

# Obstructions to Entrepreneurship in the Mining Industry of Democratic Republic of Congo

Mwange Sagali Esther<sup>1</sup>, Fanjiajing<sup>2</sup>

<sup>1,2</sup>School of Economics and Management, Zhejiang University of Science and Technology, Hangzhou 310023, PR China

<sup>2</sup>Corresponding authors E-mail Addresses: fanjiajing[at]zust.edu.cn

**Abstract:** *Democratic Republic of Congo (DRC) possesses immense deposits of natural resources. However, these resources are not benefitting the local Congolese as much as its potential. Over the years, striking huge deals have been made in the exploitation of the minerals yet the local Congolese has benefited little from these deals. As reported by the World Bank and United Nation's (UN) assessment of economies, DRC exist as one of the poorest countries in the world. With the large reserves of essential mineral deposit, the economy of DRC can be improved as well as the standard of living of its citizens. It is therefore necessary to research avenues that hold potential for effective exploitation of these mineral resources for DRC. Entrepreneurship is recognized as a national asset necessary to be cultivated and remunerated to the greatest extent. If successful, it creates jobs and contributes immensely to a country's economy. Local entrepreneurship is very low in the mining industry of DRC due to lots of unclarified reasons. Herein this work, we investigate the obstructions to entrepreneurship in the mining industry of DRC. In addition, a few suggestions and recommendation are made that can help improve and motivate the citizens to take opportunities in the mining industry of DRC.*

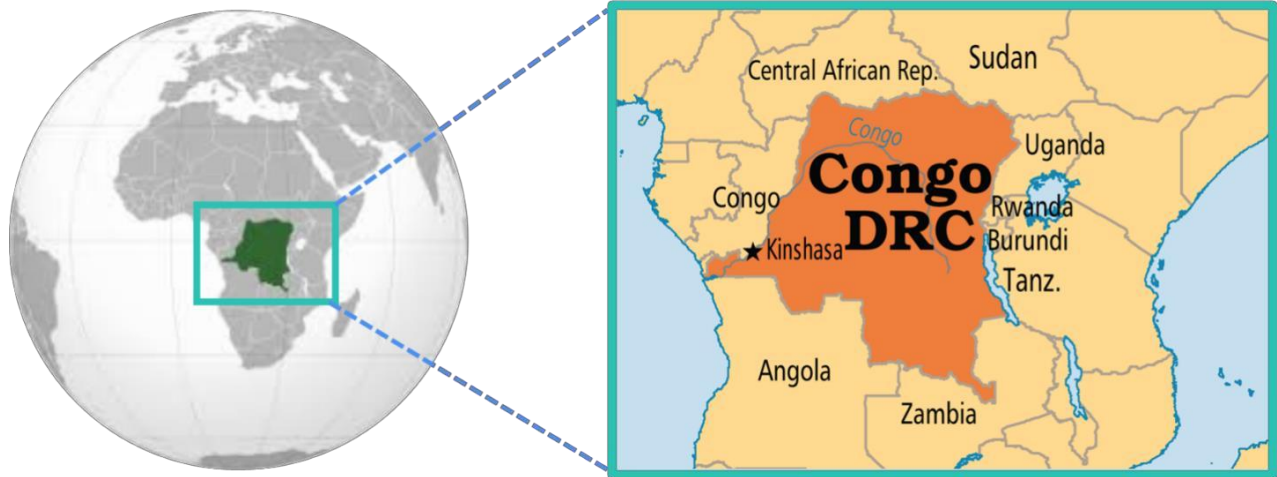
**Keywords:** Mineral exploration, Entrepreneurship, Democratic Republic of Congo, Questionnaire investigation

