlines approaches to deal with the problems, including institutional changes and other actions required.

2.1.2 The Agricultural and Natural Resources (ANR)
The ANR policy objectives focus on: (i) improved and sustainable measurable levels of food and nutrition security in the country in general and vulnerable populations in particular; (ii) a commercialized sector ensuring measurable competitive, efficient, and sustainable food and agricultural value chains, and linkages to markets; (iii) strengthened institutions (public and private) in the sector, providing needed services, strong and enabling environment, and reducing vulnerability in food and nutrition security; (iv) sustainable effective management of the natural resource base of the sector.

2.1.3 Gender and Women Empowerment Policy 2010 – 2020
The Government of The Gambia recognizes that gender equality and women empowerment is a key factor for the attainment of social and economic development as well as improved population well-being. A number of measures have been taken to mainstream women in the development process in the country and these include: (i) the establishment of the National Women’s Council and Bureau by the Council Act of 1980 which consists of women representatives from all Districts in the country with the Women’s Bureau serving as its executive arm; (ii) the development of the National Policy for the Advancement of Gambian Women (NPAGW 1999-2009), formulated to provide a legitimate point of reference for addressing gender inequalities at all levels of government as well as among other stakeholder activities; and, (iii) the formulation of a Gender and Women Empowerment Policy 2010-2020 which resulted from a series of consultative processes at national, regional, district and community levels.

2.1.4 The Health Policy
The Government of the Gambia places a high importance on the protection and promotion of the health of its citizenry. It is from this perspective that a new national health policy and strategic plan was developed in 2012. The main philosophy of the National Health Policy 2012-2020 is that “a healthy population is a wealthy population”. The secondary level offer more specialized and wider range of care than the primary level and include maternal and new born care, management of malnutrition, malaria, TB, HIV/AIDS and STIs. The secondary level makes referral to tertiary level which is the final level.

2.1.5 The National Environmental Management Act (NEMA 1994)
The National Environmental Management Act (NEMA, 1994) is the legal framework for the control and management of the environment and for matters connected therewith; it is under the purview of the National Environment Agency (NEA). Part V of the NEMA and the EIA Regulation 2014 provides for certain projects listed under Schedule A to be considered for environmental impact assessment. These include tourism projects, large scale agricultural investment projects, large scale aquaculture projects, roads, waste management, and urban
development; Trans-Gambia Bridge Corridor suits the large-scale urban development projects on road infrastructure as described in the Act.

2.1.6 The Wildlife and Biodiversity Act of 2003
The Wildlife and Biodiversity Act of 2003 provides for the Department of Parks and Wildlife Management to declare and manage national parks, reserves and local sanctuaries, as well as Ramsar sites for the purpose of preserving the country’s biodiversity. It also allows for the participation of ‘local people’ in biodiversity management for the purpose of ensuring their sustainable use.

2.1.7 The Local Government Act (1990)
This Act and its re-enacted version of 2002 establishes, and empowers, local government Councils to, among others, ensure, in their areas of authority: (i) prevention of soil erosion; (ii) the management of forests and forest products, especially as it will impede soil erosion and (iii) the regulation of the disposal of refuse, the prevention and generally for the oversight of health and sanitation;

2.2 INTERNATIONAL POLICIES AND REQUIREMENT STANDARDS

2.2.1 AfDB Policies and Requirement Standards
The African Development Bank has established an Integrated Safeguard System (ISS) for a comprehensive projects review and ensuring a cross the board perspective of environmental and social linkages. The consultant has taken into account the International environmental and social requirements of the project financing institutions; these include the African Development Bank policies.

The AfDB’s Integrated Safeguard System sets out the five Operational Safeguard requirements that AfDB projects have to comply with; OS1 on Environmental and Social Assessment; OS 2 on Involuntary Resettlement; OS3 on Biodiversity and Ecosystem Services; OS4 on Pollution Prevention and Control, Greenhouse gases, Hazardous Materials, and Resource Efficiency; and OS5 on Labour Conditions. The project triggers the three operational safeguards as outlined below.

- **OS 1: Environmental and Social Assessment:** since the project requires Environmental and Social Assessment of anticipated impacts, including on cultural heritage and vulnerable groups and requires public consultation, grievance procedures. The project has prepared a Detailed ESMP and will prepare a RAP that includes Stakeholder Engagement and Grievance Redress Mechanism.

- **OS 2: Involuntary Resettlement:** Land Acquisition, Population Displacement and Compensation: the project will have physical and economic displacement and a RAP will be prepared by the project to avoid and minimise impacts and compensate for the impacts.

- **OS 3: Biodiversity and Ecosystem Services:** There will be minimal impacts on biodiversity because the project will involve strengthening of the existing road pavement therefore minimal clearance of new areas.

- **OS4: Pollution Prevention and Control, Greenhouse gases, Hazardous Materials and Resource Efficiency:** The project may pollute land and water resources but the impacts will be site specific and can be mitigated with waste management plans and oil spill prevention plans.

- **OS 5: Labor Conditions, Health and Safety:** This OS is triggered because of temporary and permanent workforce. The ESMP includes mitigation of occupational health and safety impacts and contractor management.

2.2.2 Other International Standards Applicable to the project
The following are other international policies and standards that are applicable to the project:

- EU Environmental Policy, Legal and Institutional Framework
- World Bank Environmental Health and Safety Guidelines,
3. PROJECT DESCRIPTION AND JUSTIFICATION

3.1 Description of the Project

The project with financing of EUR 16 million is exclusively intended to finance the strengthening of the 24 km of connecting roads between Farafenni and Senoba that complement the interventions in Phase I. It is important to note that the lack of an immediate intervention on the section will erode the benefits derived from construction of the bridge as the section will rapidly deteriorate and need rehabilitation at a much higher cost.

The project activities will mainly involve strengthening of the pavement of the 24km road between Farafenni and Senoba in The Gambia.

