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Title: Emerging practice in responsible supply chain management: Closed-pipe supply chain of conflict-free minerals from the Democratic Republic of Congo

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Abstract:

Minerals originated from eastern Democratic Republic of Congo (DRC) are blamed for financing violent conflict in the area over the past decade and have been called conflict minerals. They vividly demonstrate a key human rights issue facing responsible supply chain management. The conflict minerals issue has led to a significant shift in responsible supply chain management in two ways: extending producer responsibility to respect human rights in the total supply chain through establishing traceability and transparency; and developing legally binding supply chain responsibility.

This paper examines an emerging effort to source conflict-free minerals using closed-pipe supply chain in the DRC as a new strategy to respond to the above paradigm shift. By exploring whether this new strategy can contribute to conflict prevention in the DRC, this paper argues that the closed-pipe supply chain allows building long-term relationship with various stakeholders and has the potential to transform socio-economic structures in the producing communities, thereby leading to peacebuilding in the long run.

Key words:

conflict minerals, responsible supply chain management, closed-pipe supply chain, conflict prevention, Democratic Republic of Congo

Introduction

In recent years, industries have been increasingly scrutinised for human rights violation in their extensive supply chains, such as labour conditions and the use of child labour, mirroring the global expansion of business operations and growing consumer activism. Human rights issues have been alerted as one of the top five strategic management risks (Shtender-Auerbach 2010). Amongst various human rights concerns, conflict minerals including tantalum (found in coltan), tin (cassiterite), tungsten and gold that are originated from the Democratic Republic of Congo (DRC) is the one which poses a significant challenge for responsible supply chain management to a wide array of industries.

Electronics industries were the first to be blamed for using conflict minerals and questioned their corporate responsibility by civil society organisations. This was because the rapid development and spread of small-size, high-tech equipment such as mobile phones during the 1990s had created supply shortages of tantalum as one of the essential ingredients for those apparatuses. The supply shortages encouraged the exploitation of tantalum in eastern DRC during the second Congolese war between 1998 and 2003. Electronics industries started responding to the conflict minerals issue as early as in 2003 by commissioning a study on their corporate social responsibility

(CSR) as an end user of tantalum.¹

Since then, electronics industries have initiated various supply chain management programmes individually and/or collectively as they continue to use a large portion of these minerals in their products. To illustrate this point, they use more than 70 percent of tantalum supply in making capacitors for electronics (Polinares 2012). Their supply chain management programmes are mainly based on voluntary codes of conduct and attempt to ensure the supply chain responsibility for the first-tier suppliers. For example, the Electronics Industry Citizenship Coalition (EICC), an industry organisation of electronics industry companies, developed a standardised code of conduct, the Electronics Industry Code of Conduct (Version 1.0), in 2004 in an effort to improve social, economic and environmental conditions in their global electronics supply chains.

More recently, increasing awareness on how these minerals finance and sustain the protracted armed conflict in the eastern DRC, combined with a newly established UN business and human rights framework, initiated a paradigm shift in responsible supply chain management. This change in responsible supply chain management displays two aspects, namely enlarging supply chain responsibility to the total supply chain and making supply chain responsibility legally binding. Nevertheless, this shift poses a significant challenge of tracking and influencing the supply chain not only because of a complex web of global supply chains but also because of constant changes occurring in supply chains.

The above challenge has to be met with a new strategy, and two responsible supply

¹ The Global e-Sustainability Initiative (GeSI), an electronics industry association, commissioned a study resulting in Hayes and Burge (2003).

chain management programmes, using a closed-pipe supply chain, have been developed to source conflict-free minerals from the DRC. This paper aims at examining these emerging responsible supply chain practices from peacebuilding perspectives. It will do so by reviewing available documentation and media sources on the two existing closed-pipe supply chain initiatives, the Solutions for Hope Project (SfH) to source tantalum and the Conflict-Free Tin Initiative (CFTI) for tin as well as informal conversations with representatives from electronics companies. The paper argues that the closed-pipe supply chain has a potential to build long-term relationships with various stakeholders, which could transform the structures in producer communities. The transformation, such as improving labour and environmental standards and livelihood and disseminating required knowledge and expertise on responsible production, could contribute to peacebuilding and conflict prevention. The next section will explain the background of conflict minerals briefly, followed by the introduction of recent changes in supply chain management responsibility, generated chiefly by the Dodd-Frank Wall Street Reform and Consumer Protection Act. The subsequent section will then look at the two closed-pipe supply chain initiatives, leading to a discussion and conclusions of this paper.