## 1. Introduction

As a victim to conflicts, power struggle and political instability, Democratic Republic of Congo (DRC) is gradually regaining stability creating room for economic development. For this reason, it necessary to identify and improve all plausible avenue to collectively boost its economy. Entrepreneurship is one strong pillar that hold potential to contribute to fast economic growth in DRC. Therefore, factors that hinder and promote entrepreneurship of DRC need to be identified. According to the recent World Bank's assessment and overview, the largest Francophone country in Africa, DRC, is gifted with enormous natural resources making it a hub for investments. As presented in the **Figure 1**, DRC is located close to the central part of Africa and shares borders with Sudan, Uganda, Rwanda, Burundi, Zambia, Angola, and Congo Brazzaville. With over 80 million hectares of potent land sitting on over 1000 listed minerals and noble metals, DRC has the prospect to become one of the wealthiest economies on the continent and a chauffeur to African development. However, the progress rate of entrepreneurship and businesses in DRC has been far lower than in other sub-Saharan Africa nations, taking special consideration in the size of GDP and population<sup>1-3</sup>. A wide variety of challenges which include but not limited to cultural discretions, lack of entrepreneurial acumen, inadequate access to steady electricity and internet, and also

the lack of credible business services and affordable workspaces for startups are hampering progress of business development<sup>4, 7</sup>. While these are major challenges that need to be solved to allow the growth of the entrepreneurial system, some businesses have successfully surmounted the roadblocks and have developed from idea to scale<sup>4, 6-9</sup>.

The DRC, because of its natural resources has propensity to be one of the richest countries on earth. However, despite a climate conducive to abundant mineral resources contained in country, the economy concerning the DRC has declined drastically as the mid-1980s<sup>10-17</sup>. Over 85 % of the population lives in extreme poverty and 80 % of households report an inability to meet basic needs. Close to 75 % associated with the total population is undernourished<sup>18-22</sup>. The agricultural sector offers hope for economic prosperity since it makes up about 44.9 % of GDP and employs more than seventy percent linked to the total population, although the country's agricultural potential remains largely untapped. 80 million hectares of arable land is present, but up to now, only 10% of it is getting used. Agricultural production has fallen by 40% since 1990, and productivity has suffered further through the steady shift of labor to mining sector<sup>23-30</sup>. The background information presented in this report demonstrates that agriculture and mining would be the two largest industries which are essential in the DRC.



**Figure 1:** Geographical location of the Democratic Republic of Congo

The DRC, as stated earlier, is endowed with exceptional mineral resources, including copper, cobalt, zinc, cassiterite (the chief source of metallic tin), manganese, coal, silver, cadmium, germanium (a brittle element used as a semiconductor), gold, palladium (a metallic element used as a catalyst and in alloys), uranium, and platinum<sup>31-37</sup>. The exploitation of these resources holds great promise for jump-starting economic development, as has happened in other countries. For instance, DRC's mining sector could, within ten years, contribute 20-25 percent of GDP and almost nine-tenths of total exports. Entrepreneurship in DRC is generally poor, relative to the population density and land area. The mining sector is one of the main pillars driving the economy and also a stronghold capable of propelling DRC to become one of the strongest economies on the continent. Therefore, in this study, the main factors hindering local and foreign driven entrepreneurship in the mining sector of DRC is exploited. In addition, recommendation is given which can guide the sustainable development of a strong entrepreneurial pillar within the mining industry of DRC.

## 2. Research Methods

### Research design

According to Stevens, Loudon, Ruddick, Wrenn & Sherwood (2012), a questionnaire is a list of well thought and carefully structured questions with the intention of soliciting for reliable responses to research questions. In this study data were obtained via the interviews, survey questionnaires analysis of records, to address the research problem. Both the quantitative and qualitative research methodologies were used with the aid of a questionnaire.

### Target population

Population in this study refers to objects or the subjects with specific characteristics which consist of the total collection of the individuals from which the study will be carried This will comprise of two sets of characteristics;

- 1) Stakeholders who are the policy makers and
- 2) Entrepreneurs, Start-ups, retired entrepreneurs, and even youth with aspirations of becoming future entrepreneurs in the mining industry
- 3) Data collection method and the research instrument

A well-structured questionnaire was used as an instrument to gather the required data from the randomly selected organizations.

### Data analysis

The research process goes through five steps, namely; planning, the data collection or fieldwork, editing of data collecting instruments to eliminate obvious errors during the collection of data, the coding of the information collected (this is captured on to the computer), and data analysis follows as the last step. The data to be analyzed in this study is quantitative, the questionnaire will be assigned numerical values to measure the importance of given behavioral expectations by the respondents.

