

## Original article

# Formalization of artisanal and small-scale mining in eastern Democratic Republic of the Congo: An opportunity for women in the new tin, tantalum, tungsten and gold (3TG) supply chain?

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## ABSTRACT

This paper analyzes the opportunities, constraints and challenges for women in Tantalum, Tungsten, Tin and Gold (3TG) supply chains in the artisanal and small-scale mining (ASM) sector of eastern Democratic Republic of the Congo (DRC). Drawing on empirical qualitative data collected during five months of field research between 2015 and 2018, the paper analyzes the governance structures of, and power relations within, 3TG ASM supply chains in the eastern DRC, with special emphasis on women's roles. The analysis offers clues as to why, in eastern DRC, women's positions in 3TG ASM supply chains changed after formalization.

## 1. Introduction

The situation facing women engaged in artisanal and small-scale mining (ASM) has attracted the attention of many researchers around the world (e.g. Bashirwa and Cuvelier, 2019; Brottem and Ba, 2019; Buss et al., 2019). Several texts focus on the position of women in ASM value chains, their motivations for entry and also the constraints and challenges they face in the sector. From Latin America, through Asia, to Africa, women engage in ASM for livelihood purposes: to earn more money, to alleviate short-term poverty, and in response to there being a lack of readily-available and economically competitive alternative economic activities (Lahiri-Dutt & Macintyre, 2006; Hinton et al., 2003).

In the Democratic Republic of the Congo (DRC) and in the eastern DRC in particular, women engage in ASM for similar purposes. In eastern DRC, the ASM sector is an important source of livelihood, creating employment and providing income for hundreds of thousands of people, and on which several millions of other people depend (World Bank, 2008; Pact, 2010; Kamundala and Mukasa, 2017; Chipangura, 2019; Kemp and Owen, 2019; Sovacool, 2019). In this part of the country, the ASM supply chain features men, women and occasionally, children. But on the whole, it is characterized by gender inequality: women make up only 20% of the ASM labor force

(World Bank, 2008; PAC, 2014) and rarely have significant decision making powers (World Bank, 2015; Kelly et al., 2014).

The position of women in the ASM supply chain is a controversial issue. Multiple stereotypes and customary norms exist about their role in ASM. Women are, for instance, often not allowed to work underground nor manage a pit, and are typically relegated to work that does not pay well at the mines (World Bank, 2015; Kelly et al., 2014). As a result, many struggle to accumulate financial assets, and consequently face many challenges and barriers in their efforts to access good positions and better jobs across the ASM supply chain (World Bank, 2015; Kelly et al., 2014). Women, therefore, tend to take up less profitable jobs such as transportation, washing, crushing, while others are involved in prostitution and in small business in and around mine sites (Bashwira, 2017; Mbami and Kandolo, 2006).

Although ASM provides economic opportunities in eastern DRC, it also engenders problems, such as hazardous work and other health risks, as well as social and environmental concerns. In addition, ASM in the eastern DRC is well-known to be an informal activity that is associated with crime and the presence of armed groups and consequently, a high degree of insecurity (UN 2001; OECD, 2011). In response to these problems here and elsewhere, several policies have been implemented. Some have been radical responses, such as the United States Provision 1502 (conflict minerals) included in the Dodd-Frank Wall

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Street Consumer Protection Act, which led to the temporary ban on Congolese mineral exports during the period 2010–2011 (Koch and Kinsbergen, 2018; Parker et al., 2016; Seay, 2012). Others have focused on ASM formalization specifically (Geenen and Custers, 2010), a move justified, first and foremost, by the fact that there are few immediate employment alternatives for those working in the artisanal mining sector in the DRC. The move to formalize is secondly justifiable on the grounds that it is believed to be a way of offsetting the adverse impacts that radical policies (such as the temporary ban on mineral exports) have had on the livelihoods of those residing in mining areas as well as on the general economy of the eastern DRC. (Seay, 2012; Geenen et al., 2011).

The aim of ASM formalization is to facilitate the implementation of legislation that clearly regulates the property rights of working areas and to monitor access to the resources that are exploited (Hilson, 2008; Siegel and Veiga, 2009; Salo et al., 2016; Hilson et al., 2017; Hilson and Maconachie, 2017; McQuilken and Hilson, 2018; Hilson et al., 2018, 2019, 2020; Sauerwein, 2020). Formalization also addresses the organizational capacity of the state to reinforce the law, to properly control mineral production from mine sites, and to provide miners with technical support and training where necessary to improve working and site conditions (Rochlin, 2018; Childs, 2008; Hinton, 2009; Siegel and Veiga, 2009). At the global level, the motivation for ASM formalization is that it responds to various problems, including illegality, security challenges and environmental concerns (Salo et al., 2016; ).