Conflict minerals

The eastern DRC is endowed with essential minerals such as tantalum, tin, tungsten and gold that have wide ranging applications, especially in mobile, high-tech goods. The demand for these “technology minerals” has been growing since the 1990s although it can be fluctuated sharply from technological advancement in an industry and cause boom and bust (Buijs and Sievers 2012). Nonetheless, the demand is expected to remain

high. At the same time, the eastern provinces of the DRC, South Kivu and North Kivu in particular, have been plagued by armed conflict and insecurity since 1996, generating one of the world's worst humanitarian crises. The crisis has claimed more than five million people's lives and caused approximately 2.6 million Internally Displaced Persons (IDPs) as well as 450,000 Congolese refugees (UNHCR 2014). In addition, the widespread sexual violence in the area has attracted a label of the "rape capital of the world" from the former UN Special Representative on Sexual Violence in Conflict.

In order to understand the relationship between the production and trade of mineral resources and armed conflict in the eastern DRC, numerous studies have been conducted. A series of investigations and reports made by the UN Panel of Experts between 2001 and 2003² was notable in highlighting the role of business in fuelling the DRC conflict. They were the first to publish a list of companies **that** were involved in the illegal exploitation of natural resources in the DRC. These investigations were followed by a number of other research initiatives by the UN Group of Experts, the Initiative for Central Africa (INICA), the Department for International Development (DFID) and Resource Consulting Services, to name some.³ In addition, there has been a growth of literature on the role of business in conflict since the 1990s, reflecting the globalised operations and the increasing size of corporations (Haufler 2003).

These examinations, supported by the prominent "resource curse" hypothesis, suggest that the armed conflict in the eastern DRC is fuelled and sustained by the profits from the mineral resources in the area. According to Le Billon (2003, p. 216), the control,

² Report of the Panel of Experts on the Illegal Exploitation of Natural Resources and Other Forms of Wealth of the Democratic Republic of the Congo.

³ See DFID 2007; INICA 2007; Garrett and Mitchell 2009; UNSC 2008.

exploitation, trade, taxation, or protection of “conflict resources” contribute to armed conflict or benefit from the context of armed conflict. As tantalum, tin, tungsten and gold extracted and traded from the conflict-affected eastern DRC partly finance the armed groups operating in the area, these mineral resources have been discussed as “conflict minerals.” Concerns for the “conflict minerals” have grown significantly owing to the growing global demand for these “technology minerals.” However, the link between the armed conflict and mineral resources is much more complex and appears to be interconnected with underlying socioeconomic and political issues in the area, often through ethnicity, citizenship and land ownership (Taka 2010; 2011). Furthermore, these minerals are mostly extracted from informal and unregulated artisanal mining and traded in the informal economy, largely due to economic collapse, poverty, lack of infrastructures and the weak governance capacity of the DRC state (Taka 2011).

Given increased awareness and understanding of the “conflict minerals” issue, NGOs including Global Witness and the Enough Project have been advocating the cause of the DRC conflict and calling for action by governments and mineral users such as electronics companies. While several frameworks already exist to provide guidance for global companies operating in conflict-prone and/or weak governance states, including the OECD Risk Awareness Tool for Multinational Enterprises in Weak Governance Zones (OECD 2006), the OECD Guidelines for Multinational Enterprises (OECD 2011a) and the Voluntary Principles on Security and Human Rights⁴, there has been an intensifying effort to address the “conflict minerals” issue. The following section introduces such shift in supply chain management.

