Do certification mechanisms prevent the trade of minerals in the Great Lakes Region from financing armed groups?

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Do certification mechanisms prevent the trade of minerals in the Great Lakes Region from financing armed groups?

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Abstract

Policymakers are trying to stop the fuelling effect of natural resources on armed conflicts. For that reason, certification mechanisms have been developed in order to track the origin of resources and ensure that they are conflict-free to prevent natural resources to fund armed groups and, thereby, reduce conflict in resource-rich areas. In the African Great Lakes region, the Regional Certification Mechanism (RCM) is in force since 2011 to stop the illegal trade of conflict minerals. However, many armed groups continue to cause instability in some regions such as in Eastern Congo. This thesis will, through process-tracing, explore the process by which the RCM has an impact or not in reducing the illegal exploitation of natural resources and cutting the link between minerals and the financing of armed groups. Given the important issue of conflict resources, it is essential to understand and improve peacebuilding tools available to address this matter.

Introduction

For the last decades, an increasing proportion of armed conflicts has been related to natural resources, representing more than 40% of current conflicts (UN Security Council, 2018). Simultaneously, scholars have found several correlations between conflict and natural resources, including the financing of armed groups through the illegal exploitation of natural resources that allows them to perpetuate their violent activities (Ross, 2004).

In this regard, policymakers have developed procedures to prevent the illegal exploitation of natural resources and, therefore, to prevent the income generated by the latter from financing armed conflict. These tools include certification mechanisms designed to trace the source of natural resources and ensure that they do not come from conflict areas and have not been illegally extracted by rebel groups (Berman *et al.*, 2017).

These procedures apply notably to diamonds through the Kimberley Process Certification Scheme (KPCS) established in 2003 and serving as an international procedure to avoid the sale of "blood diamonds" on the market (Kimberley Process Certification Scheme, 2003) after the latter contributed to financing deadly wars in Sierra Leone, Angola and Liberia. The Kimberley Process inspired the International Conference on the Great Lakes Region (ICGLR) to set up the Regional Certification Scheme (RCM) created to stop the trade in conflict minerals (Berman *et al.*, 2017).

The main objective of certification procedures is to reduce conflicts in unstable resource-rich areas by cutting the link between the exploitation of natural resources and the financing of armed groups (United Nations Economic Commission for Africa, 2013) by controlling resources supply chains from the mines to export. Yet, in some places where the RCM has been implemented such as Eastern provinces of the Democratic Republic of Congo, armed groups are still present (UN Security Council, 2019) and the traffic in "blood minerals" continues (Georis, 2019).

This raises the question of the effectiveness of certification procedures as a means of reducing the illegal trade of minerals and preventing armed groups to finance themselves. More specifically, the puzzling situation in the African Great Lakes led me to the research question: "Do certification mechanisms prevent the trade of minerals in the Great Lakes Region from financing armed groups?"

This research topic must be studied in order to define if certification mechanisms are effective ways of reducing, on the one hand, the illegal trade of natural resources and, on the other hand, the possibility for armed groups to access income from these resources to finance their activities. As conflicts over resources are growing, it is essential to understand the effects of the resolution tools available for policymakers and find out whether they could be improved. Furthermore, the minerals targeted have become essential to our everyday life devices and care must be taken to ensure that they do not finance insecurity in the Great Lakes Region (Blore and Smillie, 2011).

To that end, this thesis will analyse, through process-tracing, the implementation of the Regional Certification Scheme of the International Conference on the Great Lakes Region and the evolution of illegal trade and armed interference in mineral supply chains since then. This will be done mostly thanks to the open data of the International Peace Information Service (IPIS), a Belgian independent research institute, and the official data of mineral production of the Democratic Republic of the Congo.

The empirical analysis shows from the outset an incomplete implementation of the RCM in the study area and varying according to the type of mineral controlled, which already reduces its effectiveness. On the other hand, in well-controlled areas, the presence of armed groups in mineral production chains appears to have diminished. This suggests that certification mechanisms can be considered as reliable tools to combat the illegal exploitation of natural resources as a means of financing armed groups.

Literature review

The literature over the relationship between natural resources and civil wars or conflicts has become very extensive over the last decades. While the proportion of conflicts related to natural resources has increased over the last 60 years (Le Billon, 2013; UN Security Council, 2018), different correlations between natural resources and political violence have been demonstrated empirically by scholars. Indeed, some scholars have found that the exploitation of natural resources can lead to the outbreak of civil war (Collier and Hoeffler, 2004) or that the looting of extractive resources, along with other factors, can play a role in the duration of conflicts by funding the rebel groups (Ross, 2004). Another positive correlation has been found between the presence of natural resources and the intensity of the conflict (Ross, 2004; Hendrix and Noland, 2014), as well as the likelihood of conflict recurrence (Le Billon, 2013). Finally, other studies have demonstrated the positive effect of mining extraction on the propensity for local conflict in Africa (Berman *et al.*, 2017).

Among peacebuilding policies developed to remedy the negative impact of the extraction of natural resources, certification mechanisms are one way found by the international community, strongly encouraged by Western NGO campaigns to provide greater transparency in the sector (Wright, 2004). Natural resources certification aims at diminishing "the impact of lootable resources on civil conflict, increasing the odds that resource revenues would be used in economically rational, prodevelopment ways and directly contribute to political stability and the improvement of human rights" (Hendrix and Noland, 2014). Indeed, given the link between natural resources and the intensification of conflicts, regularizing the sale of natural resources should make it possible to promote peace by cutting off the financial resources of armed groups (Le Billon, 2003).

