Does the Atewa Forest Landscape need a Strategic Environmental Assessment?

Introduction

Globally, Strategic Environmental Assessment (SEA) is increasingly being recognized as a means by which sustainability goals can be reached. It focuses on policies, plans and programmes that promote integration of environmental, social, cultural, economic and climate change considerations into development strategies and sector reform[1].

Following the intention of the Government of Ghana to set up an integrated bauxite and aluminium industry in Ghana, the parliament in 2018 passed the Ghana Integrated Aluminium Development Corporation Act, 2018 (Act 976) to establish the Integrated Bauxite and Aluminium Corporation. The Act provides the legal framework for the corporation to oversee the development and regulation of an integrated bauxite and aluminium industry. Act 976, however, did not make any provisions for the conduct of a Strategic Environmental Assessment (SEA). Further, the current legal framework on environmental assessment in Ghana (Act 490 and L.I. 1652) did not make any provision for the performance of a SEA even though in practice SEAs are occasionally undertaken[2]. This notwithstanding, there seem to be no indication for the conduct an SEA for the proposed bauxite and aluminium industry. The Atewa Range Forest Reserve, among other sites, has been earmarked for the mining of bauxite in Ghana.

Why the need for a SEA for the Atewa Forest Landscape?

***Forest and Biodiversity*:** The Atewa Reserve covers an area of about 253 km^2 of forest land. It is recognised as one of only two upland evergreen forests in Ghana. The ecological significance of Atewa forest has been well-known for many decades. There are about 711 species of butterflies in Atewa, out of the 925 butterflies in Ghana. In Atewa, there are also 239 species of birds out of the 749 species of birds in Ghana, 1134 plant species out of the 3725 plant species in Ghana, 40 out of the 79 species of amphibians and 69 out of the 260 species of mammals in Ghana[3]. The Atewa forest provides pollinators and conducive atmosphere for the production of agro-commodities such as cocoa in the Atewa landscape. Bauxite is found near the surface and it is extracted through strip-mining. Strip-mining process will remove all native vegetation in the area, resulting in a loss of habitat and food for local wildlife. Despite the existence of many plant and animal species, some of them are endemic to Atewa forest while others are critically endangered.

[1] http://www.worldbank.org/en/topic/environment/brief/strategic-environmental-assessment
[2] https://www.ghanawildlifesociety.org/GWS%20Abridged%20Legislative%20Report.pdf
[3] https://ghana.arocha.org/wp-content/uploads/sites/15/2015/07/Biodiversity-of-Atewa-A-Rocha.pdf

***Water Resources*:** The Atewa Range Forest Reserve serves as a watershed for three rivers (i.e. Ayensu, Birim and Densu Rivers) that provide water for domestic, industrial and agricultural use. It provides drinking water to over five million people in Southern Ghana and this includes the capital, Accra. SEA will serve as a tool to assess the environmental, agricultural and economic consequences of the proposed bauxite mining on the water resources found within the Atewa landscape. Water is a vital input for the agricultural sector. The proposed bauxite mining will have an impact on the quality and quantity of water extracted from the watershed in Atewa.

Climate change: Keeping global warming below 1.5°C to avoid dangerous climate change requires the removal of vast amount of carbon dioxide from the atmosphere. The Intergovernmental Panel on Climate Change (IPCC) suggests that globally around 730 billion tonnes of carbon dioxide (CO_2) must be taken out of the atmosphere by the end of the century. The IPCC also suggest that boosting the total area of the world's forests could store around one quarter of the atmospheric carbon necessary to limit global warming to 1.5°C above pre-industrial levels[4]. This means that adding up to 25 million hectares of forest every year from now until 2030.The Atewa forest alone withholds about 3.6 million tonnes of carbon[5]. This is almost the equivalent of the entire annual CO_2 emissions from fossil fuels for all of Ghana. Imagine the amount of carbon that will be stored if the Atewa forest is conserved and protected from deforestation and degradation. Mining bauxite in the Atewa forest will strip the area of its capacity to store carbon. The destruction of the forest range will as well release huge amounts of carbon that has been stored by the forest for decades. Conserving this forested area will be a step in contributing to the global fight against climate change as well as reducing its impact on human and our economy.

***Energy Consumption*:** The entire process of transforming raw bauxite into aluminium is incredibly energy intensive, requiring copious amounts of electricity, water and resources to produce.[6] Hence, the main reason why power plants are built solely to support the aluminium industry. Bearing in mind the large amount of energy required to process bauxite and the current power situation in Ghana, it will pose a big challenge[7]. According to the International Energy Agency, globally, an average of 14,000 kilowatt hours (kWh) of energy is used to produce one kilogram of aluminium[8].

***Human health*:** Bauxite mining has great potential to create chronic and unpredictable exposures, leading to direct or indirect, immediate and long-term potential impacts on health. A number of physical, chemical, biological, and ergonomic hazards exist

[4]https://www.nature.com/articles/d41586-019-01026-8
[5] https://ghana.arocha.org/wp-content/uploads/sites/15/2016/11/Atewa-brochure-compleet-compressed1.pdf
[6] https://recyclenation.com/2010/11/aluminum-extraction-recycling-environment/
[7] https://blog.ghanawildlifesociety.org/wp-content/uploads/2018/03/GWS-Position-on-Atewa-1.pdf
[8] https://www.iea.org/tcep/industry/aluminium/

throughout the mining process[9]. Soil contamination by heavy metals reduces soil fertility, which damages food crop productivity and food quality. Heavy metals are easily taken up by crop roots and accumulate at high levels in the edible parts of the crop, making them dangerous to eat. It also has the potential to pollute the water resources within the Atewa landscape. This water reaches over 5 million people in Ghana as well as used for agricultural and industrial production.

Conclusion

A Strategic Environmental Assessment (SEA) will, therefore, provide an overall, holistic picture of the possible environmental, social, cultural and economic impacts of the proposed bauxite mining in the Atewa forest landscape. SEA will help the Government of Ghana and other stakeholders reach a better understanding of how environmental, social and economic considerations fit together. Without that understanding, we risk turning today's development successes into tomorrow's environmental challenges. In short, SEA helps decision makers think through the consequences of their actions. It is, therefore, recommended that the Government of Ghana conducts this assessment before further planning and or commencement of the bauxite mining in the Atewa landscape and other areas earmarked for bauxite mining in Ghana.

[9] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4934713/