In the context of ASM in DRC, formalization entails identifying and grouping all artisanal miners within cooperatives and allowing them to work only in artisanal exploitation zones (AEZ). Traceability schemes<sup>3</sup> and certification<sup>4</sup> have been identified as centrepieces of ASM formalization process. The goal of formalization in eastern DRC is to integrate the 3TG chain into the global market in accordance with the *OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas* (OECD, 2011) while simultaneously allowing mining administration departments to monitor and regulate the entire supply chain effectively, with a view toward maximizing government revenues (DRC, 2009). The implementation of ASM traceability and certification schemes in the eastern DRC has brought with it new standards on the upstream-side of 3TG supply chain, and changed its structure (Kilosh, 2018). These new standards have created opportunities, and posed constraints and challenges for all stakeholders.

This paper reflects on how the move to implement new 3TG supply chains,<sup>5</sup> in response to a broader push to formalize ASM and implement responsible mineral sourcing programs in eastern DRC, has impacted women. It focuses specifically on how the formalization process can help to create opportunities to improve the position of women in ASM. This article draws on empirical data collected during five months of field research at several mine sites in eastern DRC between 2015 and 2018. During the first episode of field research, the short-term impacts of traceability and certification initiatives for miners, including women, at six mine sites in South-Kivu and North-Kivu, were examined. Semi-structured interviews (370 conducted) and focus groups (24 conducted) were carried out to capture this information. During the second episode of field research, which targeted 1,672 households at eight mine sites in South-Kivu, the imbalances between men and women in the context of access to mineral resources, were analyzed (Kamundala and Mukasa, 2017). The third episode of field research involved 11 mine

sites in Ituri, during which 100 semi-structure interviews were conducted, including a section dedicated to women's involvement in ASM at Ituri (Kamundala, 2017). The fourth episode of fieldwork, conducted in South-Kivu, focused on women and mercury use in ASM.

The paper summarizes many of the findings gathered over these distinct research phases. It looks specifically at the power relations in the supply chain and governance issues, focusing on gender, before and after implementation of the 3TG formalization scheme. This analysis broadens understanding of the factors that have changed women's positions in ASM supply chains in eastern DRC.

In this paper, power and governance as well as the 'upgrading' of women's positions in 3TG supply chains are examined using a gender lens. It provides a framework for analyzing and assessing concerns with women in global value chains (Barrantes et al., 2003) and helps to articulate interactions between actors (Gereffi et al., 2005; Bolwig et al., 2010). The global value chain analysis also helps with identifying ways for women to change their positions throughout the 3TG supply chain in a context of formalization (Ponte, 2008).

## 2. Power and governance in supply chains: a gender perspective

Global Value Chain Analysis (GVCA) has increasingly become an important tool for analyzing the roles of actors, institutions and global material flows (Fold and Larsen, 2008). It focuses on governance, income distribution and power relations between actors who are involved in a given chain as well as explores the way actors are connected to the global market (Gereffi et al., 2005; Gereffi, 1994; Kaplinsky and Morris, 2001; Kaplinsky and Morris, 2002). The way actors participate in a value chain depends on two major factors. The first is the governance structure, which determines power relations and terms of participation under which actors operate in the chain as well as the distribution of resources and gains (Muradian and Pelulessy, 2005). The second is the external influences which, although outside of the direct chain, influence actors' behavior and decision-making (Eckhardt and Poletti, 2018; Gereffi, 1995). In the GVCA, the terms of participation are crucial in the sense that some actors can participate in the chain and remain marginalized or vulnerable (Bolwig et al., 2010). In the same vein, external influences such as beliefs, culture and gender norms, which are socially constructed, can influence power relations between actors (women and men), the division of labour, as well as actors' materials gains, vulnerabilities and risks (Bolwig et al., 2010; Tallontire et al., 2005; ILO, 2010). As Tallontire et al. (2007) explain, '...employment is embedded within the social and institutional context in which value chains operate' (p. 4). These external influences, to a certain extent, can be barriers to entry, or barriers to accessing activities that generate higher income within the chain (Kaplinsky and Morris, 2000). They can also undermine any initiatives that aim to improve women's position and ability to make strategic life choices (Kabeer, 1999; Laven et al., 2009).

