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THE IMPACTS OF GOLD MINING IN GHANA: THE GOOD AND THE BAD

Ofori Yeboah
Supervisor E.A. Efimova

Ghanaians are legally and illegally engaged in mining. In Ghana, the mining sector account for 41% of the country's foreign exchange and it is the leading foreign exchange earner. Gold now accounts for over United States $600 million and 90% of all mineral productivity annually and has replaced cocoa as Ghana's principal foreign exchange earner [1]. Increased investments in the mining sector resulting from Ghana's economic reforms have several benefits. Mining is the principal earner of foreign exchange in the country, providing a large amount of government revenue, a source of income and social infrastructure to the population, creating direct and indirect employment and contributing to community development in mining areas There is evidence of gold extraction activities in Ghana as far back as the 7th and 8th centuries A.D., as gold deposits attracted Arab traders into the country. These activities were strategically located along rivers where sediments believed to contain deposits of gold were washed constantly to separate the gold grains. This was a source of wealth for these communities and individuals engaged in mining. As time went on, it was revealed

that deposits of iron, limestone, kaolinite and other clay minerals exist in some quantities. Gold, however, was and is the principal mineral extracted and accounts for 90% of extracted minerals in Ghana [2].

The Bad: According to Ahern and Stephens, mining remains one of the most hazardous occupations in the world, both in terms of short-term injury and loss of life, but also due to long-term impacts such as cancers and respiratory conditions, including silicosis, asbestosis and pneumoconiosis. A catastrophe hit the people of Dunkwa-on-Offin in the central region where numerous people were buried in a "galamsey" pit when it caved in near the Ofin River. Over 100 miners perished in that single disaster. Reports stated that about 136 "galamsey" machinists were working in the pit when the incident occurred on June 27, 2010.The Ghanaian Times reported an increase in cases of kidney diseases, and according to Dr. Amoako Atta (head of the renal unit of the Komfo Anokye Teaching Hospital), the use of mercury by illegal miners is a contributory factor. In a study conducted by the Centre for Environmental Impact Analysis, the occurrence of mercury in the environment was reported to be a result of its use in the gold recovery process where the inorganic form of the metal is either washed into rivers or readily vaporized into the atmosphere. The concentrations of mercury found in fish were three times higher than levels deemed safe by the Ghana Environmental Protection Agency (GEPA). In addition, chemicals in the river can be harmful to the skin and the entire human body. The destruction of farm lands by these mining companies. In 2011, Ghana produced a record-setting amount of cocoa, weighing in at over one million tones. Since then, mining companies and illegal mining steadily ramped up, cocoa production has trended downwards, with a drop to 740,000 tones in 2015.Almost all the large scale mining companies in the country employ the open-pit method of mining in addition to cyanide heap leach operations. These methods have far-reaching consequences for human health and environmental safety. The use of heavy machinery in exploiting the minerals also has a destructive effect on the vegetation as it generates more dust (ILO, 2005) and noise pollutants. While mining projects may generally have weak links with the rest of a

host national economy, they can have a decisive impact on the communities in which or near which they are located [3].

The good: The mining sector contributed GH¢15.8 billion and GH¢17.1 billion in 2016 and 2017 respectively. Proving to be one of the largest sources of revenue to the government as mineral royalties, corporate taxes and employee income taxes play pivotal roles in collecting revenue from the sector. The increment in revenue is mainly attributed to the increase in the volume of production of traditional minerals, coupled with favorable prices of commodities on the financial markets. Gold mining increases employment level, The Obuasi concession was Ghana's third highest gold producing goldmine with staff strength of about 4,300. Ever since the Obuasi goldmine began operation in 1897, the goldmine has been a center piece for commercial activity in Obuasi and Ghana as a whole, providing an unwavering revenue stream of earnings from the export of gold [4].

In the first quarter of 2019, the President of Ghana, Nana Addo Dankwa Akufo-Addo, the Asantehene, Otumfuo Osei Tutu II, and the management of AngloGold Ashanti outdoored the redevelopment project of the Obuasi goldmine – the mine is expected to generate US$ 98.18 million annually as royalties whiles taxes will be withheld for the next 22 years as the mine provides 2,500 jobs [4].

Conclusions. This article talked about some socio economic, pollution, and health impacts of gold mining in Ghana from both natural science and socioeconomic perspectives. The natural science study results revealed that pollution of water bodies and the collapsing of mining pits. The polluted areas were attributable to uncontrolled cyanide spillages and acid mine drainage. Levels of arsenic, manganese, lead, cadmium and mercury in most cases exceeded GS 175-1/World Health Organization (WHO) permissible guideline values. These results agreed with the observations resulting from the socioeconomic survey. It was obvious from both the natural and social science studies that residents of Ghanaian mining areas perceived water bodies to be highly polluted due to mining.

However mining is helping Ghana's economy with high revenue and employment every year [5].

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CRITERIA FOR ASSESSING THE EFFECTIVENESS OF MANUFACTURING ROBOTIZATION

Sergeeva D.K.
Supervisor Efimova E.A.

Abstract: The article discusses the process of robotization of the production process, as well as the efficiency of the production process. Criteria for the effectiveness of robotics when introduced into the production process of an enterprise are determined.