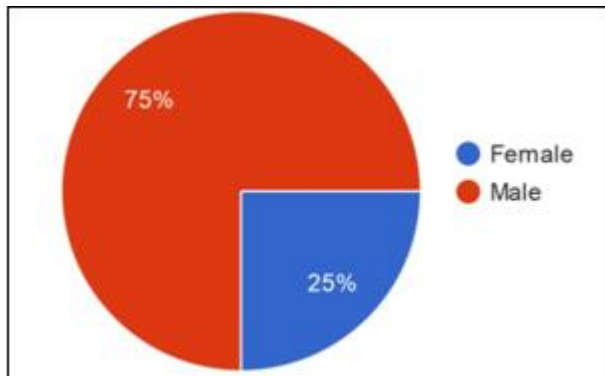
## 3. Results and Discussions

In this work, a total of 100 questionnaires were distributed out of which 78 has been recovered. Data was obtained by means of an online data collection form. Valid forms used in the final analysis were 78. Detail analysis of the data obtained reveal the following as key points as major hinderances to entrepreneurial development in DRC;

### Gender Influence

The challenges that women face in the mining sector are very similar if not the same worldwide. It always revolves around issues of inequality and equity. It is therefore very important that the women who are involved in this sector work in synergy in an inclusive manner. As shown in the Figure 2, the fractions of males that pursue entrepreneurship in the mining sector of DRC are far more the females. The current population trend shows about 99.5 males per 100 females. Although clearly, there are more females, the graph suggests the females are not well motivated to start businesses in the mining industry and most probably other corporate sectors. As previously stated in the world bank report of 2017, women entrepreneur plays a major in the economic growth of any country. However, there are several challenges they must grapple with. In DRC, most women are faced with challenge's that include but not limited to inadequate regulations, social prejudices, sexual assault, disproportionate family responsibilities, lower rates of education and limited access to finances. These factors collectively inhibit female participation in corporate entrepreneurship. It is therefore

strategic to be heard under a structured and recognized platform, and WIM-DRC is a good example. The WIM-DRC, an abbreviation for Women in Mining-DRC was established in in Lubumbashi, 2019 conference and exhibition and aims to end all forms of discrimination against women in the Democratic Republic of Congo's (DRC) mining sector and to develop the DRC by integrating the gender approach to ensure good governance, fairness and transparency. The goal is for women in this sector to be well equipped, well connected and to position themselves as leaders to embrace their roles and responsibilities. Beyond being heard, they need to be respected.



**Figure 2:** Gender composition obtained for the pursuit of entrepreneurship in the Mining Industry of DRC.

#### Education Influence

There are two very basic reasons considered to link economic growth and education. To begin with at most general level, it really is instinctively reasonable that living standards have raised a great deal over the last years as a result of education. There is certainly usually a correlation involving the scientific advancement in addition to the way in which education has aided the introduction of knowledge as seen by the casual observer. People that usually find it

difficult to function in advanced societies are individuals with very limited education. To benefit through the scientific advances in addition to contribute to it, education and knowledge are essential. Secondly, being at a more precise level, a broad range of econometric studies point out that the incomes individuals can grasp depends on their level of education.

Currently, the DRC is ranked one of the poorest countries in the world although it is estimated to hold potential as one of the richest in natural resources. It is therefore necessary to exploit these natural resources through potential means such as entrepreneurship to boost the economy. However, entrepreneurship growth is slow due to inadequate knowledge. As data obtained on workers in the mining industry from the questionnaire, only 3 respondents were at the postgraduate level, 11 at the bachelor graduate level and remaining 23 were high school levers who had ventured into artisanal and small-scale mining to make a living. The nature of jobs and income of these respondents had a direct link to their educational level. The respondents in artisanal mining had conception of making it big by manually digging up minerals where as the graduates were with the conception of making it big by legally acquiring land space and employing automobile robots for mineral exploration. It is therefore a suggestion to address the education system in DRC to promote economy drivers such as entrepreneurs to exploit various avenues in the mining industry to intimately boost the economy. The education system in the DRC will play an important role in the general building of and promoting economic growth and in redressing inequalities. As it stands, most Congolese are employed in the mining sector out of which over 2 million as on-site artisanal miners working for foreign investors. These people make a livelihood from this as a daily wage.



