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Mini Review

Transitioning into a Green World: The Dark Side of Cobalt Mining

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Abstract

In a gradual shift towards achieving cleaner and environmentally friendly energy sources, the electric vehicle industry has recorded tremendous growth over the last decade across Europe and America. Cobalt is a vital element used in the manufacture of certain technologies and it is now in high demand to produce lithium-ion batteries for electric vehicles and smartphones. The democratic republic of Congo has the largest known deposit of lithium copper with an estimated 130,000 metric tons being mined yearly. This study aims to highlight the downsides of the massive environmentally unfriendly processes of cobalt mining to foster the dream of having a non-fossil fuel-dependent world. In as much as the perceived benefits seem to be great, it is vital to consider the environmental damages caused because of the excessive mining of cobalt. Much emphasis is being placed on the democratic republic of Congo in this research as there are unaddressed issues of conflicts, war, and child labour all associated with the extraction of cobalt in the region. This study proposes some policy recommendations for a solution-oriented approach for both the government of the democratic republic of Congo and the international community in managing the associated conflict within the region as well as adhering to the sustainability development goals.

Introduction

Nations across the globe have embarked on a sustainability journey in a bid to protect and heal the environment with the use of several indices like reduction of fossil fuel dependence and general consumption, reduction in environmental pollution, and technological advancement in various fields. One of the most important raw materials that is essential in the transition towards green infrastructure projects is Cobalt which is found in selected parts of the world with an abundant quantity in the democratic republic of Congo where the majority of cobalt mines are located [1]. Cobalt is used in various fields in the production of batteries, jet engines, construction tools, medicine, and computer components to name a few [2], it has become the main battery manufacturing raw material for EV companies that are experiencing a massive jump in growth in the last few years. The increase in demand from customers especially across Europe and America has led to an increase in the demand for cobalt by battery manufacturers.

Cobalt-containing copper was first discovered in the democratic republic of Congo in 1914 in the Katanga region known as Lualaba today. The presence and abundance of raw materials in a region when harnessed bring about a boost in economic activities which includes exportation, industrialization, job creation, and an increase in GDP. In the case of the democratic republic of Congo, there have been widespread concerns about the deterioration of the region due to conflicts, environmental pollution, and war [1]. The violent rush in the extraction of cobalt is causing a great deal of hardship which is coupled with the dominance and control by powerful nations. There has been widespread accusation of corruption, inhumane working conditions, and exploitation. In this study, I seek to shed more light on the cobalt mining situation in the democratic republic of Congo and also outline possible solution-oriented strategies and policies that can be adopted by both the government of the democratic republic of Congo and all other international key players involved in the extraction of cobalt-copper in the nation.

The Issues

Forceful evictions of communities

As mining companies seek to expand their scale industrially, settlements and communities are forcefully taken over with the help of the state military without any reparations and compensations made to the victims [3,4].

Popularity of small-scale mining

Despite small scale mining which is also called "artisanal mines" being illegal in the country, this accounts for majority of the mining operations in the region. According to Radley [5], the estimated number of African miners involved in artisanal mining is placed at about 10 million. This sector is labour intensive with the use of crude methods and little or no use of modern mining infrastructure. It is dangerous to the miners and also to the environment as it is not regulated by governmental institutions [6].

Torture and intimidation

Widespread torture and intimidation are not alien to the region which is a result of conflicts within the region. The united nations highlighted several cases of inhumane and degrading treatment of the locals some of which are a reaction to protests meant to address human right abuses [7]. The political environment is a catalyst for human right abuses and the people have zero confidence in the government and the armed forces.



Injury and death

Mining generally is a dangerous exercise despite the advanced reinforcements and safety innovations put in place to keep miners safe and avert danger. With the numerous number of artisanal mines in DRC, fatal injuries are inevitable as mining standards are mainly flaunted and carried out without any safety apparatus in place. Despite the numerous reports on fatalities in the last few years in the region [8-10], there has been little or no improvements in the sector and the next fatality is a matter of when, not if [11].

Human trafficking and child labour

Artisanal mining in the DRC is so popular and unchecked that people of all ages are involved. More than 20% of the 255,000 who are mining in search of cobalt are children with a relative number being under 6 years of age [12]. Human trafficking is also a concerning issue in the DRC with relation to the conflicts in the region where armed militia group leaders are accused of the recruitment and grooming of child soldiers. Though there are efforts being made by international bodies to address the issues, the DRC is still behind in meeting the trafficking elimination standards [13].

Corruption, domination, and control

Due to the civil unrest within the region and the instability of government, a loophole is created where international companies involved in the mining of cobalt exploit the situation to their benefits. There has been attempts to bring these big corporations to book but that hasn't been successful [14].

Recommendations

The issues highlighted in the previous section can be mitigated through conscious efforts of both the government of DRC and the international bodies with vested interest in cobalt extraction within the region. Here are a few recommendations which if implemented, could put a reduction and if possible, an end to the dwindling mining situation in the democratic republic of Congo:

- a. The federal government in DRC should mount pressure on the ministry of environment and resources making sure they are effective in their duties in carrying out due diligence in the control and monitoring of mining processes within the region.
- b. Segmentation and division of mining sites in a manner that monitoring, and control can easily be established. This will also facilitate seamless record keeping of activities.
- c. Transparency of mining activities should be encouraged across all governmental institutions and companies involved in the mining of cobalt.
- d. Introduction of mining licenses which are tied to a daily extraction quota which must not be exceeded, and sanctions should be placed on companies who default.
- e. Orientation and training of mining workers should be mandated with the safety of miners made a priority.
- f. There should be a shift from the crude means of extraction to the use of machines and advanced mining tools which is safer and increases productivity.

- g. Laws which have been put in place banning children from working in mines should be strictly enforced and the international communities keeping an eye on compliance levels.

Conclusion

This study aims at addressing the untold side of the cobalt mining in the democratic republic of Congo and have explored some mining reforms which would assist in mitigating the issues at least to a manageable extent. The recommendations highlighted are not absolute as the issues within the region will remain the same if the economic situation in the nation is not addressed. Poverty is being leveraged upon with wages not reflecting the amount of work put in by the mine workers. The government of the democratic republic of Congo with the help of the European union and United nations has been taking some steps in addressing these issues but nonetheless, it can be done better and at a faster pace.

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