Standards are a part of the institutional context in which a global value chain operates. They are linked to product quality, the environment, human rights and working conditions in the chain (Bolwig et al., 2010; Kaplinsky, 2010). Standards also consider how production and marketing processes are documented (such as those described in the *OECD Due Diligence Guidelines*, or in the blueprints of other mineral traceability and certification schemes), and are typically conceived by leading companies, governments (for example, the US Government in the case of the Dodd-Frank Act), multilateral organizations and civil society. The latter typically exert pressure on suppliers and companies to enhance the quality of products, improve work conditions and address environmental issues. This is because end consumers, who are mainly based in developed countries are increasingly demanding higher performance and ethical standards linked to work practices, the environment and human rights (Kaplinsky, 2010). In effect, by raising awareness and applying pressure on companies, donors and governments, consumers have become more influential in the design of value chains.

New standard setting, to a certain extent, presents an opportunity for small players, as they can improve their competitiveness and access

<sup>3</sup> The process through which minerals can be tracked, and verifiable provenance information from individual mine sites in eastern DRC can be provided.

<sup>4</sup> 'Certified' means that the minerals are linked to a reliable traceability scheme and that all taxes have been paid, in accordance with Congolese mining legislation.

<sup>5</sup> After standards around traceability and certification were implemented, the 3TG supply chain changed.

to the higher-end market if they comply with the requirements of standards. At the same time, more ambitious product standards can constitute an entry barrier for new actors as well as pose a challenge to existing actors should the costs of compliance be onerous. Inadvertently, in such a scenario, marginalization and/or exclusion of small actors in the value chain is possible. This happens when actors lack the ability to meet the requirements of a particular standard and regulations (Kaplinsky, 2010; Bolwig et al., 2010). The case of sourcing schemes in the eastern DRC examined here illustrates this more concretely.

In global value chains, issues related to poverty, vulnerability and risk are tackled following an ‘upgrading process’,<sup>6</sup> which is pursued with a view to ensuring that small or marginalized actors can participate in a beneficial way by acquiring capabilities and seize the economic opportunities offered by a chain within global economies (Bolwig et al., 2010; Gibbon and Ponte, 2005). To achieve this, Gereffi (2005) proposes three ways in which small actors can move upward in the value chain, the first being through providing opportunities for them to improve their techniques, knowledge and specialization in the production process (Gereffi, 2005, Gibson et al., 2004). Second, actors can be supported to meet market and/or supply chain standards (Kaplinsky and Morris, 2000). Finally, these initiatives could ensure that standards do not negatively impact local suppliers (Kaplinsky, 2010).

In addition to this, an ‘upgrading process’ considers the external influences described above, as they can undermine any initiative which aims to change power relations between actors and supply chain governance. This is where functional and inter-chain upgrading are necessary in terms of acquiring new functions that increase the skills content of activities and access to market information (Bolwig et al., 2010). Some argue this can only be achieved through government subsidy support to sustain participation of marginalized actors (Kaplinsky, 2010). Government intervention must emphasize setting policies which provide the same opportunities to both men and women.

Ponte (2008) points out that a GVCA focuses more on the vertical relationship between buyers and suppliers, with less attention placed on interactions between actors within the same segment of the supply chain. Notwithstanding this claim, the GVCA remains relevant to the case study below for three reasons. First, it helps to focus on interaction and competition between actors at the upstream section of 3TG chains which are shaped by internal institutions, such as the Congolese mining code and the country’s regulations, as well as external influences such as cultural beliefs or taboos around women entering the mine. Second, GVCA provides insights on the impact of standards brought about by formalization, in this case, women’s positions in 3TG chains. Third, it helps to identify strategies for enhancing women’s capabilities, with the aim of increasing their participation in mineral supply chains, in this case, those linked to 3TG in eastern DRC.

### 3. Power relations and gender in 3TG supply chains in eastern DRC

#### 3.1. Challenges, constraints and opportunities faced by women in ASM supply chains in eastern DRC before formalization

Historically, men have enjoyed advantages when it has come to accessing ASM in eastern DRC. This explains their prominence in the sector—both in terms of numbers and power. Men were at the forefront

<sup>6</sup> According to Humphrey and Schmitz (2002), cited by Bolwig et al. (2010), this entails the following: (i) Process upgrading (achieving more efficient production via reorganization); (ii) product upgrading (developing products with increased unit value); (iii) functional upgrading (increasing skill content); and (iv) inter-chain upgrading (applying competences acquired in one function to a different sector/chain).