⁴ <http://www.voluntaryprinciples.org/principles/introduction>

Paradigm shift in supply chain management

The “conflict minerals” issue illustrates one of the most challenges for the role of business in conflict and human rights violation which became a global policy agenda. In response to the growing need for guidance to address business impacts on human rights, the UN business and human rights framework was formulated by John Ruggie, Special Representative of the UN Secretary-General, in 2008.

The framework comprises three core principles of “the State duty to protect against human rights abuses by third parties, including business, the corporate social responsibility to respect human rights, and the need for more effective access to remedies” (Ruggie 2008, P. 4). In 2011, the United Nations Human Rights Council endorsed a new set of Guiding Principles for Business and Human Rights (UNHRC 2011), which outlines how to implement the above UN framework to ‘Protect, Respect and Remedy’ (UN Office at Geneva 2011). The second principle of the framework states that the corporate responsibility to respect human rights is the “basic expectation society has of business,” which requires due diligence (Ruggie 2008, p. 5). The framework defines due diligence as “a process whereby companies not only ensure compliance with national laws but also manage the risk of human rights harm with a view to avoiding it” and hence strive to “do no harm” (Ruggie 2008, p. 9).

An important implication of this development is that companies can be associated with human rights abuses within their supply chains even when they are not operating in the context of armed conflict or weak governance directly. It reinforces global supply chain management as a key strategic issue to overcome reputational risk. Therefore, human

rights due diligence became a key concept of the international movement for corporate accountability and provides a cornerstone in efforts to address conflict minerals in global supply chain. Achieving traceability of minerals is critical in these efforts; however it has proved extremely difficult because minerals supply chain “may span thousands of miles across the globe, involve numerous suppliers, retailers, and consumers, and be underpinned by multinational transportation and telecommunication networks” (Nagurney 2006, p. 3). In particular, the upstream supply chain of minerals in the eastern DRC poses a considerable challenge to establish traceability and apply due diligence processes owing to its extensive and complex networks, comprising artisanal mining and informal economy. According to a study conducted in 2010 (Resolve) to test whether it is possible to trace back the origin of conflict minerals from eleven electronics companies, only a limited number of cases could trace minerals back to the mines of origin. In some cases, the study found thirteen tiers between the producer and the mine. The study identified the issues of lack of supplier response, confidentiality and inadequate information as obstacles to achieving traceability.

Despite the complexity of establishing traceability in the mineral supply chain, applying human rights due diligence became a requirement when the Dodd-Frank Wall Street Reform and Consumer Protection Act (the Dodd-Frank Act hereafter), containing a conflict minerals provision in Section 1502, was enacted in the US in July 2010 (SEC 2010). The Securities and Exchanges Commission (SEC) finalised the rules of the provision in August 2012 after revising the rules proposed in 2010 which had been criticised for being extremely complex and vague in terms of the scope of the requirements and audit standards (KPGM 2011, p. 5). While the SEC rules does not

forbid purchasing of conflict minerals, it obliges at least 6,000 publicly traded companies in the U.S. to verify whether their products contain tantalum, tin, tungsten, gold or their derivatives originating from the DRC or its neighbouring countries (SEC 2012). In case the products include minerals from the area, companies must trace the origin of minerals in their products, perform supply chain due diligence on their supply chain and publish reports. The provision will affect an enormous number of suppliers globally as similar legislation is also underway in the EU and others.

Given the challenge of purchasing minerals without violating human rights or contributing to armed conflict, the Organisation for Economic Co-operation and Development (OECD) developed the “OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas” (OECD 2011b) (hereinafter the OECD Guidance). The OECD Guidance takes into consideration the complex operating environments in the eastern DRC and defines due diligence as:

“an on-going, proactive and reactive process through which companies can ensure that they respect human rights and do not contribute to conflict” (OECD 2011b, p. 13).