3.2 Justification for the project

It is important to note that the lack of an immediate intervention on the section will erode the benefits derived from construction of the bridge as the section will rapidly deteriorate and need rehabilitation at a much higher cost. At the sector level, the objective of the project is to support economic growth of the countries on the Trans-Gambian Corridor (Kaolack-Trans-Gambian Highway-Ziguinchor), considered part of the Trans-West African Highway (Dakar –Lagos Corridor) and ECOWAS at large by fostering integration through reliable, efficient and seamless transport infrastructure that will increase the competitiveness of the whole region. The specific objectives are to facilitate overland traffic flow between the northern and southern parts of both The Gambia and Senegal, and by extension among the ECOWAS Member States.

4. DESCRIPTION OF THE ENVIRONMENT

4.1 PHYSICAL ENVIRONMENT

4.1.1 Location

The Republic of the Gambia is located on the Atlantic coast of Africa, between latitudes 13oN and 14oN and Longitude 14oW and 17oW. Occupying a total area of 11,420 sq. km, the Gambia consists of two narrow strips of land from 6 to 26 km wide, extending to over 450 km east along the banks of the River Gambia. The Republic of Senegal is the Gambia’s only neighbour. Occupying an area 20 times the size of the Gambia, Senegal surrounds the Gambia on the north, east and south.

4.1.2 Topography and Geomorphology

The geomorphology of the Gambia is dominated by the River Gambia, which divides the country into two strips of land no wider than 30 km. The Gambia is generally low-lying, with nowhere above 60 m. Over 48% of the total land area of the Gambia is below 20 m high with nearly one-third of the country, at or below 10 m above sea level. Only four percent of the country’s land area is above 50 m. From the River outwards one can identify three topographic regions, the valley bottom, dissected plateau, and sandstone plateau.

4.1.3 Climate and Hydrology

The climate of the project area is tropical, with the alternation of two seasons – a hot, rainy season between June and November, and a cooler dry season from November to May. Temperatures in Banjul and Kombo are moderated by the Atlantic Ocean, experiencing less seasonal and daily variability in daytime temperatures. In an average year, temperatures exceed 35°C for only 34 days in Banjul, compared to 112 days in Basse in the URR. During the winter months (December through March) temperatures fall below 18°C for no more than 10 days in Basse Santo Su, compared to 56 days in Greater Banjul Area. Mean annual rainfall varies from 1200 mm in the south-west to about 500 mm in the northeast. Mean temperatures vary from 14°C in the Coastal areas to 40°C in the eastern part of the country. The rainy season is dominated by the Monsoon winds, while the dry season is dominated by cold and dry winds. The climate is Sudano-Sahelian characterized by a short rainy season from June to October and a long dry spell from November to May with scattered vegetation and forest cover.

The following rivers are located along the right of way: Gwena Creek; Twormie Creek; Yah River, Zor, Bee and River Nyein. The rivers and creeks have long periods of sustained high flows during the wet
season, followed by a gradual decrease in flow during the dry season. The rivers are perennial. Water quality assessments indicate that: the pH is almost neutral ranging from 5.5 to 7.0. They all have low dissolved oxygen (ranging from 2.19 – 6.00 mg/L) and high conductivity, which is indicative of pollution levels in the rivers and creeks, hence the presence of contaminants. Total Dissolved Solids (ranging from 200 to 390 mg/L) and Total Suspended Solids (3- 39mg/L); and Bio-chemical Oxygen ranging from (1.0 – 2.0 mg/L) and high total Coliform counts (420,000 cfu/100ml).

4.1.4 Soils
In general, the geological conditions of the project area in both Soma area and Farafenni are relatively flat with some isolated hilly terrain. These fields include recent silt and more or less sandy sediments

4.2 BIOLOGICAL ENVIRONMENT

4.2.1 Flora
The natural vegetation type of The Gambia is Guinea Savanna Woodland in the coastal area that gradually changes into Open Sudan Savanna in the east. Wetlands consisting of mangroves, barren flats, and freshwater swamps constitute 17% of total land area and the remaining 83% is under various Sudanian-Guinean woodland savannah formations. Over the last one hundred fifty years, the Gambia has experienced significant transformation of the natural land cover as the result of a number of anthropogenic and natural factors: Anthropogenic activities such as agricultural expansion, urban settlement, livestock rearing, wildfires, and increased climate variability including frequent and persistent droughts are blamed for the change in Gambian land cover. In 1946, woodlands that include mangroves covered an estimated 81% of the land area. By 2001, total woodland and mangrove area represented less than 50% of the land area. Closed forest, once the dominant woodland cover, is all but disappeared, and the remaining woodland has been reduced to single canopy woodland or grassland.

4.3 SOCIO-ECONOMIC ENVIRONMENT
This section provides a summary of the existing socio-economic conditions in the vicinity of the RoW before the start of the Project.

4.3.1 Population
The Trans-Gambia Highway cut through two administrative regions in Gambia: Lower River Region (LRR), with Mansa Konko as the administrative capital, and the North Bank Region – NBR with Kerewan as the administrative capital. The actual population of the districts where the Trans Gambia Highway are to be upgraded is estimated to be 68,808 with Jarra West accounting for (27,205) and Illiyasa /Upper Badibou 41,603 people respectively. The surveyed villages comprise a total of 25,043 household with Soma and Farafenni being the largest settlements. Both SareBiran /Misera and BereTo are small settlements and therefore have no social amenities. On the other hand, Soma and Farafenni as cosmopolitan towns have night club, sporting facilities (footballs and basketball pitches). There are large markets in these towns and a weekly conducted market (lumo) at Farafenni.