**Figure 3:** The local Congolese working in artisanal mining

#### 4. Funding and Marketing

- **Access to funds**

Access to funding for entrepreneurship is a problem in DRC. Not only for startup entrepreneurs but to entrepreneurs in general. Startup entrepreneurs, who cannot access bank loans because they lack collateral and track records, are reliant on friends and family, local and diaspora high net worth individuals and specialized investment funds. As data obtained from the difficulty level was very high for amateurs

who are venturing into businesses in the mining industry of DRC. Youth unemployment is mostly pernicious in urban areas, and the government has no feasible strategy yet to deal with this problem. All artisanal miners lack economic opportunities. They are often denied access to industrial sites, even for purposes of exploiting commercially non-viable deposits, and the region lacks artisanal mining zones.

- **Market Access for Artisanal mining**

Every day, in the DRC thousands of artisanal miners find their way on to the mines to hunt a share of the riches, using



basic tool like pickaxes, shovels and sacks. Among them, communities in eastern DRC rely on Artisanal and Small-Scale Mining (ASM) as a primary livelihood. ASM is a significant driver of DRC’s economy. Approximately 15 percent of the national population directly or indirectly depends on income from ASM. ASM tends to be an informal and risky business. If not managed properly, ASM can have negative impacts on the health and wellbeing of miners, and the community at large. Given its informal nature, ASM has also been used to fuel conflict in eastern DRC.

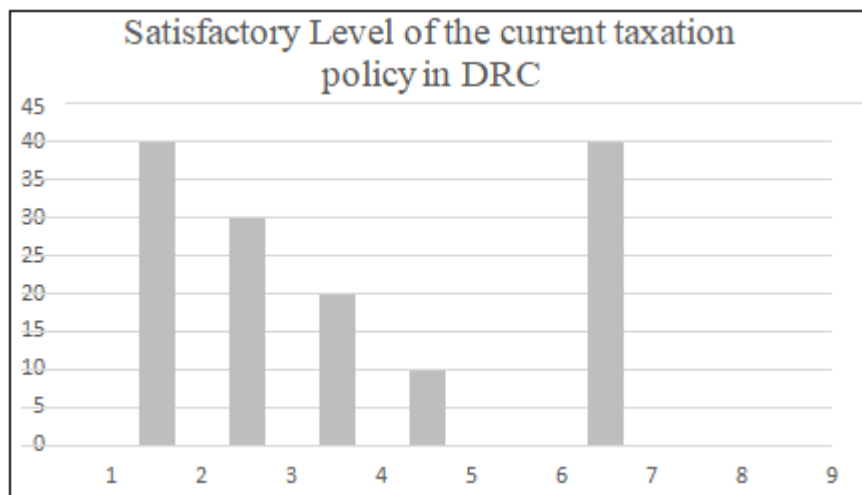
**Taxation**

In brief, Corporate income tax (CIT) is paid on profits realized by a company or an individual that carries out any operational activity in the country. The Democratic Republic of the Congo levies taxes on resident companies and individuals on a territorial basis (or source basis) of taxation. Foreign-sourced profits (e.g. dividends received from a foreign subsidiary) are thus exempt from CIT. Non-resident companies or individuals that carry out an activity in the DRC are taxable on profits they realize through PEs or fixed establishments that are located in the Democratic Republic of the Congo. The CIT rate is 30% (including mining companies). Till now, it has been agreed that the mining

sector of DRC is dominated artisanal mining. And with the current financial state of the vast majority of the populace, it is right to imagine that most aspiring entrepreneurs will opt for artisanal mining rather than the large-scale commercial option. However, the survey conducted reveals that all current and aspiring entrepreneurs in Congo DR are unimpressed by the current taxation (Figure 4). While it is no surprise that armed rebel faction does, from time to time infiltrate mining sites for the loot, state security officials known to be associated with the government are equally guilty of demanding illegitimate taxes and fees or confiscating minerals from miners and traders. This illegal taxation is seriously obstructing the zeal for entrepreneurship in Congo.