The OECD has also provided a five-step framework for risk-based due diligence in the mineral supply chain as follows:

- Establish strong company management systems;
- Identify and assess risk in the supply chain;
- Design and implement a strategy to respond to identified risks;

- Carry out independent third-party audit of supply chain due diligence at identified points in the supply chain; and
- Report on supply chain due diligence (OECD 2011b, p. 17-19).

Although the OECD Guidance does not explain exactly how the due diligence process can be carried out (KPGM 2011, p. 7), it has been accepted as the international standard and is expected to help companies comply with the Dodd-Frank Act under Section 1502 in establishing a process to exercise due diligence and generating the information for disclosure.

Furthermore, the Congolese government introduced legislation in 2011 to require companies to perform supply chain due diligence in line with the OECD Guidance and the UN Security Council Resolution 1952 (2010), which also urges to exercise due diligence when operating in the tantalum, tin, tungsten or gold mining sectors (Government of Democratic Republic of Congo 2011). The International Conference on the Great Lakes Region (ICGLR), a regional body, also made the OECD Guidance requirement of its Regional Certification Mechanism (RCM) (ICGLR n.d.).

The emerging human rights due diligence approach, deriving from the business and human rights thinking, has created a fundamental change in supply chain management of conflict minerals in two ways. Firstly, performing human rights due diligence in minerals supply chain means extending producer responsibility to an entire supply chain, covering the very upstream supply chain at the extraction stage of raw materials. Secondly, the development of legislation such as the Dodd-Frank Act has made supply chain management legally binding, signalling a departure from the voluntary supply

chain management through codes of conduct.

At this point, it is worthwhile to reflect on the evolution of practical application and theory building about responsible supply chain management in the context of globalisation that will elucidate some opportunities and challenges. To begin with, supply chain is defined as: it “encompasses all activities associated with the flow and transformation of goods from raw materials’ stage (extraction), through to the end user, as well as the associated information flows” (Handfield and Nichols 1999, p. 2). It is also called the “logistics network” and is “a complex network of facilities dispersed over a large geography and in many cases, all over the globe” (Simchi-Levi et al. 2004, p. 4).

Supply chain management, therefore, refers to “a set of approaches used to efficiently integrate suppliers, manufacturers, warehouses, and stores so that merchandise is produced and distributed at the right quantities, to the right locations, and at the right time in order to minimize systemwide costs while satisfying service-level requirements” (Simchi-Levi et al. 2004, p. 2). It is about being efficient and cost-effective to achieve a “sustainable competitive advantage” (Handfield and Nichols 1999, p. 2). In the context of globalisation, successful supply chain management entails constant moving between producers to adjust to changes in “relative costs, trade preference (quotas and tariffs) and political conditions” (Chapman 2004,P. 11). It, therefore, hinders creating permanent relationships and custom built factories.

In contrast, responsible supply chain management integrates responsibility in its approach and is considered in terms of sustainability management; hence, the terms

responsible supply chain management and sustainable supply chain management are often used interchangeably (Szegedi and Kerekes 2012, p. 69). This means that the supply chain management has become a core part of CSR strategies and policies to address challenges of identifying social and environmental issues at different stages of supply chains, resulting in the development of various codes of conduct, standards and guidelines (Opijnen and Oldenziel 2010, p. 13).

Regarding the definition of responsible supply chain management, there is no single definition. The UN Global Compact (UNGC) defines supply chain sustainability as (UNGC and BSR 2010, p. 5):

“the management of environmental, social and economic impacts and the encouragement of good governance practices, throughout the lifecycles of goods and services. The objective of supply chain sustainability is to create, protect and grow long-term environmental, social and economic value for all stakeholders involved in bringing products and services to market.”

The International Chamber of Commerce (ICC) (ICC 2007, p. 2) adds an explanation of the process and impact of the responsible supply chain management as follows:

“Supply chain responsibility, also referred to as responsible sourcing, can be broadly defined as a voluntary commitment by companies to manage their relationships with suppliers in a responsible way. As a result of their purchasing activities, companies may have some opportunities to influence constructively their suppliers’ social and environmental performance. This can be done using several incentives, including information and training, as well as audits of

suppliers' practices. Whatever mechanism is used, the most effective way to achieve sustained improvement over time is through the development of a long-term collaborative relation between corporate buyers and their suppliers, through which suppliers can internalize change by participating in the shaping of social and environmental performance objectives, based on their own perception of their business capacity and needs.”