of the mining rush in the early 1980s, following the liberalization of the artisanal mining sector initiated by the late president Mobutu. As a result, a large number of men left their homesteads in search of fortune at mine sites (De Faily, 2000; De Faily, 2001; Kelly et al., 2014; Perks, 2011). Custom played (and continues to play) an important role in marginalizing women’s participation, since social norms dictate that men can easily leave households, unlike women who have to stay with their children and have household responsibilities. The various economic crises and the disappearance of industrial mining in the 1990s furthermore accentuated the ASM rush, causing a considerable increase in artisanal mine exploitation (World Bank, 2008; Geenen, 2014; Kamundala, 2013b; Perks, 2011). Moreover, underground artisanal mining exploitation is characterized by harsh working conditions. It requires exceptional physical strength over large time periods and is therefore perceived in local areas as an activity reserved for men. Men are now present at all levels of the artisanal mining supply chain: they work as diggers, traders, intermediaries and mine owners (Geenen and Kamundala, 2009). Women are consequently underrepresented in the eastern DRC’s ASM industry as they make up approximately 20% of the workforce, as previously mentioned.

Women’s limited but nevertheless noticeable presence in the artisanal mining is due to the multiple economic crises that have shaken the Congolese economy since the 1980s. As a result of these crises, poverty is currently widespread and deprives many households of their means to safeguard themselves during times of financial uncertainty (PNUD 2017). This causes women who are dependent on the income of their husbands to engage in various economic activities, including artisanal mining, in order to meet the needs of their households. An advantage of doing so is that it provides some independency, as captured by the story of one woman interviewed in Lugushwa:

What influenced me to come to work in the artisanal mining, is that I got married when I was still young. My husband and me got nine children, unfortunately he died. When he died I was unable to take care of the children and my family in-law also rejected me. There was no other thing to do (...) that is why I decided to come to Lugushwa to start grinding gold stones. I have children who study, children who need health care, clothes; it is only here where I saw the possibilities to support them. <sup>7</sup>

In addition to the economic crises, women’s roles in ASM have been influenced by the massive displacement of populations that occurred in the eastern DRC during the Congolese civil wars. Both men and women were forced to leave their places of origin, thus abandoning their fields, livestock and trading businesses (World Bank, 2015) in search of shelter. This is captured succinctly in an extract from the life story of ‘Interviewee #2’ from Mahagi, who is originally from Ituri but currently working in the Pluto Mine in Mongbwalu/Ituri:

My husband was a farmer. When we got our first girl, he left me at Mahagi and came here at Pluto, for fear of being enrolled in the armed groups. Then called me. Once here, I saw how women managed by carrying stones in the mining sites. I asked the permission to my husband to do the same, he allowed it (...)” <sup>8</sup>

As most of the mining areas were controlled either by armed groups or government forces, they were comparably safer, which attracted large numbers of migrating populations. The thousands of women who found refuge in these places have therefore had no choice but to engage in artisanal mining. Moreover, the rapid growth of artisanal mining has created a demand for a larger labour force in the areas of transportation, grinding and washing of minerals – activities which are accessible to women. By increasing their participation in these activities, women began to populate mining areas little by little.

<sup>7</sup> ‘Interviewee #1’, Lugushwa, 2 February 2018. Interview findings reported in World Bank (2015) echo a similar story of marginal improvement resulting from economic independence.

<sup>8</sup> ‘Interviewee #2’, Mongbwalu, 31 August 2016.

Some women now working and living in mining areas who hail from elsewhere prefer mining to other professions since it provides them with the opportunity to accumulate wealth. This was captured during an interview conducted in Misisi:

I came to sell fuel to Misisi and directly I was attracted by the gold mining business. That is how I bought a grinder machine, in order to get more money and to stay here.<sup>9</sup>

Unlike men, women's presence in artisanal mining is the subject of many myths and stereotypes, rooted in the customs and cultural practices of eastern DRC's societies. These are grounded in the belief that the home is where women belong, they should only deal with housework, and play at best a secondary role in economic activities. In artisanal mine supply chains, women are relegated to less profitable jobs because of these beliefs and taboos, which, in eastern DRC, limit their participation in 3TG operations. They are also responsible for creating the inequalities in income distribution seen across the sector. For example, it was observed during the course of fieldwork that women are involved in the transportation of gold or sand, in stone grinding, sand washing and other various processes of mineral treatment. In some rare exceptions, women were seen participating in the small businesses that handle mineral waste (e.g. Maman Bizalu in Kamituga) or working as small intermediary mineral traders (e.g. maman shashuleur in Nyabibwe). [Field research on the short-term impacts of traceability and certification initiatives on miners in Nyabibwe mine site, February 2015]