**Table 1:** 7-point Likert scale employed to identify satisfactory levels in taxation

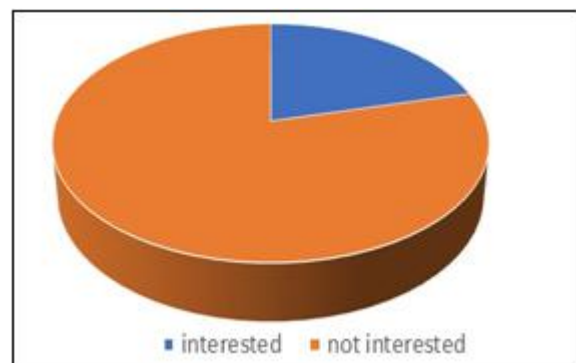
Extremely Dissatisfied	1
Dissatisfied	2
Moderately Dissatisfied	3
Neither Satisfied nor dissatisfied	4
Moderately Satisfied	5
Satisfied	6
Extremely Satisfied	7



**Figure 4:** 7-point scale satisfactory levels of the current taxation policy

**Motivation**

The importance of entrepreneurship has been established beyond doubt as a key influencer in the country’s economy as well as a major solution to unemployment. Since the government in DRC is no longer providing jobs for graduates, the least it can do is to create an environment consisting of schemes and strategies to promote and motivate the citizens, specially the youth to take up entrepreneurship in the local settings of DRC. At present there is no reliable scheme to boost yield of entrepreneurs, especially for the young ones. The survey conducted revealed that over 79 % of the locals were not interested in in any form of advanced entrepreneurship in the DRC jurisdiction which is a problematic figure (Figure 5). Moreover, the few interested in taking up projects in the mining industry did so because of their personal desire to do something creative, prior experience and demand for the product or service.



**Figure 5:** Chart revealing interest in entrepreneurship in the mining industry of DRC

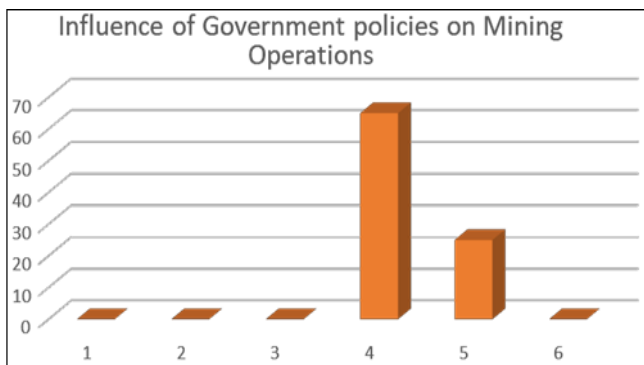
**Government policies**

There are a number of government policies that administer the activities associated with the mining industry. The survey conducted reveals that the policies do have a major influence on the functioning of the industry. The 6-point Likert scale

presented in figure 6, the respondent did confirm that policies have significant impact on them. Inquiring on the specific effects revealed that the government have set a policy that favor local ownership of mining related companies. Although this policy is being badly executed because of corruption and ethnicity, it does exist and it has, to some extent, positively influence the growth of mining industry.

**Table 2:** 6-point Likert scale to identify how policies affect operations in the mining industry

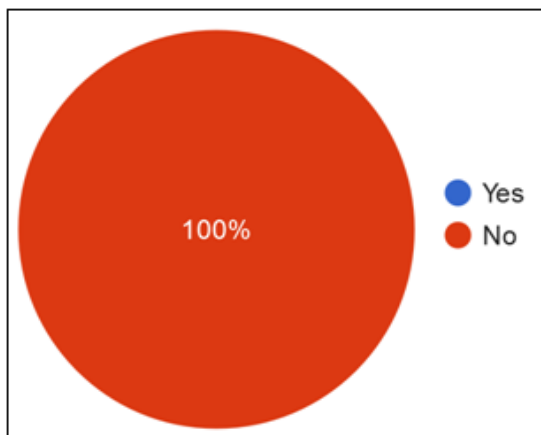
Extremely Dissatisfied	1
Dissatisfied	2
moderately Dissatisfied	3
neither satisfied nor dissatisfied	4
moderately satisfied	5
satisfied	6



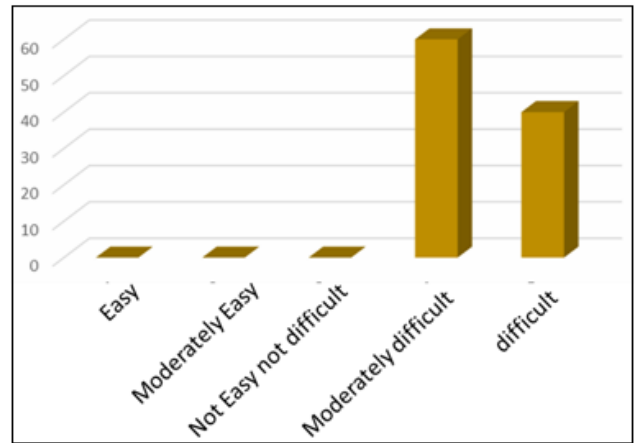
**Figure 6:** Rating the impact of government policies on mining in DRC.