Both definitions refer to and emphasise on the long-term influence enabled by supply chain relations. Such influence is acknowledged in an executive's comment (UNGC 2010, p. 15): “the purchasing power of a corporation can become a unique driver for bringing about positive change in society.” While the ICC recognises the value of having a long-term relation in producing sustained improvements in social and environmental impacts, it is probably not realistic for companies to establish such long-term relationships with their suppliers because of the aforementioned flexibility required for being efficient and cost-effective (Handfield and Nichols 1999; Chapman 2004). Chapman (2004, p. 11) points out that this frequent shifting undermines the efforts to improve labour and environmental standards by producers in developing countries and to monitor ethical standards by purchasing companies. From purchasing companies' perspective, they have limited influence over their suppliers due to the temporary nature of the relationship with their suppliers (Opijnen and Oldenziel 2010, p. 35-37). In general, companies' influence over their suppliers beyond the first tier is considered to be unrealistic (Thorsen and Jeppesen 2011).

As to the position of producers in developing countries, their likelihood to influence sustainability performance goals can be rather limited unlike the above statement by the

ICC. Ras and Vermeulen (2009) caution the danger of approaches to improve poor sustainable policies and practices in developing countries because value systems of the industrialised world are often imposed on developing countries by business-to-business standards from the business on the demand side to the supply side.

A study on responsible supply chain management (Thorsen and Jeppesen 2011) classified individual codes of conduct as the 1st generation approach to responsible supply chain management and labelled shared codes of conduct for an entire industry or a code established through multi-stakeholder processes as the 2nd generation. While both approaches aspire to be fair, transparent, accountable and independently validated, the study exposes some limitations of these approaches. In general, it is difficult to measure and understand the impact of these codes of conduct especially when suppliers may be imposed multiple codes of conduct from different buying companies. More importantly, the study identifies some possible contradictions between conventional supply chain management criteria, including price, quality, delivery time and flexibility, and responsible supply chain management standards on human rights, the environment and anti-corruption standards and so forth. It also considers challenges to incorporate all human rights concerns in codes of conduct.

Given challenges and limitations confronting the existing responsible supply chain management practices, the study suggests a third generation responsible supply chain management mechanism, “CSR risk free sourcing and investment zones” in a demarcated territory (Thorsen and Jeppesen 2011, p. 9). The proposed mechanism is inclusive of all suppliers and sub-suppliers in the specified area as a sustainable solution to CSR risk within the supply chain. Based on the commitment to invest in and source

from the designated area, companies can use their purchasing power to influence local state authorities in creating the zone and fulfilling their duty to enforce the legislation. For the mechanism to be effective, the local state authorities need to become able to perform monitoring and enforcement appropriately through capacity building.

Closed-pipe supply chain as a new strategy

The paradigm shift in supply chain management instigated from the human rights due diligence requirement, discussed in the above section, enforced the furtherance of various initiatives addressing conflict minerals supply chain. Similar to the proposed “CSR risk free sourcing and investment zones,” closed-pipe supply chains for conflict minerals have been initiated in the eastern DRC. This section looks at the two existing programmes, the Solutions for Hope Project (SfH) to source tantalum and the Conflict-Free Tin Initiative (CFTI) for tin.

Solutions for Hope Project (SfH)

The Solutions for Hope Project (SfH)⁵ were launched in July 2011 by Motorola Solutions Inc.⁶, a leading communications equipment manufacturer, and AVX Corporation⁷, a prominent tantalum capacitor manufacturer, as a pilot project to secure conflict-free tantalum from Katanga Province, south of South Kivu in the DRC. The SfH uses a closed-pipe supply chain and a defined set of key suppliers to source minerals in the region.

