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## Social Impact Assessment (SIA) Mitigation Plan

Every project implemented may have vast impacts on the area of establishment, and this varies in regards to the type of activity conducted, the project duration, number of people affected, and the surrounding environment. The Gold Mining Project in Ghana is a long term activity whose life cycle may take 15 to 23 years. Being established in the Northwest of the country at Wa Municipal District, it will have great social, economic, and environmental impacts to the 12000 residents residing in the area. Current activities such as crop farming and pastoralism may be deterred due to the required piece of land for the project. This report will review the undertaken social impact assessment (SIA) that will aid in the identification of the benefits and impacts arising from the project. The SIA will include: description of the impact management activities, type of impact, their probability, and consequences, identified performance indicators, mitigation strategies and the responsible parties to implement them, as well as the timeframe for the proposed strategies. These will be highlighted in different phases of the project.

### Construction Phase

The project is to be initiated in the second and third quarter of 2016. The duration of the construction will be approximately 15 months. There are various potential social impacts related to this phase and are described below:

#### Physical Displacement

This is considered a negative impact of the project with high probability of occurrence. Baseline data collected in early 2014 indicates that a total of 1500 people will be physically displaced in six different villages within the district. Additionally, community structures such as religious buildings (mosques), schools, hospitals, cemetery, and 3 water pumps will also be displaced. This number might increase due to noted unfinished structures and construction activities in the same area. The Eathcons Inc. from Liberia will be expected to develop a comprehensive Resettlement Action Plan for the displaced individuals. The plan will consider the social networks, mining-based livelihoods, and different community structures. A preferred mitigation measure should be development of alternative livelihood in order to maximize the possibility of employment involvement. There will be development of skills and training programs at early stages of the project to enable the community members to benefit from the project. This impact will affect the community members as well as private developers in the area. The persons responsible will include: Community Liaison Officer, Community Development officer, and

NLGM. The key performance indicators for the implemented strategies should include an implemented Resettlement Action Plan and the Community Liaison Officer appointed.

### Economic Displacement

This is also a negative impact with high probability. During the commencement of the project, the current land users engaged in crop farming will be displaced; this will affect the food and cash crops. This might further result to the loss of natural resource availability which will directly affect the traditional household structures and subsistence livelihoods. Since the project will rely on natural resources such as water and land, the quality and quantity of water resources will be affected. This will extend to impacting fish that forms the large portion of the people's diet. The disturbances will also impact hunting activities which act as source of income and household sustenance. One of the strategies to prevent damage caused by this impact is to develop alternative livelihood strategies and maximize the possibility of involving the local community in the employment opportunities. There should also be skill training programs to advance the experience of the local people in order to participate in the project activities. There should also be the creation of Livelihood Restoration Plan and Community Development Plan that the households are not affected significantly. The persons responsible to implement the strategies should include the Community Development Officer and the Liaison Committee. Key indicators of performance will include monitoring systems that help review the activities present to improve quality of life and appointed Community Liaison Officer. The timeframe should be prior to the construction activities and throughout the life cycle of the project.

### Creation of Employment Opportunities

This is a positive impact with medium probability of significant impact. It is expected that the project will be available for both unskilled and semi-skilled workers who will be derived from the community. Available skilled workers will be brought elsewhere within Ghana or the neighboring countries. There will be early training and skill development programs for the local people to get training before the project commences. Job opportunities will benefit the households, especially those displaced since they will have source of income to afford their livelihoods. The key mitigation measure is to establish a local labor office at the mining company to identify local labor pool. There should also be an implementation of a skills and training programs to support the local people to obtain job opportunities. The responsible person for this mitigation will be the mine manager. Key performance indicators are skill development programs and list of local population employed in the mine.

### Affected Water Quantity and Quality

Where the project is to be constructed, there are river channels; this will mean that there will be diversion and increased water usage during the construction phase. The utilization will affect the water supply to the villages living downstream, especially those in Wa who rely on the natural water for domestic and agricultural activities. The quality of the surrounding waters may also be affected by pollutants from the construction site and waste dump; this can pose a health risk among the population. The diversion of the water sources will need the construction of a dam near the mining area; this might increase water levels in the upstream, thus, contributing to flooding and prevented access during rainy seasons. To prevent water quality reduction, the project must adopt a Water Management Plan. There will be installation of drainage that divert waste from clean water, maximal recycling and reuse of all the project water, and discharge of residual effluents in consideration with the Ghanaian water quality standards to avoid pollution.

### Air and Dust Pollution

The project will result to air emission such as greenhouse gases and dust through the use of fuel, electricity, blasting, and mining equipment. Dust will especially be generated during: clearing of vegetation, excavation and blasting of gold ore, haulage of rocks, wind erosion as a result of bare surfaces, and rock crushing. Gases will also be emitted from blasting and truck engines; this might affect the health of the local people and workers. In order to control this potential impact, there is a need to use water sprays to reduce dust and avoid certain operations during hot weather. The gold company must ensure that the technology used avoids high pressure and temperatures, thus, reducing gas emissions. Sensitive receptors will also be placed around the dwellings and soil resources in order to monitor the potential noise and air pollution.