4.3.2 Economic environment
Population and economic activities in the PIZ is predominantly rural with high agricultural base with the production of groundnuts, rice, sorghum and vegetable but with more than 60% poverty rate. Agriculture is the primary source of revenue for inhabitants along the corridor. Farming is the main livelihood activity (37.9%) followed by trading (27.6%). Formal employment accounts for only 10.30% and mainly in Soma and SareBiran and 24.10% are active on other livelihood activities such as driving, carpentry, welding. There is a gendered division of labour in the agricultural sector. Men primarily grow sorghum, millet, maize and groundnuts while women grow rice and vegetables. Women mainly derive their income from small scale food production and trading. The upgrading and construction of the highway would open up the growth area and improve access to agricultural inputs and markets to other sub regions. This will boost agricultural production and ultimately beneficiaries’ incomes through trade and other services.

Respondents indicated that the average income during the dry season is greater than their rainy season income. Whereas mean income during dry season is D12, 200 (SareBiran), D49, 889, (Soma), D14, 840
(Bereto) and D53, 300 (Farafenni), rainy season incomes are lower by comparison across the four survey settlements. The average annual income is also higher in the towns of Farafenni and Soma than SareBiran and Bereto.

4.3.3 Land Ownership
The clans own the customary rights to the land within the project catchment. Individuals or families may acquire land usually for building or agriculture production. Regarding land ownership, all the settlements indicated that they have land for agricultural use.

4.3.4 Social Services and Infrastructure
Soma and Farafenni have several schools; ranging from nursery to tertiary skills /technical institutions. There are other government institution like fire services, banks and two major health facilities at both Farafenni and Soma. There are pipe-borne water taps at the two towns whiles local water facilities; few wells and hand-pumps still around at the smaller villages. Besides the availability of tap water, there are wells and hand-pumps at Soma. There is an electricity grid at Farafenni supplying Soma and other satellite settlements within the catchment area. However, Sare Biran and Bereto are without electricity, although structures (poles and wires) pass through their settlements.

4.3.5 Health
The main health problems reported by the surveyed communities were malaria and malnutrition, with great proportion of respondents been concern with malaria. The facts emerging from the data is that malaria continues to be a major public health concern despite significant declining trends over the years. Although, the proportion of respondents is lower for malnutrition, however malnutrition is not only a major public health problem but a development challenge in The Gambia because women and children are disproportionately affected.

In 2013 in Mansakonko, the proportion of HIV positive among women age 15-49 was 3.8%; while men were 2.8 %. In Farafenni, the proportion was 1.7% for women and 1.3% for men (DHS, 2013). According to 2014 HMIS (Health Management and Information) database a total of 163 cases of HIV positive – 73 males and 90 females were seen in Mansakonko, while in Farafenni Health region, 149 HIV positive were reported in 2014 of which 57 are men and 92 were women. This shows that men are higher of contracting HIV from women. Truck drivers and migrant workers, who are often men, therefore need protection to reduce spread of infection either to the communities or back to their families (WHO, 2012). In the 2013 DHS, self-reported prevalence of STIs was higher among women than among men. Overall, 8 percent of women and 3 percent of men reported having had an STI or experiencing STI symptoms in 2012. In Mansakonko health region, 2.2 percent of women and 3.4 percent of men reported having an STI. In Farafenni health region, 1.4 percent of women and 1.3 percent of men reported having an STI in the 12 months before the survey. The risk of HIV/AIDS and STI is high in both regions. Among all men age 15-49, the percentage who had sexual intercourse with more than one sexual partner in 2012 was above 10% for both Mansakonko and Farafenni Health regions.

Seventy-seven percent (77%) of the respondents perceived air pollution to be the main effects of the construction work, 43% mentioned waste management and 17 % stated injuries. On the other hand, 3% reported HIV/AIDS and TB as perceived effects of the road construction to the community. This means that already, there are awareness level and concerns of the community on the impact of the project on their health The two major public health facilities within close proximity to the trans-Gambia Corridor are AFPRC General Hospital and Soma Major Health Center. Ninety-eight (97%) of the respondents reported using these facilities for their routine health care needs.

5. PROJECT ALTERNATIVES

5.1 “NO ACTION” ALTERNATIVE
This alternative will lead to premature degradation of the approach roads since the amount of heavy traffic is expected to increase significantly after the TransGambia bridge opens. This will undermine the investment that was made on the road through EU financing by rehabilitating 22.5km of the 24km road section in 2012.

5.2 “STRENGTHENING OF EXISTING ROAD”
The current proposed project is meant to align with the existing road network will ensure that there is no change or alteration in terms creating a new road which shall create more resettlement impacts in the PIZ and other livelihood of the PAPs as well the environment. This alternative has provided the following advantages in social and environmental impacts which can be managed using measures stated in the project ESMP.

- Minimum resettlement required due to restricting road works activities within the existing RoW
- Less impacts on vegetation and fauna due to minimal clearance of vegetation
- Reduction in travel time and facilitation of free trade and movement leading to economic development nationally and locally.

Base on this, there is no project alternative under the current circumstances that is the best than the one of strengthening the current existiing road.

6. POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS
The project is anticipated to have both positive and negative impacts. However, the positive impacts are expected to outweigh the negative impacts. Below are the anticipated positive and negative impacts.

6.1 Impacts on biological and physical environment
6.1.1 Air Quality
Dust emanating from earthworks, reloading of paths and quarrying exploitation and vehicular movement will locally affect the air quality. This activities over the medium term will affect the ambient air quality within the surrounding locality. The extent of the emissions will essentially depend on the weather. The heavy construction machines using oil gas as fuel will cause discharge of combustion gas in the atmosphere ((COx, NOx, Sox etc.) rich in heavy metals and hydrocarbons that will also affect the air quality.

6.1.2 Land and Soils
The land and soils will be potentially polluted because of the opening of borrow pits, quarries, and sand pits (or exploitation of borrow pits and existing quarries). The soils can as well be contaminated by direct discharge of: liquid waste (sewage oil of machines, leakage and spills and waste water of site and life base, hydrocarbons from machines and other site operations; and solid waste namely numerous waste from garage, warehouses, hydrocarbons storage and lubricants storage. Besides, the traffic of machines and vehicles on site will cause a subsidence of soil as well as compaction particularly during the upgrading of highway on both PIZ. In places where the access roads are different from the current one, the repeated compaction due to use of heavy machinery and vehicles carrying construction materials. This could reduce land use potential for agricultural activities and/or modify the agricultural value of the land as it could enhance erosion and less water infiltration.