A closer examination of women's positions in the mineral supply chain reveals that they are paid less compared to men. In Kamituga (South Kivu), for example, a woman crushing at least 15 kgs of stones will earn US\$3, whereas a man will earn US\$4 or US\$5 for undertaking the same work. A woman carrying more than 40 kgs will receive US \$2.50–\$3 whereas a man can earn US\$3–\$3.5. Similarly, in Rubaya (North Kivu), carrying 50 kg over a 2 km distance nets a woman with an average of US\$5 whereas for doing the same work a man can earn around US\$6. In Mongbwalu (Ituri), a woman sorting up to 250 kg of pebbles can earn up to US\$25, whereas a man can earn around US\$30. Based on this information, a woman engaged in ASM can earn between US\$40 and US\$120 per month, far less than the average male worker, who can earn US\$337 per month working with gold or US\$187 per month for 3Ts (Kamundala and Mukasa, 2017). Consequently, women-led mining households are more vulnerable economically than those led by men. In a recent examination of households in and around mining sites in South Kivu, Kamundala and Mukasa (2017) found that 80.5%<sup>10</sup> of female-headed mining households surveyed were poor, compared to only 68.97% of households which headed by men (Kamundala and Mukasa, 2017). In sum, before formalization, the position of women in the eastern DRC's ASM sector was quite precarious due to the limited opportunities they had to occupy well-paid positions in the supply chain. They were mostly confined to less-remunerable work positions.

### 3.2. Formalization: a dynamic that changed women's positions in in eastern DRC's ASM sector

As explained, in eastern DRC, the leitmotiv of ASM formalization extends to removing armed groups from mine supply chain. The DRC Government additionally sees this process as an opportunity to organize ASM in a manner which puts it in a position to legally integrate the artisanal mining sector within the country's economy. It pursues this goal by identifying AEZs for miners to work, and by encouraging these individuals to organize themselves into cooperatives. Through this process, the government also aims to prevent corruption in ASM by exerting greater control over mineral production and collecting more tax from operations (RDC 2010, Kamundala, 2013b, Geenen, 2012;

Kamundala, 2012; UN, 2001;2013). Although formalization involves completion of several steps, two of major components of what this process has entailed in eastern DRC are examined here: 1) implementation of the traceability system, and 2) the organization of miners into co-operatives. Each is examined in turn.

The first, implementation of the traceability system, is the framework for due diligence (Global Witness, 2011) that is adopted at a site, which typically has the look provided in Fig. 1. It entails putting in place a set of procedures, with the objective of identifying the origin of extracted ores as well as the actors involved in extraction and marketing – from the pit to the point of export. In eastern DRC the traceability scheme linked to ores begins with the International Tin Association (ITRI), specifically its Tin Supply Chain Initiative (iTSCi), an ASM formalization system first launched in 2010 at the Kalimbi mine site (South Kivu) for the 3Ts. The iTSCi scheme has since been implemented at numerous mine sites in eastern DRC, but not the entire country. In South Kivu, for instance, only 17.5%<sup>11</sup> of mine sites are certified under this traceability system. Initially, an artisanal mine site is studied carefully to determine whether it is in a position to pursue certification. This happens following an initial inspection which uncovers details about the status of the site (i.e., whether it is covered by a legal title, of armed groups are present, if child labour persists, and if there are pregnant women working at the mine site). If it is determined that any of these elements would prevent certification, the mine is marked as illegitimate through a ministerial decree and tagged with a red flag. If the inspection yields no objections, the site receives a green flag, and becomes eligible for the traceability scheme (DRC, 2009).

The traceability system demands that all minerals are packaged, tagged and registered by agents of the mining administration. Thereafter it is transported from the mine site to the trader who is usually based at a larger city close by. At this location, agents committed to traceability confirm the information supplied about the weight of the minerals and verify the identity of the digger who extracted them. At the merchant's shop the minerals are subsequently processed, repacked and sealed with a new label, consisting of a new card which provides information on the diggers, the merchant as well as the *comptoir* it is destined for. Once it reaches the *comptoir*, the minerals are processed once more and packed in barrels in preparation for export. At this level, all information about the package's weight, the diggers and counter traders involved in delivering it to this point, and its final destination are thoroughly documented. A certificate serves as proof that the ores have been recorded from their extraction point to their final point of export, following a traceability system that complies with the *OECD Due Diligence Guidelines* (OECD, 2011; RDC, 2009).