⁵ <http://solutions-network.org/site-solutionsforhope/>

⁶ www.motorolasolutions.com/

⁷ www.avx.com/

In this closed-pipe supply chain, *Coopérative Des Artisanaux Miniers du Congo* (CDMC), a mining cooperative including artisanal miners and buyers in the whole Katanga Province, manage artisanal production and minerals purchase at the Mai Baridi, Kisengo and Luba mines, the concessions of the Mining Minerals Resources SPRL (MMR)⁸. Ores are weighed and logged at the mines as part of a traceability system, the International Tin Research Institute (ITRI) Tin Supply Chain Initiative (iTSCi)⁹, by the local state agent, SAESSCAM (*Service d'Assistance et d'Encadrement du Small Scale Mining/Technical Assistance and Training Service for Small-Scale Mining*). The iTSCi involves a chain of custody data collection to achieve traceability, adding a barcoded mine tag and a processor tag with a unique reference number to the each bag of minerals. The minerals are then transported to an MMR depot for export and purchased by the AVX Corporation with a global market price. The F&X Electro-Materials Limited, a Conflict Free Smelter (CFS)¹⁰ compliant smelter, as well as Smelters Global Advance Metals (GAM), Starck and Nigxia process the minerals into tantalum powder and wire for the AVX Corporation. The conflict free tantalum capacitors manufactured by the AVX Corporation are used by Motorola Solutions Inc., HP, Intel, Nokia, Foxconn and other participants in the project. That way, participating companies can buy tantalum from the production sites, organised by the MMR, under the project name, “Solutions for Hope.”

⁸ <http://www.vinmartgroup.com/associates/mmr-sprl>

⁹ www.itri.co.uk/index.php?option=com_zoo&view=item&Itemid=189

¹⁰ The CFS program for tantalum, tin, tungsten and gold was developed by the joint Extractive Workgroup of two electronics industry association, Electronics Industry Citizenship Coalition (EICC) and the GeSI. It is a voluntary program through which an independent third party assesses smelters to verify whether they demonstrate all the materials they processed are from conflict-free sources, using business process review and material analysis review.

In order to commence the project, the MMR pre-financed the implementation of iTSCi to become the first iTSCi verified mine concession in Katanga (Resource Consulting Services 2013). It has also made a significant investment in the project by providing training for CDMC, appointing a Due Diligence team to monitor the implementation of the OECD Guidance and ensuring regular remuneration of SAESSCAM agents, who monitor the traceability at the mine sites. In addition, the company made transparent contracts with a private security firm and the Congolese Police to ensure their role being solely the protection of the premises.

The project supports other standards such as the Certified Trading Chains (CTC) developed by the German Federal Institute for Geosciences and Natural Resources (BGR). The CTC aims at promoting traceability, transparency and responsible production standards in the artisanal small-scale mining sector, based on performance monitoring through third party baseline audits and compliance audits, leading to certification at a national level. The Mai Baridi mine was evaluated for compliance with the CTC and has been designated as a “Green” site. In addition, the MMR joined the Upstream Pilot Implementation of the OECD Guidance and was audited twice by an independent auditor against the OECD Guidance. The SfH also supports the Regional Certification Mechanism by the International Conference on the Great Lakes Region (ICGLR)¹¹. The ICGLR is a regional body of eleven African country members and aims at improving security and stability in the region by bringing to an end to the illegal exploitation of natural resources in the region, so that the materials mined at its sites will be issued with ICGLR certificates.

¹¹ www.icglr.org/

The SfH project has despatched six ore shipments totalling over 145 metric tonnes as of June 2013. It was validated as a reliable system by the project evaluations conducted in January 2012 and between November 2012 and April 2013 and operates on a full scale. It aims to increase its sustainability and expandability and is open for participation by all companies including mining, smelters, component manufacturers and product manufacturers.