6.1.3 Surface water
The construction phase of the highway, creates potential pollution by solid and liquid waste as well as the toxic residues of the site (cement additives, fuel, burnt oil etc..) when left uncover particularly during rain. The transportation of liquid and solid waste such as site waste and waste oil through may modify the quality of the surface waters in case of spillage and could potentially be harmful to in terms of contamination in the swampy areas of the high way.
6.1.4 Underground waters
The pollution of existing watercourses could contaminate the underground waters through infiltration. This impact is slow compared to the quantity of surface waters liable to be polluted. To get water for construction, the companies will be able to have recourse through the borehole water.

6.1.5 Flora
The construction of the highway is perceived to cause minimal destruction of the flora in the PIZ as the highway shall follow the current alignments which do not go through any form of vegetation to be cleared. However, around the interconnection between the roads and the bridge, certain mangroves will be cleared. Considering the importance of the vegetation in the biodiversity preservation and the fight against desertification, the removal of the vegetation whatever the number, has a high degree of importance and should be compensated adequately at some point within the intervention site by the project.

6.1.6 Fauna
The noise that would be created by the operation of construction machines could disturb the tranquillity of fauna in general and birds in particular around the mangroves area. The birds and terrestrial animals around the sites will be disturbed during the construction of the highway and the creation of diversions for the paths though this shall be of medium term:

6.1.7 Landscape
The impact of works will be visibly over the medium term distorts the existing landscape. It concerns site facilities; temporary work and bare appearance of borrow areas.

6.2 Impacts of the Project on human environment
6.2.1 Public Health and Safety
The dust, the fumes and the odour that would be generated by the sites cleaning of the area, construction work, and odour of fuel may cause diverse nuisances and breathe related implications among workers and paths residents. The risk of infections of local residents and workers by HIV/AIDS and other STIs, are to be taken into account in the workplaces hence the project will attract different work force with different background which shall serve as a recipe for sexual cohesion thus the spread of the diseases.

The machine and the plants noise will disturb the usual tranquillity of the environment and will be a source of nuisance among the residents along the trans-Gambia highway during borrow areas and quarries transportation. Continuous traffic of refuelling trucks and construction machines in and through settlements can cause accidents and therefore constitutes a risk for the safety of persons and their properties (children, animals, and physical assets).

6.2.2 Creation of Employment Opportunities
The construction activities will generate jobs, by hiring local labour. The economic benefits will be felt in the local households who are near the future infrastructures (bridge and highway) and these benefits are predicted to be even sub-regional

6.2.3 Road traffic
The traffic will be temporarily disturbed by the performance of upgrading process of the highway and border road link over the construction phase. This inconvenience however, will be addressed through creation of good bypass roads to reduce traffic congestion during the construction period.

6.2.4 Agriculture and Livestock
The risks are not important because of the low importance and the size of the concerned areas with such situation along the trans-Gambia Highway.
6.2.5 Trade and transport

Trade activities especially restoration and sale of foods and basic food stuffs will be amplified by the presence of the companies staff. The construction works will affect people movement on the paths whose initial bench marks has been removed during the upgrading process.

6.2.6 Impacts on Social Infrastructures and cultural heritage

The presence of workers coming from diverse areas may involve a loss of costumes and traditional values. In the urban conglomerations such as Soma and Farafenni the site activities will cause hindrances to the movements (vehicles, pedestrians) and temporary nuisances for users of socio-economic infrastructures (schools, markets, places of worship) Some excavation works of access roads could as well affect underground infrastructure networks such as water installation and may be telephone network and other service networks.

6.2.7 Climate Change Impacts

According to findings of the FGDs, floods, erosion and inconvenience in accessing homes may be encountered if the road is raised to certain height above household settlements.

6.2.8 Petty trading activities

During the phase of work, the restaurant owners and the traders will see increase their incomes significantly as workers will serve as potential buyers and during operation, the movement of goods and services shall potential increase their economic activities within the PIZ. However, some of them may experience economic displacement impacts.

7. ENHANCEMENT/MITIGATION MEASURES AND COMPLEMENTARY INITIATIVES

This Chapter contains a description of mitigation measures for adverse impacts, measures for enhancing the beneficial effects, and the cost of mitigation against the impacts. MPW will implement the detailed Environmental and Social Management Plan (ESMP), which has been developed for the project. The ESMP will ensure compliance with applicable environmental standards during the construction of the road. The Contractor will be required to develop a Construction ESMP (CESMP) to ensure compliance with the AfDB requirement standards and applicable national regulations before construction works begin.