As can be seen in Fig. 2, the traceability system diligently records the path of the minerals by providing and verifying the relevant information along the supply chain. But it also excludes some actors from the supply chain, such as the small-scale traders who buy small quantities of minerals, a category of actors that includes women (Bashwira, 2017). To the detriment of these traders, there are restrictions related to traceability that forbid the labeling of ores immediately after they come out of the ground. This disadvantages the women who collect stones at sites directly, since the extraction wells are not at the same place where traders can have their products labeled. Some have thus been forced to abandon their activity as small-scale traders at mine sites. Consequently, this traceability has been considered as a source of adverse external shock for a certain category of actors within the supply chain to which women belong (Kiloshho 2018).

The second component of formalization process is, as indicated, the organizing of miners into co-operatives. This speaks to the approach being taken by the DRC Government, which is attempting to improve control of artisanal miners and their production. These cooperatives have the look of being the products of a participatory, bottom-up

<sup>9</sup> Interviewee #3', Misisi, 20 March 2015.

<sup>10</sup> In DRC, the poverty line is US\$1.9/day.

<sup>11</sup> Statistics extracted from South Kivu Mining Division Report, 2018.

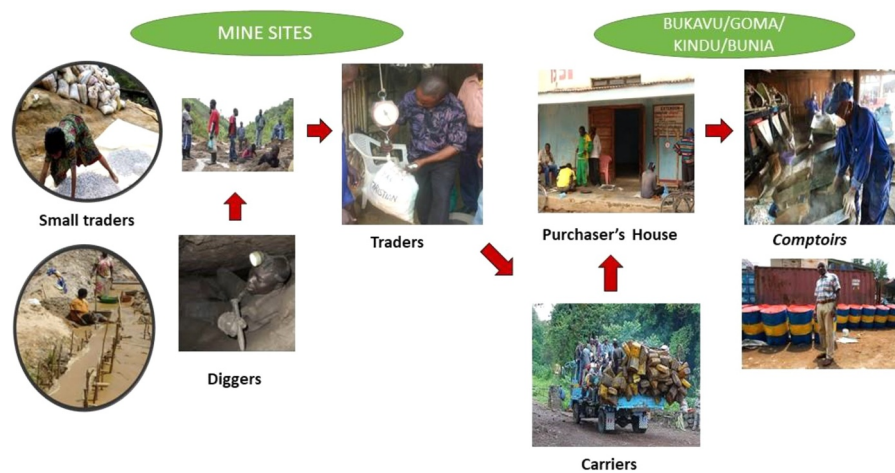


Fig. 1. Typical 3TG supply chain schema before traceability system.



Fig. 2. Typical 3TG supply chain schema after implementation of the traceability system.

strategy which, it is believed, is a key to a much better governed ASM sector (Bahala, 2015; Bashizi and Geenen, 2015). However, the specific way in which ASM cooperatives were created in eastern DRC has been problematic: here, associations were granted mandatory state powers, which has interfered with the freedom of association and therefore, is in violation of the provisions that are statutory in Congolese mining legislation (Lwango, 2014). In addition, the numerous sensitization campaigns carried out by the Congolese authorities and other partners have raised diggers' expectations. Specifically, these campaigns have sought to showcase miners' arduous working conditions and poor socio-economic statuses but have also had the effect that the cooperative will resolve their difficulties (Kamundala, 2017). There is also growing concern about how these cooperatives have created opportunities for elite groups striving to capture these valuable structures (Bashizi and Geenen, 2015). Several elites have already used their connections at the provincial level and in the country capital of Kinshasa to establish mining cooperatives, without actually being present on the ground.

Not surprisingly, these cooperatives often do not exhibit the democratic principles which the law intends for them to have (De Haan and Geenen, 2015; Bahala, 2015). This is for instance the case with several mining cooperatives in Mongbwalu, Ituri. Here, the presidents of diggers' associations have taken advantage of their legal obligation to create cooperatives by transforming their associative structures into mining cooperatives, while simultaneously maintaining the organizational dynamics of the earlier associations (Kamundala, 2017). For cooperatives that are well-organized, however, members have realized

benefits (for example, COPERAMA in Rubaya, North Kivu). But overall, women struggle to navigate the administrative structures of these cooperatives, unable to secure a leadership position because in most cases they are not board members. Most ASM cooperatives found in Eastern DRC also face financial constraints: in their current orientation, they are not well adapted to bundle their resources and cultivate their full potential.