Conflict-Free Tin Initiatives (CFTI)

The Conflict-Free Tin Initiatives (CFTI)¹² is another pilot closed-pipe supply chain programme and attempts to source conflict-free tin from the Kalimbi mine in Kalehe, South Kivu province. It was convened in September 2012 by the Dutch government together with industry partners in order to promote responsible sourcing and economic development in the DRC. The pilot intends to create demand for conflict-free tin and reverses the *de facto* embargo on the minerals in the DRC, posed by the Dodd-Frank Act. It does so by establishing a vertically-integrated supply chain including confirmed buyers of conflict-free tin from the Kivus. The operating system for the CFTI includes the iTSCi traceability and due diligence system, operated by Pact, an independent NGO, as well as the ICGLR framework to assist the reform initiatives by the DRC government and the Mines Ministry with the involvement of local civil society (CFTI 2012). The CFTI is also consistent with the OECD Guidance. It is open for participation by all companies and is currently participated by Royal Phillips Electronics, Tata Steel, Motorola Solutions, Blackberry, Alpha, AIM Metals & Alloys, Malaysia Smelting Corporation Berhad (MSC), Traxys, Fairphone and ITRI.

¹² <http://solutions-network.org/site-cfti/>

The project was launched on 24 October 2012 and is considered to be successful. The Kalimbi mine was agreed to be conflict free by the DRC government, the UN, the BGR, iTSCi and local business and civil society. It has produced more than 200 tonnes of tin and dispatched seven shipments to the identified smelter. There have been some other successes by the CFTI, namely the increased number of miners from 100 to 1,200, the improved income of miners from USD 2 to USD 4 –USD 6 per kilo, and enhanced working conditions and the health and safety standards, thereby contributing to the formalisation of the sector.

The CFTI also has a local whistle blowing mechanism, called *Comite de Surveillance et Anti-Corruption* (CSAC)¹³, to monitor the mineral tagging system. The CSAC includes thirty multi-stakeholder members from the state mining agencies, the Congolese army and mining police, traditional chiefs, civil society and other local stakeholders. The members raise an alarm when there is an attempt to use the CFTI for smuggling minerals or an involvement of any armed groups and produce monthly monitoring reports. There has been a considerable improvement in the quality and detail of the incident reports as well as the ability to identify supply chain risks within the CSAC (Global Witness 2013).

Despite the progress the CFTI has made in improving the standards of mineral production and supply chain risks, there was a smuggling operation in 2013, in which a member of the Congolese army had been pocketing a portion of minerals produced at the CFTI site (Global Witness 2013).¹⁴ While these minerals were not tagged with the

¹³ <http://ogprdc.org/>

¹⁴ Global Witness (2013) conducted field work in the eastern DRC in March 2013.

iTSCi, the fact that the army can yield benefits from the CFTI would damage the integrity and credibility of the project. The Kalimbi mine remained open during the worsening of the security situation in North Kivu in 2012; however, security dynamics pose a significant challenge to ensure mines and trading routes free of the army and armed groups as the CFTI recognises security as a crucial condition for its progress.

Discussion and conclusions

The closed-pipe supply chain initiatives by the SfH and CFTI seem to be successful in supplying conflict-free tantalum and tin from the eastern DRC since their inception. On one hand, they might have created a perception that all other minerals produced outside the closed-pipe supply chains are conflict minerals. On the other hand, they have demonstrated that it is possible to avoid the widespread boycott of minerals originated from the whole region as an easy option which is believed to have caused an unintended and undesirable effect on the limited livelihood of the local population (Young et al. 2010). They displayed a remarkable departure from the responsible supply chain management based on codes of conduct and responded to the paradigm shift requiring full traceability and legal compliance. It is commendable that the SfH showed a significant commitment to start the groundbreaking closed-pipe supply chain project by providing finance as well as taking a risk. The SfH, therefore, served as a model for the CFTI and is expected to inspire further projects such as the joint Conflict-Free Tungsten Program by the Conflict-Free Sourcing Initiative (CFSI) and Tungsten Industry Conflict Minerals Council (TI-CMC)¹⁵. It is pertinent to consider whether this innovative, responsible supply chain approach can retain integrity and scalability and could

¹⁵ This new programme was announced in November 2013 (EICC 2013).

contribute to peacebuilding in the conflict-prone eastern DRC.