Table 1: Enhancement and Mitigation Measures

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<th>Positive Impact</th>
<th>Enhancement Measures</th>
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<tr>
<td>Impacts on different gender</td>
<td>- Put in place gender differentiated measures such as: encourage women to provide goods services as part of their business opportunities</td>
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<td>groups</td>
<td>- Ensure that there is gender disaggregated data during monitoring to ensure that benefits also accrue to women and the youth e.g. employment</td>
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<td>- Gender awareness and sensitisation especially gender based violence and HIV/AIDS component to target women as well</td>
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<td>Employment Opportunities</td>
<td>- Ensure that measures are put in place for local employment especially for unskilled workers</td>
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<tr>
<th>Negative Impact</th>
<th>Mitigation Measures</th>
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<td>Habitat Fauna</td>
<td>- The project RoW is defined along the current existing road since it is strengthening works, and none of the flora and fauna would be adversely affected.</td>
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<td>Destruction/</td>
<td>- DOF Authorisation on clearance of any vegetation. There will be replanting of trees and rehabilitation of construction and works sites</td>
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<td>fragmentation</td>
<td>- Create awareness on the workforce on respect of environment: all measures of the ESIA are applicable</td>
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<td>- Ban to light a fire. The guards shall not under any circumstances violate this provision. Ensure that cigarette butts are extinguished and buried in the sand.</td>
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<tr>
<td>Negative Impact</td>
<td>Mitigation Measures</td>
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| Disruptions to road usage | - Prohibited to dispose waste in the forest  
- Green land: use to adjust slope and disturbed areas |
| Noise and Vibration | - Provision of PPEs such as noise mufflers and limiting hours of exposure  
- Contractor will be prevented from working in settlement areas after the hours of darkness.  
- Maintenance of Vehicles and equipment |
| Air Quality | - Enforcing that all vehicles are maintained in accordance with the manufacturer’s specifications, with particular regard to control of particulate emissions.  
- Dust-producing materials must be covered by tarpaulins when being transported by truck and limit speed in dusty roads  
- Watering of dust roads to reduce dust emissions  
- Creating awareness to cover food and windows and doors  
- Provision of PPEs e.g. masks and enforcement measures in place |
| Public Health and Safety | - Provision of Gender based violence awareness and HIV/AIDS education and awareness campaigns/posters for contractor’s workers and local communities including provision of preventive measures such as condoms  
- Speed limits will be enforced  
- Road Safety community outreach programs.  
- Siting of workers camps and storage facilities will be properly planned so as not to affect the surrounding communities or interfere with their daily activities negatively  
- Adequate and proper standard sanitary facilities will be provided at each project camp site. Septic tank – emptying regularly and discharge in authorized areas. |
| Occupational Health and Safety | - Implement a Health Safety and Environmental Management Plan works and have an HSE Officer in place before construction  
- Organisation of induction programmes on environmental, health and safety, and security issues for all construction workers.  
- The contractor shall provide adequate office accommodation for his own staff and those of the Engineer’s representative, workshops for his own use and living accommodation for his workers.  
- Provision of adequate and appropriate standard workers’ camp Facilities such as sanitary facilities, health, potable water, electricity, welfare and transport, all to be and maintained to required standards  
- Camps shall be served by proper waste disposal facilities for domestic solid waste, septic tanks for foul sewage, surface water drains properly constructed to outfall or streams.  
- Put in place an Emergency Risk Management Plan  
- Mobile toilet facilities will be provided for construction workers in order to ensure that decent and comfortable places of convenience are provided for the workers and to prevent pollution  
- A Clinic and First aid facilities will be made available for the use of workers.  
- Contractors will have an HR Policy that is in line with applicable national and AfDB requirement standards |
| Waste Generation | - Development of a Waste Management Plan by the Contractors  
- Waste from construction materials should be well managed by a well designed management system and waste segregation without creating unnecessary hazards to people and the environment.  
- Upon decommissioning the contractor shall remove all structures, above and below ground, disinfect all septic tanks, and latrine soil pits, dispose of all solid waste in an acceptable manner, disconnect all services and reinstate the area with topsoil and planting to the satisfaction of the engineer.  
- the project personnel will be trained on proper collection and disposal methods of different types of solid wastes including hazardous waste handling procedures  
- Construction workers shall be instructed in proper construction waste and domestic waste storage and handling procedures.  
- Illegal dumping, either at the construction camp, along public roads or in the surrounding areas, or into rivers will not be allowed.  
- Household waste: storage in bins and transportation to an authorized waste area Contractor.  
- Construction waste: salvage and valorisation of concrete slaps, pieces of steel, woods.  
- Hazardous waste: storage in watertight containers |
| Land and Soil degradation | - The Contractor would be directed to provide an Erosion Prevention and Management Plan to prevent soil erosion and sedimentation that will cause siltation of watercourses prior to the start of the relevant construction,  
- Salvage of bitumen waste - removal of contaminated soil and backfilling until reaching previous level  
- Salvage of concrete laitance – removal of polluted soil – send to the authorized disposal area Contractor,  
- The Contractor would be expected to exercise care and due diligence during site preparation to avoid indiscriminate clearing of vegetation.  
- Any cleared areas will be rehabilitated through compaction and revegetation after construction works  
- Any of these sites that would be established within the project vicinity will be operated and closed within the context of contract agreement established prior to construction |
| Degradation and Pollution of Water Resources | - For machinery and other vehicular maintenance activities, spill oil containment bonds will be put in place to avoid spillage in the project surroundings. |
Negative Impact | Mitigation Measures
--- | ---
- The wastewater and runoff from asphalt and concrete batching plants (mobile and stationary plants) will be clarified by settlement ponds and the alkali level of waste water and run off will be neutralised to prevent water pollution<br>- Waste generated from concreting/asphalting activities will not be allowed to flow into drainage ways, and receiving waters

Resettlement Impacts | - RAP Implementation<br>- Compensation and relocation of PAPs in compliance with applicable requirement standards before works start<br>- Implementation of a GRM

Impacts on Cultural Heritage | - Avoidance of impacts on sacred sites wherever possible in consultation with affected communities<br>- Use of Chance find procedures for any chance finds during construction

Impacts on Socio-cultural environment | - Implementation of a SEP and GRM during the life cycle of the project<br>- Contractors to have a Code of Conduct for its with clauses avoiding social conflicts

### 8. MONITORING PROGRAM

The environmental monitoring will be carried out through observations and evaluation of activities throughout the construction phase to determine the most pre-occupying real impacts on site compared to predictions of impacts in order to provide, if necessary the mitigations measures to be recommended to address the situation. It is necessary to monitor the evolution of the characteristics of some sensitive impacts receivers as indicated below.