**Access to Amenities**

ASM remains the dominant for of mining in DRC. In the regions, where ASM cross-border trade flourishes with a great number of people benefiting from the high levels of economic growth, basic service notably water, sanitation, health, education and transport are considered inadequate. The survey conducted suggests that almost no entrepreneur was pleased with the state of the basic amenities in the mining regions. The graph presented in Figure 7 and 8 show the responses obtained. The results suggest all respondents were absolutely not pleased.



**Figure 7:** Interviewees responding to the ease in accessing to basic amenities



**Figure 8:** Rating the ease in accessing basic amenities

**5. Recommendations**

Issues when you look at the mining in DRC are not just technical, but characteristically political. Development partners need to take account of political economy dynamics, to phrase it differently they have to understand just why things would be the way these are typically -i.e. who are the winners and losers for the system they try to alter or change, and exactly how reforms that are potential interventions may be suffering from their incentives and interests. As these results imply that any interventions must be focus on identifying, deconstructing and targeting specific issues where there is traction that is enough political i.e. adopt a problem-driven approach, in place of centering on comprehensive (and often over ambitious) solutions. In doing this, development partners should develop an adaptive and flexible approach, i.e. an approach that can respond to the inherent complexity (and changes) associated with mining in DRC, and apply lessons learnt through a feedback loop inside their programs. Development partners can play a role that is facilitating fostering (current) vertical and horizontal linkages, across sectors. Mining economic horizontal linkages with other sectors such as agriculture, or vertical linkages along with other players in mining value chains including aided by the formal private sector, in many cases are overlooked by development partners. Adopting a territorial development approach makes these links more visible, which may in turn help development partners consider techniques to maximize cross-sectoral synergies and linkages. Development partners hence want to coordinate their development interventions e.g. in agriculture and mining, formal and informal mining activities, thus breaking traditional sectoral silos. A local activity, yet very much integrated in national, regional and global markets in addition, mining is by nature. This hence requires development partners to try and connect and coordinate their interventions at the local, national, regional and global level. Development partners want to engage, facilitate or support partnerships between businesses and communities and formal and informal authorities. Multi-stakeholder partnerships are a instrument that is key the utilization of the Sustainable Development Goals (SDGs) Agenda. This instrument seems a lot more relevant when you look at the ASM mining that is gold because the sector is suffering from a range of interrelated challenges including conflict, child labor, environmental issues etc. requiring those things

of a wide range of stakeholders. In this manner, partnerships may be useful in harnessing collective action (and including informal organizations), establishing common and realistic ambitions and promoting inclusive development. Policymakers can open doors to businesses and play a crucial role in brokering partnership relations, bringing together businesses and authorities, incentivizing new types of cooperation with possibility of long-term change. Such support should take account that is proper of and address, power relations, enhancing the negotiating position of disadvantaged partners.