In considering the integrity and scalability of the approach, there are a number of issues and challenges. Firstly, there is a grave concern regarding the robustness of the monitoring systems to maintain the integrity and credibility of the closed-pipe supply chain. This is not only because of the poor communication networks of the monitoring systems with other relevant stakeholders but also because of the problem arising from the rampant smuggling operations which are connected with the armed forces and high level corruption in the area (Global Witness 2013). It poses a particular challenge to address irregularities within the supply chain even when they are identified and red flagged. Those, who monitor the operations, can be threatened by the involvement of the armed forces; the security in the surrounding areas is an essential prerequisite.

Secondly, while security is a necessary condition, the security dynamics in the area, especially in Kivus, have been fluid and causing uncertainty. It makes finding other mine sites to replicate the initiative difficult and threatens the operation of the existing conflict-free mine sites.

Lastly, the closed-pipe supply chain initiatives for conflict-free minerals need more buyers in order to make them economically viable according to a participating company of the CFTI.¹⁶ Increasing participants will require more and steady production by expanding mine sites, hence scaling up of the initiative. If the security condition cannot be maintained, the initiatives will end up as a charitable endeavour, hence, will not be sustainable.

¹⁶ Informal conversation with a representative of an electronics company, participating in the CFTI, on 23 October 2013 in Brussels.

As for the peacebuilding potential of the closed-pipe supply chain, there are some positive features within the initiatives. First and foremost, the long-term commitment made by the closed-pipe supply chain participants enables opportunities to provide useful skills, knowledge and expertise for responsible production and to improve labour and environmental standards and livelihood. Therefore, it can foster long-term collaborative relationships amongst the stakeholders which could transform the socio-economic structures in producer communities (Ras and Vermeulen 2009). Such transformative relationships could build host communities' capacities for sustainable community development and influence issues relevant to the conflict background (Kolk and Lenfant 2013, p. 486).

In addition, the SfH directly engages with the security issues by signing clear and transparent contracts with the private security firm and the Congolese Police, thereby trying to prevent the involvement of the armed forces in the mine sites. While this kind of collaborative and transformative relationship is essential in peacebuilding and conflict prevention, it would not be possible with conventional global sourcing strategies which require constant changes between producers and suppliers to achieve competitive advantage.

From the above, the closed-pipe supply chain initiatives are considered to employ a transformative approach and constructive engagement with a broad range of stakeholders. Therefore, they could address some critiques made against conflict sensitive approach based on "do no harm," demonstrated by boycotting, or certification programmes such as the Kimberley Process Certification Scheme (KPCS) to curtail the flow of conflict diamonds by assuring the origin of diamonds. Although the KPCS was

praised for formalising the international diamond trade and increased tax revenues for producing countries, weak internal controls in producing countries with porous borders and extensive artisanal mining and informal economy have been posing a threat to the integrity of the system (Mitchell 2012). Moreover, the KPCS does not address the issues of development and human rights violation in producing communities (Le Billon and Levin 2009).

The conflict sensitive approach including certification schemes may serve to reduce risks for companies, but does not solve existing conflict or prevent potential conflict. On the contrary, the closed-pipe supply chain for responsible supply chain management resonates conflict transformation scholarship, which stresses holistic change at all levels to transform structural, cultural and relational causes underlying the conflict (Lederach 2003). Therefore, it has a potential to play the role of business in peacebuilding as Nelson (2007, p. 7) described: to “proactively create positive societal value by optimising the external multipliers of their own business operations and engaging in innovative social investment, stakeholder consultation, policy dialogue, advocacy and civic institution building.” There is a need to involve even wider stakeholders and gather support for this potentially peacebuilding and innovative approach by ensuring security in the area. Moreover, there is a need to conduct further research to evaluate the progress and impact of the approach on socio-economic and political structures in the producing communities. The research will contribute to the emerging scholarship in “peace through commerce” and could inspire the aspiration of the private sector to “work on conflict” constructively.

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