#### 8.1 Monitoring Plan

**Table 2: Monitoring Plan**

<table>
<thead>
<tr>
<th>No.</th>
<th>Component</th>
<th>Parameters to be monitored</th>
<th>Frequency/Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Air quality, GHG and noise</td>
<td>• Dust emissions&lt;br&gt;• Complaints from the general public</td>
<td>Daily/Weekly Contractors/Project engineers, Monthly By NRA/NEA for external</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Daily self-checks by contractors; Spot checks/audits by project engineers/NRA During construction and operation phase Externally NEA and DWR/DOH</td>
</tr>
<tr>
<td>2</td>
<td>Water resources</td>
<td>• Concentration of waters by pollutants&lt;br&gt;• Level of siltation of watercourses&lt;br&gt;• Stagnation of water not desired therefore proper drainage system</td>
<td>Daily Self Checks During and after work by Contractors and Monthly By NRA Throughout the project implementation Externally by NEA</td>
</tr>
<tr>
<td>3</td>
<td>Land and Soils</td>
<td>• Appearance of erosion signs in slick, and through gullies.&lt;br&gt;• Regular monitoring of liquid discharge to avoid soil pollution – Sensitization of employees</td>
<td>Weekly Checks by Project Engineers/Contractors/ Throughout the project implementation Externally by NEA</td>
</tr>
<tr>
<td>4</td>
<td>Waste Generation &amp; Disposal</td>
<td>• Waste management plans&lt;br&gt;• Number of Site Waste Bins&lt;br&gt;• Final Disposal Records&lt;br&gt;• Segregation of waste</td>
<td>Weekly Checks by Project Engineers/Contractors/ Throughout the project implementation Externally by NEA</td>
</tr>
<tr>
<td>5</td>
<td>Public and Occupational health and safety hazards</td>
<td>• EHSP&lt;br&gt;• Health and Safety/Pesticide Incidents Register</td>
<td>Daily self-checks and Monthly verifications by project engineers/NRA</td>
</tr>
<tr>
<td>No.</td>
<td>Component</td>
<td>Parameters to be monitored</td>
<td>Frequency/Responsibility</td>
</tr>
<tr>
<td>-----</td>
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<td>-----------------------------</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>• Occurrence and prevalence rate of traffic accidents</td>
<td>During construction and operation Externally by NEA/</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Construction site management plan with adequate sanitary facilities</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>• Danger warning signs</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• EHS training records</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Evolution or prevalence rate of serious breathing infections.</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>• Use of PPE</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Community Sensitisation records on construction related risks</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Trucks covered with tarpaulin – watering quarry, sensitization of machine operators –</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>• Regular watering – employees sensitization and wearing of dust masks</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Areas cleared for construction and operation activities restricted to RoW</td>
<td>Regular checks by contractor/Project Engineer/NRA DOF/DPWM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Administrative formalities Cutting the minimum possible of trees for exploitation</td>
<td>During Construction and operation Externally by NEA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Rehabilitation of the borrow site</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Change of the number of deforested areas annually</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Success rate of reforestation programmes and Rehabilitation records</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Poaching incidents</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Biodiversity</td>
<td>• Evolution or prevalence rate of STI and HIV/AIDS</td>
<td>Preconstruction/Construction Contractors/NRA/ DOH Externally by EPA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Awareness campaigns and training records</td>
<td></td>
</tr>
<tr>
<td></td>
<td>HIV/AIDS Programs</td>
<td>• Grievances and complaints recorded</td>
<td>Throughout the project cycle By Contractor/Project Site Engineer/NRA Externally by NEA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Number of social conflicts recorded</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Social Conflicts</td>
<td>• Land Acquisition Plan and Records</td>
<td>Pre-construction/ construction phase NRA Externally NEA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Compensation and Relocation Assistance records</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Livelihoods Restoration Plan</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Complaints recorded and addressed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Loss of land</td>
<td>• Number of women employed within project activities</td>
<td>Construction and operation phases Contractors/MPW</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Number of women trading at constructed markets</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Number of women benefiting from business skills training</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gender</td>
<td>• Chance Find procedures implementation records</td>
<td>Daily self-checks and verification by contractors/MPW Preconstruction/construction and post construction</td>
</tr>
<tr>
<td></td>
<td>Social/Cultural</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8.2 Monitoring and Reporting
The monitoring program of ESIA implementation, this exercise is essential in ensuring that the project is environmentally sound, by checking that the recommended mitigation measures have been carried out effectively in a timely manner. Monitoring also helps in evaluating whether the measures recommended are adequate in preventing, reducing or compensating the identified negative impacts. Efficiency of those responsible for the ESIA implementation and the proposed structures should also be reviewed and the necessary changes made accordingly.

8.2.1 Contractors
The procedures for monitoring implementation and outcomes of the ESMP/HSE mitigation measures, will be based on environmental and social monitoring as defined by the Contractor in their CESMP and specific sub-management plans. The monitoring frequencies, parameters, methodology and duration are determined based upon site activities requiring monitoring, which is assessed on a case by case basis dependent upon construction activity type and location. Contractor is responsible for reporting monitoring results to NRA on a monthly basis.

8.2.2 NRA
The Project Coordinator (NRA), Contractor, MoWTI and the NEA with other key stakeholder’s institutions have monitoring responsibilities. NEA takes the lead in overall monitoring role of the ESSIA/ESMP implementation. Notwithstanding, the beneficiaries within PIZ and general public also have monitoring roles by reporting issues to the NEA for addressing. Sensitisation on the ESMP before the Project commencement shall ensure consistency in understanding roles and responsibilities of each stakeholder. It is the responsibility of the Project Coordinator (NRA) to ensure that all involved stakeholders are facilitated to monitor the ESIA/ ESMP implementation based on the Plan.

8.2.3 Supervising Consultants
The Supervising Consultants will have an E & S safeguard specialist that will monitor and report on E & S performance to NRA on monthly basis summarising all environmental, social health and safety initiatives implemented in relation to the execution of the works during the reporting period.

8.3 Reporting
Contractor is responsible for reporting monitoring results to NRA on a monthly basis. NRA will have to ensure that they comply with required reporting to NEA and AfDB based on the agreed project reporting arrangements. Effective communication within NEA, and between and amongst NEA and other stakeholders is essential. Weekly reporting of monitoring is recommended from NEA at regional level. This will be followed by quarterly monitoring with all stakeholder institutions to assess compliance with set provision of the ESIA/ESMP document by the contractor. The evaluated reports shall be used to facilitate immediate improvement, where necessary, considering the timeline of the Project cycle. The Project monitoring team shall continuously ensure that reports from the ESMP monitoring are taken into account. AfDB will review project progress reports that will also include ESMP implementation and monitoring including corrective and remedial actions for non-compliance.