### Population Influx

During the construction phase, there will be an inclusion of external workforce who will be employed in various positions of the project that cannot be filled by the locals. The existing work opportunities may also result to increased population due to the search for jobs that result to population expansion. This may create social tension and disruptions among the construction teams and pressure will be put on the existing utilities that operate in low capacity. The increased population may also result to rising crime cases and social exploitation; employees from other areas may face integration challenges. There may also be exploitative sexual behavior that creates a risk of sexually transmitted diseases such as HIV/AIDS due to the lack of medical facilities and knowledge. Key mitigation strategies for the increased population include: partnering with the municipality to offer utility and protective services; developing company induction programs and code of conduct among workers to enhance community safety; include social initiatives within the Community Development plan to promote cohesion; to establish local hiring priority policies to consider the affected communities of Wa. The responsible person for the mitigations will be the Community Development Officer throughout all the phases. The

key performance indicators considered will be monitoring of the health data and inclusion of health target in the Development Plans.

#### Increased Traffic and Safety hazards

This is a negative impact that has medium probability of impact significance. The construction activities may lead to increase in vehicular traffic. The routes existing are narrow, permanent roads; this condition will increase traffic while reducing easy access to different places within the community and increase in dust. The conducted assessment showed that the residents are already complaining of impassibility of the roads during wet seasons in July and September. The increased number of vehicles in the area will, therefore, worsen the condition. One key measure that must be considered in construction of roads; within the project site, there will be a 900m long internal road that exit to the crusher area. This will be meant for the haulage vehicles carrying heavy loads. Other measures to prevent traffic include: training drivers, creating appropriate signage and safe site entrance points, and maintaining vehicles in safe conditions. The responsible persons for the mitigation will be the Health and Safety Officer as well as the Mine Manager. The performance indicators for the strategies will include a developed safety plan and a monthly report and health and safety assessment.

#### Operational Phase

The project is estimated to have an operation life of approximately 23 years. It is likely to be initiated in the first quarter of 2018. Considering a socio-economic perspective, the impact of the project includes:

#### Creation of Employment Opportunities

This is a positive impact of the project with a medium significance probability. During the operation of the project, there will be approximately 500 people employed in the mining company. With quality training during the construction phase, the greater number of the workforce will include the local communities. Increased employment is linked to proper housing and livelihoods as well as rise of small business in the area. Similar mitigation measures in the construction phase will be utilized. One of the strategies is to fund small business to enhance development of the local communities. There should also be training programs to explore business opportunities in the area. These should be done during the construction and operation phase of the project and should be overseen by the Community Development Officer. The performance indicator should include a development plan and increased businesses in the area.

#### Noise and Dust Pollution

It is likely that during this phase, there will be an increase in the noise level and reduction in the quality of air due to dust. This might cause various health impacts among the local communities and workers. One recommendation is that the workers should be properly equipped with Personal Protective Equipment. To control noise and smoke levels against the community, proposed measures in the construction phase will be considered.

### Health and Safety Impacts

The population will be affected throughout the operation phase due to increased traffic, dust and water pollution, gas emissions, and congestion. Blasting and traffic in pedestrian areas, for instance, may cause physical injuries. Lack of healthcare facilities may also increase the risks of STDs and other diseases.

### Improved Services and Potential Community Development

This is a positive impact of the project with medium significant probability. The project will create diverse developments in the community. It is expected that water pumps will be constructed in the local villages and financial assistance will be provided to the local schools and clinics. There may be opportunity to improve the existing infrastructure especially the support of education, basic services, and health care. A key strategy to maintain the services is developing a Community Development Plan aimed at long term sustainable development. This should be overseen by the Community Development Officer through the Construction and Operation Phase. The key performance indicator is the Development Plan.

### Decommissioning and Closure Phase

The closure phase will likely take place after 23 years of operation. Some of the potential impacts include:

- There will be an increase in the employment opportunities before a decrease which is considered a high significance probability. With the mine closure, most of the people will lose their jobs. Similarly, business enterprises that were dependent on them mining operations and the previously increased population will also be affected. A key mitigation measure is to develop a program of retrenchment and retraining as well as provision of full retrenchment package to the employees. This should be done during the operations phase through the Human Resource and the Manager.
- There will also be noise and dust pollution resulting from the decommissioning activities such as demolishing of buildings and surface installation of the open spaces. This will be controlled by the methods proposed in the construction phase.

- There will be a shift in the economic benefits of the area, from mining to agriculture. With the demolition of the mine, and rehabilitating it through soil filling and putting up vegetative cover, the residents will be able to use the land for farming. A mitigation measure will be to develop a Community Development Plan that include alternative skill development programs for different livelihood strategies. This should be implemented by the Community Development Officer during the operation phase. Key performance indicators include monitoring of the progress and existing development plan.

## Conclusion

The proposed gold mine project will be the first industrial development in Wa. There are various economic activities that will result from the project; this will assist with the development challenges the local community have faced over the years. There will be skill development programs and employment provision to the locals. This will result to disposable income and increased level of health, nutrition, education, and service provision. The compilation of new Community Development Plans will also aid the villages in planning and managing for sustainable development. The most significant negative impact of the project will be the displacement of over 1500 households; there is, however, a Resettlement Action Plan developed to relocate the individuals. There will be an ongoing management and monitoring of the project activities throughout the three phases to avoid potential conflicts and maintain relationships among the local communities and workers from different places.

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