Before the formalization process started, artisanal and small scale mining was regulated by the Mining Code of 2002<sup>12</sup> and the Mining Regulations of 2003<sup>13</sup>. Both, however, are virtually silent on the roles and positions of women in artisanal mining. Even though the new Mining Code of 2018<sup>14</sup> stipulates that any person of Congolese nationality may undertake artisanal mining activities, in practice it remains a male-dominated field. The new Mining Code has only one concrete reference to female participation, namely in its Article 5, which stipulates that: pregnant women are not allowed to work in mining sites. This is in accordance with previous legal texts such as a 2010 Ministerial Decree calling for the exclusion of pregnant and lactating women from mining sites<sup>15</sup>

<sup>12</sup> Loi n° 007/2002 du 11 juillet 2002 portant Code minier

<sup>13</sup> Décret n°038/2003 du 26 Mars 2003 portant Règlement Minier

<sup>14</sup> Loi n°18/001 du 09 mars 2018 modifiant et complétant la Loi n° 007/2002 du 11 juillet 2002 portant Code minier

<sup>15</sup> Arrêté n° 206/CAB/. MIN/FINANCES/2010 du 15 octobre 2010 portant Manuel des procédures de traçabilité des produits miniers, de l'extraction à

However, the 2018 Mining Code only requires that workers should belong to a mining cooperative.<sup>16</sup> The law now mandates that diggers band together to form cooperatives, stemming from the belief that this will help organize the sector and is a starting point for its formalization. The move seemed justified: in 2011, former president Joseph Kabila made cooperative formation a precondition for lifting a ban on mining in eastern DRC (Geenen et al., 2011). Reemphasizing this point, the new law provides an opportunity for women to gain a better standing in the mining industry and to improve their positions within the supply chains for 3TG minerals.

Being a member of a mining cooperative simply means that one is a part of a group of individuals with shared objectives and rules based on the principle of democracy. In their present configurations, however, the mining cooperatives of eastern DRC are far from being well-organized and structured (Bahala, 2015; De Haan, 2015; De Haan and Geenen, 2015). In addition, women are less represented in these cooperatives and often cannot participate in decision-making processes (Kamundala, 2017). This has led some women to commit to forming their own cooperatives. But while the Lutonde case provides valuable inspiration, it is still the only women's mining cooperative in 3TG. It nevertheless epitomizes the motivation and desire of women in eastern DRC, specifically their drive to take advantage of new opportunities in ASM and their willingness to position themselves to derive benefits from activities throughout the supply chain.

Kibe is a city located 22 km south of Kamituga and about 200 km from the city of Bukavu, the capital of South Kivu. Apart from engaging in agricultural activities, its inhabitants exploit gold from the Zalya River and other quarries. The gold attracts many men and women who are victims of discrimination at mine sites. Women exploiting gold along the Zalya River have organized themselves in ways to challenge this discrimination and in the process, better position themselves in the gold value chain in Kibe. They have founded a women's mining cooperative called LUTONDE. One of the leaders explained in an interview the reasons behind its establishment:

[I am the] initiator of the Lutonde cooperative. Lutonde means “star” in Kilega. The idea of creating this cooperative came from the fact that we noticed some discriminations of which we were victims in our workplace. The first discrimination was about the job. We were only in charge of fetching water from wells and transporting gold-stones. The second discrimination came with the creation of COMIBAZA<sup>17</sup> cooperative where the Board of Direction was only made of men. Due to all these discriminations, we decided to create our own cooperative of women, with the objective to work differently from the cooperative of men. Currently we have more than 30 women and 9 women in the Board of Direction. It is true that we do not have much money to allow us work well, but we are trying to organize ourselves little by little. Currently we have \$ 500 in our cash box. This amount represents our shares, it is still insignificant but at least we have a cooperative of our own, where we take our own decisions.<sup>18</sup>

The view that women are unable to take initiatives in important sectors such as mining is not uncommon. However, it is evident that, just like Interviewee #4 of Lutonde, many Congolese women involved in artisanal mining have the capacity to positively change the mining landscape. This point was made nearly two decades ago by Hinton et al. (2003), who explained that ‘Women have demonstrated ability to drive positive change [in ASM]’ (p. 26). In short, forming a cooperative certainly provides an opportunity for women to improve their position within a given mineral supply chain but much still needs to be accomplished for these women to realize fully these benefits. It is crucial

to note that in eastern DRC, cooperatives tend to operate on sections of concessions demarcated to industrial mining companies. This stems from the fact that the decrees of approval granted to cooperatives often do not indicate the specific areas where the work should be carried out. As a result, cooperatives that are active in areas of industrial mining companies continuously run the risk of being expelled by the holders of the mining titles or site-owners.