8.4 Evaluation and Audit
Environmental auditing is a systemic review of the activities against the ESIA. Part VI of the EIA Regulation, 2014, makes provisions for self-audit and audit by the NEA to ensure the ESIA is implemented as planned, and identify potential impacts that have arisen due to any change in activity.

9. PUBLIC CONSULTATION AND DISCLOSURE

9.1 Public Consultation
Community participation and consultation were undertaken among people living along the proposed road corridor and area of influence as an integral part of the Project preparation and appraisal as well as ESIA/ESMP development studies. The FGD meetings were carried out with stakeholders in the following locations: Sare Biram/Misera-LRR; Soma Town; Bereto Soma Town NBR; Farafenni –NBR; and 71 people attended who include men women and the youth. These consultations enabled interested and affected parties to contribute their concerns (views, and opinions on the proposed development) which might have been overlooked during the scoping exercise. A synopsis of the views of the project
affected people as well as representatives of counties through which the project traverses were interviewed in predicting impacts and the development of the ESMP and their concerns have been reflected in the ESMP and will have to be incorporated in the final road designs and implementation of the RAP. The following were the main issues raised during the consultations: (i) public health and safety concerns especially air pollution, waste management, accidents/injuries and spread of HIV/AIDS and TB (ii) flooding, erosion and inconvenience in accessing their homes (iii) shops and related businesses close to roadsides be relocated and the owners be compensated (iii) appropriate design of the road to widen it and have vehicle parking spaces. However, the following are the key areas of concerns raised during the public consultations: Overall, there is broad community support for the project as long as the project benefits enhancement and mitigation measures for negative impacts are implemented.

The Project ESIA and RAP will be disclosed in accordance with AfDB requirement standards. The ESIA/RAP are expected to be disclosed nationally in March 2019. The ESIA summaries will be disclosed on AfDB Website before taking the project to board.

9.2 Stakeholder Engagement Plan
To ensure continued participation of stakeholders, the NRA and the Contractor, will implement a Stakeholder Engagement Plan with a GRM throughout the life of the project from just before pre-construction. The Contractor and NRA will conduct on-going engagement and reporting with the communities guided by this Stakeholder Engagement Plan (SEP) that will support the long term viability of the project by establishing and maintaining good relations with the communities and using feedback to inform the decision making process. The SEP is a living document that should be refined and modified throughout the life of the project by the NRA and the Contractor.

The Contractor shall have a Community Liaison Officer, who working in collaboration with the NRA Environmental Specialist, will take responsibility of the stakeholder engagement during construction phase. This team should ensure there is availability of information and materials to community members on the project and allow the public to meet and communicate personally with company representatives, to obtain information on ongoing project activities, ask questions on topics of interest as well as to lodge complaints or concerns.

9.3 Grievance Redress Mechanism

A Grievance Redress Mechanism will be prepared for the project to address the any grievances or complaints throughout the project implementation. The MPW/NRA in consultation with the people in the project impact area will come up with a GRM and GRCs will be formed along the road corridor in order to ensure that project affected persons, local communities and other stakeholders can raise their grievances about actual or perceived impacts in order to mitigate environmental and social risks. In order to ensure that such grievances are addressed, the NRA and the Contractor in consultation with key stakeholders in the communities and local authorities shall establish a Grievance Redress Committee (GRC) that will be inclusive of all key stakeholders including disadvantaged and vulnerable groups.

10. ESMP IMPLEMENTATION

10.1 ESMP Implementation Plan

The ESMP has been developed with project knowledge and information available to date. Some of the Project’s final details, such as proposed locations of construction camps, actual locations of borrow areas to be used by the Contractor, disposal areas for construction debris among other issues, are currently unknown. As project commencement and scheduling plans are developed and changed, components of the ESMP will require amending. This is therefore be a working document, which can be updated whenever new information is received or site conditions change.
10.2 Contractor Management

The range of contractors’ environmental and social management responsibilities include managing their direct, indirect and cumulative impacts of their activities from construction as well as impacts of their workforce and compliance with health, safety and labour requirements. The contractors in this project will be required to develop before construction works a CESMP that includes a HSE plan and specific sub-management plans stipulated in the ESMP that will be implemented through the construction and decommissioning phases of the project. This will ensure compliance with policies, regulations and standards through a self-verification programme. The NRA and the Supervising Consultants through their Environmental and Social Safeguards specialists shall have the responsibility to ensure that the Contractor complies with all environmental and social safeguard requirements. They shall ensure that monitoring and reporting arrangements for the contractors as stipulated in the ESMP are being implemented as part of compliance with the applicable national and AfDB ISS requirement standards. The NEA will externally monitor contractors’ compliance with the applicable requirement standards stipulated in the permit.

10.3 ESMP Implementation Schedule

Table 3: ESMP Implementation Schedule

<table>
<thead>
<tr>
<th>No.</th>
<th>Activity</th>
<th>Responsibility</th>
<th>Pre-Construction (Month)</th>
<th>Construction (Month)</th>
<th>Operation &amp; Maintenance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental &amp; Social Management</td>
<td>Inclusion of Environmental &amp; Social Requirements in Bid Documents</td>
<td>NRA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Appointing Supervising Consultants</td>
<td>NRA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Appointing of Contractor’s E &amp; S Key Staff for CESMP Implementation</td>
<td>Contractor &amp; Submission of CESMP</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Review and Approval of Contractor’s CESMP, and its sub-management plans</td>
<td>NRA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Formation and orientation of GRM institutions including GRCs along the road corridor</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Implementation of SEP/GRM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Environmental and Social Training</td>
<td>Environmental and Social Consultant/EPA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Implementation of Environmental and Social Mitigation Measures</td>
<td>NRA/Contractor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Supervising ESMP Implementation</td>
<td>NRA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Monitoring &amp; Reporting on ESMP Implementation</td>
<td>NRA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Environmental and Social Auditing</td>
<td>Consultant</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Implementation of Operation and Maintenance ESMP</td>
<td>NRA</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10.4 ESMP Implementation Cost Estimates
To ensure that the mitigation measures in the ESMP are fully implemented, training and capacity building of personnel, and sensitisation on the issues are essential in addition to constant monitoring. Total cost of the ESIA implementation is indicated below.