Capacity building is another problem requiring significant attention. So that you can successfully build a strong mining sector in DRC, which include the effective formalization the artisanal mining sector, the capability of local state agencies urgently needs to be developed. Specific state agencies in charge of managing the mining sector are expected to supervise the mining sector in a huge area with insufficient personnel, few vehicles and inadequate technical training. Furthermore, coordination between these services should be improved, as communication gaps and information sharing weaken the development in the mining sector. Another state actor which should be reinforced may be the mines police, who will be charged with ensuring security at mining sites. This has proved to be very hard in the conflict that is current. This Security issue also raises the pressing issue for the extent to which formalization efforts on ASMs can be implemented in outright conflict situations such as within the Kivu province. Some initiatives have been quite successful in countries such as Zimbabwe, Ghana and Rwanda where a reasonable standard of security prevails and a fairly solid governance structure is in place. These conditions are, however, lacking in DRC especially in places such as Kivu where the conflict minerals problem is most pressing. Due diligence could possibly offer a solution here, because it allows companies to deal with the difficulties for the informal and criminalized mining sector in a comprehensive way. A due diligence process requires companies to be diligent about their supply chains, as opposed to simply requiring tagging or certification. Increased input of local perspectives could considerably assist the growth of mining sector with a more substantial scope. Furthermore, initiatives must secure local buy in order to effectively take root. Several local stakeholders, for instance, raised issues regarding the legitimacy of industry-led initiatives. Not enough disclosure of internal processes, data and outcomes could impair the outcome for the various initiatives. Transparent multi-stakeholder processes, with real local ownership, would be the best way to achieve long-term results. Formal initiatives with a regional dimension can help bring local actors towards the forefront regarding the debate, and consequently increase local ownership. Furthermore, concerted efforts are urgently necessary to put a conclusion to fraudulent practices which have a dimension that is regional such as for instance cross-border smuggling.

Gender influence was a major finding that was identified to be obstructing entrepreneurship in DRC. Although at present the population of DRC contains more females in comparison to males, the females identified as entrepreneurs and aspiring entrepreneurs were less than 25 %. This setback can be credited to poor education, gender inequality, culture and

religion. Most of the females who have entered into this business, have done it out of necessity to supplement their family income rather than fulfil their dreams. It will therefore be necessary for the government and administrative stakeholders to put directives in place motive women within this domain.

Funding and marketing for a local artisanal mining entrepreneur is difficult. The inadequate access to funds to ramp up activities and mining efficiencies and the lack of schemes to market obtained products doesn't motivate the people to take up opportunities in the mining sector. The administration could see to this aspect to improve interest in the mining sector. At the moment, ASM has been identified as the most dominant form of mining in DRC and as such holds potential to create economic opportunities within the country.

Conflict minerals are also identified to impede the progress of legal local mining in the DRC. For this reason, the government can further strengthen the stakeholders and relevant forces to instill discipline and deal with armed groups leading such practices.

## 6. Conclusions

In summary, this work focuses on sustainable development within the mining industry of DRC. The mining industry in one of the largest and main export grounds in DRC however as it appears, local entrepreneurship is lacking within this domain. In this respect, this particular work seeks to identify and bring to light some of the major problems obstructing entrepreneurship in the mining industry of DRC. Statistical data is obtained from survey questionnaires and interviews on sites within the mining industry of DRC. The data are analyzed in comparison to literature. Also, obvious relationship is identified to co-relate development to cause. In addition, recommendations are suggested in the later parts of the manuscript that has the potency to help reduce the effects of these identified factors. In detail, all stakeholders have to be realistic about what it really is they could achieve, and work following a flexible and approach that is adaptive. In the work, education, gender, access to funds, access to market, lack of human capacity and the lack of motivation were realized as key causes dragging down growth of entrepreneurship within the mining industry of DRC. In summary we have suggested that the relevant authority and governance put in a well- structured framework to address these issues.

## References

- [1] *Panafrican News Agency (PANA) 2001,*
- [2] *Central Africa Minerals and Arms Research Bulletin 2001, 2*
- [3] Boeck, F. d., *ROAPE 2001, 90 (28),.*
- [4] Samset, I., Conflict of interests or interests in conflict? diamonds & war in the DRC. *Review of African Political Economy 2002, 29 (93-94), 463-480.*
- [5] n., *Congo and Central Africa. 2001; Vol. .*
- [6] Berdal, M.; Malone, D. M., *Greed and grievance. Economic agendas in civil war. 2000; Vol.*

