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Development of a downstream beneficiation strategy in an underdeveloped country: case study of the Lualaba Province in the Democratic Republic of Congo

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ABSTRACT

Since ancient times, civilization has had a close relationship with mineral resources in their various forms and their economic well-being. Overall, the Democratic Republic of Congo (DRC) is ranked as the world's leading producer of cobalt resources and reserves, which are largely exploited in Lualaba province. However, preliminary analysis and reports have shown that the DRC has failed to promote resource-based sustainable development, despite the policies implemented to date. Currently, the DRC's extractive industry faces challenges in terms of stakeholder's engagement and participation and lack of practicality of existing mining policies, with a focus on its cobalt industry to develop a linkage-based strategy for Lualaba province. Developed countries have been able to use mineral resources to stimulate economic growth, and downstream mineral development has been touted as one of the main drivers for promoting economic growth.

Aiming to examine a resource-based development approach, the objective of this study is to contribute to the design and recommendation of an appropriate policy strategy that can be translated into a set of operational actions with a tangible impact on human development.

Extensive studies have been conducted to identify the real issues in Lualaba province to address the implementation of a downstream beneficiation strategy. An approach using comparative case studies of different successful countries proved necessary to situate the DRC with regard to its enormous mineral resources in order to stimulate the development of its economy. Open-ended (quantitative approach) and close-ended questionnaires (qualitative approach) to collect primary data (level of satisfaction of the industry participants) were made possible by addressing different categories of people deemed capable of providing reliable data (purposive sampling) which were processed using the Exploratory Factor Analysis (EFA) using SPSS software from IBM and a qualitative method (determination of themes and sub-themes) using NVIVO 11 software. The EFA was used in this study in order to be able to manipulate responses from open-ended questionnaires as recommended by Watkins (2018) or moving from an empirical state of dataset to an analytical state of measurable dataset.

Preliminary results of the EFA were submitted to correlation coefficients and Cronbach's coefficient calculations to determine how the variables are interrelated and to assess the validity and reliability of EFA results.

Based on the case studies from different countries, the DRC needs to improve its upstream beneficiation in Lualaba Province by promoting a strong fiscal linkage, overcoming infrastructure challenges, eradicating corruption, and developing a global vision based on resources.

The compilation results from respondents based on EFA and themes and sub-themes analysis revealed that the main challenges in formulating successful downstream beneficiation of the cobalt mining value chain in the Lualaba Province are also tributary to the improvement of the upstream (local content) linkages of which the main challenges were: lack of effectiveness of legal texts, weak compliance with the existing legal framework, corruption, lack of a participative and collaborative approach among stakeholders, lack or obsolete infrastructure, lack of willingness to fund the local content development, rent-seeking behaviour, opacity of the tax system, child and pregnant women labour, artisanal mining, and lack of value sharing of the cobalt mineral rent.

Thus, it is recommended that the DRC improve the upstream value chain in the Lualaba province by implementing appropriate infrastructure and technologies that address the classic challenges related to quality standards that are supposed to facilitate downstream beneficiation.

Keywords: mineral resources; beneficiation; value chain; economic growth; Lualaba Province; upstream; downstream; linkages.