Table 4: Estimated ESMP Implementation Costs

<table>
<thead>
<tr>
<th>ITEM</th>
<th>Budget (USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESMP mitigation Measures</td>
<td>66,000</td>
</tr>
<tr>
<td>Quarterly Monitoring of ESMP Implementation</td>
<td>40,000</td>
</tr>
<tr>
<td>Environmental Auditing</td>
<td>10,000</td>
</tr>
<tr>
<td>Capacity Building</td>
<td>12,000</td>
</tr>
<tr>
<td><strong>TOTAL ESMP IMPLEMENTATION BUDGET</strong></td>
<td><strong>128,000</strong></td>
</tr>
</tbody>
</table>
11. INSTITUTIONAL CAPACITY AND STRENGTHENING PLAN

The successful implementation of this ESMP depends on the commitment and capacity of various institutions and stakeholders to implement the ESMP effectively. Thus, the arrangement as well as the roles and responsibilities of the institutions and persons that will be involved in the implementation monitoring and review of the ESMP are as follows:

Table 5: Institutional Responsibilities

<table>
<thead>
<tr>
<th>Institution</th>
<th>Roles and Responsibilities</th>
</tr>
</thead>
</table>
| 1. NEA                  | • Environmental regulatory agency overseeing compliance with national environmental regulations  
                         | • Validation and approval of ESIA/ESMPs documentation                                     
                         | • Monitoring and enforcement of ESMP implementation                                       |
| 2. NRA                  | • Overseeing the overall implementation of the project and the ESMP and RAP                 
                         | • Monitoring implementation of the ESMP and RAP and preparation of progress reports        
                         | • Liaise closely with NEA in ensuring compliance of the project and the contractors with applicable national and lender’s requirements and enforce compliance and implementation of corrective and remedial actions  
                         | • Undertake safeguards due diligence supervision on site through their Environmental Expert  
                         | • Oversee Stakeholder Engagement Plan and GRM implementation                               
                         | • Responsible for the review of ESMP during project implementation                        |
| 3. Contractor           | • Compliance to BOQ specification in procurement of material and construction              
                         | • Develop and implement a Construction ESMP (CESMP) and its sub-management plans through HSE Officer  
                         | • Carry out site monitoring activities based on the monitoring plan and report on status and compliance  
                         | • Implement corrective and remedial measures                                               
                         | • Carry out Stakeholder engagements and engage with the communities sensitising them on the project activities during construction |
| 4. AfDB                 | • Overall supervision and provision of technical support and guidance.                    
                         | • Recommend additional measures for strengthening the management framework and implementation performance;  
                         | • Supervising missions of ESMP and RAP Implementation and review of Project Progress reports |
| 5. Local Community      | • monitor implementation of the ESMP                                                     
                         | • Assist and Liaise with other stakeholders to ensure proper siting and provision of approval for such sites |
| 6. Other government Institutions | • Department Of Forestry monitor implementation of ESMP in relation to vegetation clearance/reeforestation programmes  
                         | • Department of Water Resources monitoring water resources pollution                      
                         | • Local Government Authorities                                                            
                         | • Department of Parks and Wildlife Management – monitoring wildlife impacts such as poaching |
11.2 **Capacity Building and Institutional Strengthening**
Training is essential for ensuring that the ESMP provisions are implemented efficiently and effectively. The trainings will be done for the main implementers of the ESMP so that they are aware of the mitigation measures in the ESMP and the monitoring arrangements and responsibilities. The costs for capacity building have been incorporated in the ESMP implementation costs.
12.0 CONCLUSIONS AND RECOMMENDATIONS

Conclusion: The result from this environmental and socio-economic studies indicates that project activities in terms of upgrading or strengthening of trans Gambia Hay way sites in Jarra West District (Soma and the environs) in LRR and Upper Baddibou District (Farafenni and the environs) in NBR may not have major negative impacts on the environment and local communities during implementation.

However, strengthening of the road has potential impacts on the environment and social wellbeing of workers and local communities particular on air quality, some business activities along the highway will be temporally affected, mangrove, potential flooding, respiratory related illness, noise creation, enhancing of erosion and possible emergency of STIs among other over medium term. The activities of the project shall have insignificant destruction of vegetative cover in intervention areas. The overall negative environmental and social impacts that are anticipated during project implementation could be minimized and managed if the mitigation measures proposed in the ESMP are duly implemented during project implementation and decommissioning. In addition, the contractors should consider local knowledge of the topography so that culvert can be located and identified at the correct places thus incorporate these in their road designs. This will reduce the level flooding that may arise as a result of the construction of the road during implementation and operation.

Recommendations: The following recommendations are made:

- The road project should ensure that they comply with the applicable requirement standards, national, AfDB requirements and International Standards.
- The ESMP/CESMP implementation and monitoring program should be adhered to by the Contractors, under the supervision of the Supervising Engineers and NRA Environmental and Social Experts throughout the Project Cycle.
- NRA should ensure collaboration and liaise with the other institutions/ enforcement agencies and all relevant stakeholders to ensure effective implementation of the ESMP and RAP both at national and local levels.

13.0 REFERENCE AND CONTACTS

African Development Bank’s Integrated Safeguards System 2013 adopted in 2014
African Development Bank’s Environmental and Social Procedures (ESAP)

For more information, please contact:

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