- [7] Daito, A. T.; Lumbi, P., *La gestion des ressources minières en RDC, 1. Le diamant*. 2001; Vol.
- [8] *Diamond Annual Review-2000*. 2001; Vol. .
- [9] n., *Report of the Panel of Experts on the Illegal Exploitation of Natural Resources and Other Forms of Wealth of the Democratic Republic of Congo - S/2001/357*. 2001; Vol. .
- [10] Jourdan, L., **2010**, .
- [11] Katunga, J., *Environmental Change and Security Program Report 2006*, 12.
- [12] Lamb, G.; Alusala, N.; Mthembu-Salter, G.; Gasana, J. M., *Rumours of peace, whispers of war 2012*
- [13] Le Billon, P., *Political Geography* **2001**, 20 (5), 561.
- [14] Mascarenhas, A., *Newsweek* **2010**, .
- [15] Mitchell, H.; Garrett, N., *Beyond conflict: reconfiguring approaches to the regional trade in minerals from eastern DRC* **2009**,
- [16] n., *Democratic Republic of Congo: 'our brothers who help kill us'; economic exploitation and human rights abuses in the east* **2003**,
- [17] Laudati, A., Beyond minerals: broadening 'economies of violence' in eastern Democratic Republic of Congo. *Review of African Political Economy* **2013**, 40 (135), 32-50.
- [18] O'Neill, O., *Metaphilosophy* **2001**, 32 (1), 1026.
- [19] Robeyns, I., *Journal of Human Development* **2005**, 6 (1), 93.
- [20] Sen, A., *Southern Economic Journal* **1997**, 64 ((2)), 384.
- [21] Townsend, P., *Oxford Economic Papers* **1985**, 37 ), 659.
- [22] De Herdt, T.; Marivoet, W., Capabilities in Place: Locating Poverty and Affluence in Kinshasa (Democratic Republic of the Congo). *Journal of Human Development and Capabilities* **2011**, 12 (2), 235- 256.
- [23] Anderson, J. R.; Feder, G., *World Bank Research Observer* **2004**, 19 (1), 41.
- [24] Benin, S.; Nkonya, E.; Okecho, G.; Randriamamonjy, J.; Kato, E.; Lubade, G.; Kyotalimye, M., *Agricultural Economics* **2011**, 42 (2), 249.
- [25] Benson, A.; Jafry, T., *The Journal of Agricultural Education and Extension* **2013**, 19 (4), 381.
- [26] Birner, R.; Davis, K.; Pender, J.; Nkonya, E.; Anandajayasekeram, P.; Ekboir, J.; Mbabu, A.,
- [27] *Journal of Agricultural Education and Extension* **2009**, 15 (4), 341.
- [28] Boyd, B. L., *Journal of Agricultural Education* **2003**, 44 (4), 47.
- [29] Chowa, C.; Garforth, C.; Cardey, S., *The Journal of Agricultural Education and Extension* **2013**,
- [30] 19 (2), 147.
- [31] Chowdhury, A. H.; Odame, H. H.; Leeuwis, C., *The Journal of Agricultural Education and Extension* **2014**, 20 (1), 7.
- [32] Faure, G.; Desjeux, Y.; Gasselin, P., *Journal of Agricultural Education and Extension* **2012**, 18
- [33] (5), 461.
- [34] Veen, A. H. van der: A study of Pyrochlore — Verh. Kon. Ned. Geol. Mijnb. Gen. Geol. Series 22, 188 (1963).
- [35] -- A Study of Some Niobium-Bearing Minerals of the Lueshe Carbonatite Deposit — Rep. EUR 240e. 31 p. (1965).
- [36] Jäger, E.; Niggli, E.; Veen, A. H., A Hydrated Barium-Strontium Pyrochlore in a Biotite Rock from Panda Hill, Tanganyika. *Mineral. Mag.* **1959**, 32.
- [37] Semenov, E. I.; Gerassimovskiy, I.; Maksimova, N. V.; Andersen, S.; Petersen, Q. V., Sörensenite, a New Sodium-Beryllium-Tin Silicate from the Ilimaussaq. Intrusion, South Greenland. *Meddr. Grønland* **1965**, 181.
- [38] Skorobogatova, N. V.; Sidorenko, G. A.; Dorofeeva, K. A.; Stolyarova, T. I., Geology of Rare Elements Deposits. *Izd. Nedra* **1966**, 30.
- [39] Wambeke, L., Geochemical Prospecting and Appraisal of Niobium-Bearing Carbonatites by X- ray Methods. *Econ. Geol.* **1960**, 55.
- [40] Wambeke, L., The Alteration Processes of the Complex Titano-Niobo-Tantalates and their Consequences. *Neues Jahrb. Mineral. Abhandl.* **1970**, 112.