To this end, priority should be given to developing additional AEZs, in order to ensure that cooperatives have property rights in the areas where they operate. These cooperatives, however, do in their current configurations – including those headed by women – face funding challenges and organizational deficits. Often, these bodies are considered non-governmental organizations by their founders, who hope to channel funding from different donors, as opposed to setting up a real business cooperative. Education is urgently needed here to equip members – especially women – with the necessary administrative, financial and technical knowledge to be self-sufficient.

The experiences the Expertise Centre on Mining Governance of the Université Catholique de Bukavu (CEGEMI/UCB) has had with capacity-building in the Walungu, Mwenga and Kalehe cooperatives in South Kivu,<sup>19</sup> provides a much-needed source of inspiration in this area. The work being undertaken here emphasizes such training, as well as developing solutions which emphasize more than just disengaging women from the artisanal mining sector on the grounds that they could flourish better elsewhere. This is because such approaches usually target just a very small group of mining women who only benefit temporarily from this intervention.

In eastern DRC, several projects of this nature have been implemented to support women. For example, In Mambasa` (Ituri), IMPACT, a Canadian NGO, supports women who are mining, with a view to pushing them into alternative income generating activities. Similar projects were initiated by the NGO ALEFEM in Kamituga which seek to lure women away from ASM by giving them small sums of money to start commercial activities far from the sites where they work. These interventions, however, only appear to improve the socio-economic wellbeing of women in the short-term because they were not fully trained on how to manage their loans.<sup>20</sup> However, current developments provide reason for optimism. An example in this regard is national initiative that yielded to establishment of RENAFEM, the country's national network of women miners, in 2015. Although RENAFEM has not yet secured funding for any ASM project, it has become a powerful voice for women's rights in the sector at the national and international level. This platform has provided inspiration for tens of thousands of women in the DRC to maintain their presence in the mining industry. This due to women recognizing that there are valuable opportunities for them in this sector. Policies should not be oriented toward excluding women from the ASM sector, but designed with the objective of improving their circumstances, with emphasis on creating opportunities for them in other areas of the supply chain and improving their socio-economic well-being.

#### 4. Conclusion

The purpose of this article was to identify the economic opportunities which formalization of ASM linked to 3TG has created for women in eastern DRC. Here, formalization through traceability and the establishment of cooperatives have influenced the position of women in

(footnote continued)

the exportation

<sup>16</sup> Art. 111,112 al.1<sup>er</sup>, 113, 114 of Règlement minier 2018

<sup>17</sup> Coopérative Minière de bassin de Zalya.

<sup>18</sup> Interviewee #4', Kamituga, April 2018.

<sup>19</sup> In January 2018, the CEGEMI/UCB and IPIS received funding from the European Partnership for Responsible Minerals (EPRM) to implement a project entitled ‘Advancing incident reporting and community participation in responsible sourcing through cooperative and CSO capacity enhancement in Eastern DR Congo's 3TG sector’. In this project, CEGEMI is in charge of capacity building in five cooperatives in Walungu, Mwenga and Kalehe.

<sup>20</sup> Interview with the Director of ALEFEM in Kamituga, April 2018

the artisanal mining sector. On the one hand, the traceability system has made it possible to exclude certain positions, including those occupied by women in mineral supply chains. On the other hand, making it mandatory for miners to band together in associations can create opportunities for women to organize themselves as well, in turn improving their positions in mineral supply chains. This is aptly demonstrated in this article by the experiences shared from eastern DRC.

However, for the region's women to fully benefit from formalized 3TG supply chains, more change will be needed. For example, stronger support for women's organizations in the mines would allow women to acquire property rights at their workspaces, a development would help define or delimit the range of privileges granted to women in terms of mineral assets. In addition, and in line with the 'upgrading process' linked to GVCA, it is necessary to invest more in skilling and enhancing the capabilities of women with a view to empowering them to initiate the establishment of their own mining cooperatives, as well as to position them to operate these cooperatives successfully and effectively. In doing so, 'functional upgrading', as defined by Humphrey and Schmitz (2002), will be achieved because women's skills will be enhanced considerably. As a result, these women will be able not only improve their production and organizational techniques, but will also improve their access to relevant information on the Mining Code, which may help to mitigate discrimination at ASM sites.

### Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.exis.2020.03.001.

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