In short, certification schemes prone transparency and traceability in the mining sector in order to stop the illegal traffic of conflict resources defined as "natural resources whose control, exploitation, trade, taxation, or protection contribute to, or benefit from the context of, armed conflict" (Le Billon, 2003). As these certification schemes have indeed made the extractive sectors more transparent, the success of the original goal of reducing conflict in these resource-rich areas is less obvious among scholars (Mitchell, 2012; Berman *et al.*, 2017).

A major part of the literature on the certification of natural resources has focused on the case of the Kimberley Process Certification Scheme (KPCS). The latter was the first tracking instrument developed following the impact of conflict diamonds in Sierra Leone, Angola and

Liberia. It was established in 2003 based on the voluntary participation of the signatory countries (Hendrix and Noland, 2014). Overall, the KPCS is considered in the literature as a major step forward for the diamond industry in terms of transparency (Mitchell, 2012; Davidson, 2016) and the most successful certification scheme so far (Blore and Smillie, 2011). It has also been proven that the share of those conflict diamonds has significantly diminished after the establishment of this mechanism (Hendrix and Noland, 2014; Howard, 2016).

However, scholars have also raised some concerns about the Kimberley Process efficiency. Firstly, many artisanal diamonds from the informal market can still be transported to neighbouring countries where they will join the formal market (Mitchell, 2012). This possibility to easily launder the diamonds questions the certification that they do not come from conflict zones (DeBoom, 2016). Secondly, the definition of "conflict diamonds" in the Process has been considered as too narrow as it considers only the violence perpetrated by insurgent groups (Howard, 2016). Yet, in the case of Zimbabwe for example, it was the government that was committing the abuses in the diamond industry, but Zimbabwe remained a Kimberley Process participant as the country still met the necessary criteria (Global Witness, 2007; Hendrix and Noland, 2014). Furthermore, only the countries are responsible to apply the regulations of the KPCS with a system of internal control. Hence, the absence of an official institution verifying the correct application of the regulations in force in the participating countries and the lack of sanctions diminish the credibility of the procedure (DeBoom, 2016).

In terms of conflict-reducing, the KPCS does not enable to have a good evaluation of its efficiency as it has been studied in areas already conflict-free by the time it was implemented. Indeed, by 2003, the civil wars in Sierra Leone, Libera and Angola that had been largely funded by blood diamonds were already over. Therefore, the KPCS has not been yet really tested regarding its efficiency to prevent armed groups from financing themselves through the exploitation of natural resources (Mitchell, 2012). In conclusion, the literature on the KPCS focuses particularly on the efficiency of its implementation in the countries and on the effects of the process on the diamond market, but not so much on its ability to reduce the financing of armed groups in the areas concerned.

In the Great Lakes Region, the Regional Certification Mechanism of the ICGLR and other such mechanisms have been introduced while violence was still present and armed groups still active (Omeje and Redeker Hepner, 2013). In the Eastern Democratic Republic of Congo, for example, no less than seventy armed groups were still active when the RCM was implemented (Stearns and Vogel, 2015).

According to scholars, minerals in the DRC did not contribute to the onset of the conflicts, but enabled to perpetuate and intensify them (Hendrix and Noland, 2014). Indeed, the Panel of Experts on the Illegal Exploitation of Natural Resources and Other Forms of Wealth of DR Congo, a group of experts designated by the UN Security Council to investigate the illegal resource exploitation in DRC, analysed its potential link with the ongoing conflict. In their report of 2003, the Group confirmed that "the flow of arms, exploitation and the continuation of the conflict are inextricably linked" (UN Security Council, 2003, p.19) and underlined the need for a more transparent exploitation of natural resources (UN Security Council, 2015). The whole region is involved in this issue as the Panel of Experts identified twelve countries where goods from the DRC could be transported, including Burundi, Rwanda, Uganda and Zimbabwe.

The RCM was therefore created by the International Conference on the Great Lakes Region to cut that link between natural resources and the financing of armed groups in the region and to enable countries to use revenues from the mining industry for their development.

To that end, the RCM has been modelled on existing certification mechanisms while taking into account the errors noted in these mechanisms to correct them in the new model. Therefore, unlike the Kimberley Process, the RCM includes a regulatory institution independent of the ICGLR member countries (International Conference on the Great Lakes Region, 2016) and is based on a more comprehensive definition of conflict minerals.

Thus, on paper, the RCM is already more ambitious in its objectives than the KPCS. However, as the literature on the former is less prominent than on the Kimberley Process, the impact of the RCM on the illegal trade of minerals and the conflict-reducing effect of the mineral certification has not been demonstrated so far (Berman *et al.*, 2017). Despite the growing number of minerals traceability schemes for the last decade, the analysis of their effectiveness remains very limited in the literature (IPIS, 2019).

Further research is thus necessary to see whether the RCM has been well-implemented in the Great Lakes Region and has had a positive impact in reducing the illegal exploitation of natural resources and thus the financing of armed groups.

If the RCM has this positive impact, armed groups in unstable regions continue their activities despite this lack of funding or find alternatives to obtain arms and necessary equipment. Indeed, the RCM is one peacebuilding tool among many others to contribute to the stability of the region. This alone will not eradicate the very complex conflicts between armed groups present in the region for decades now. It can, however, reduce their possibilities of funding and,

therefore, potentially reduce the intensity and continuation of armed conflict (Salter and Mthembu-Salter, 2016).

That is why the thesis will focus on the evolution of the legal trade of minerals since the implementation of the certification mechanism to see if progress has been made thanks to responsible sourcing, and if it has enabled to reduce the possibility for armed groups to fund themselves thanks to natural resources.

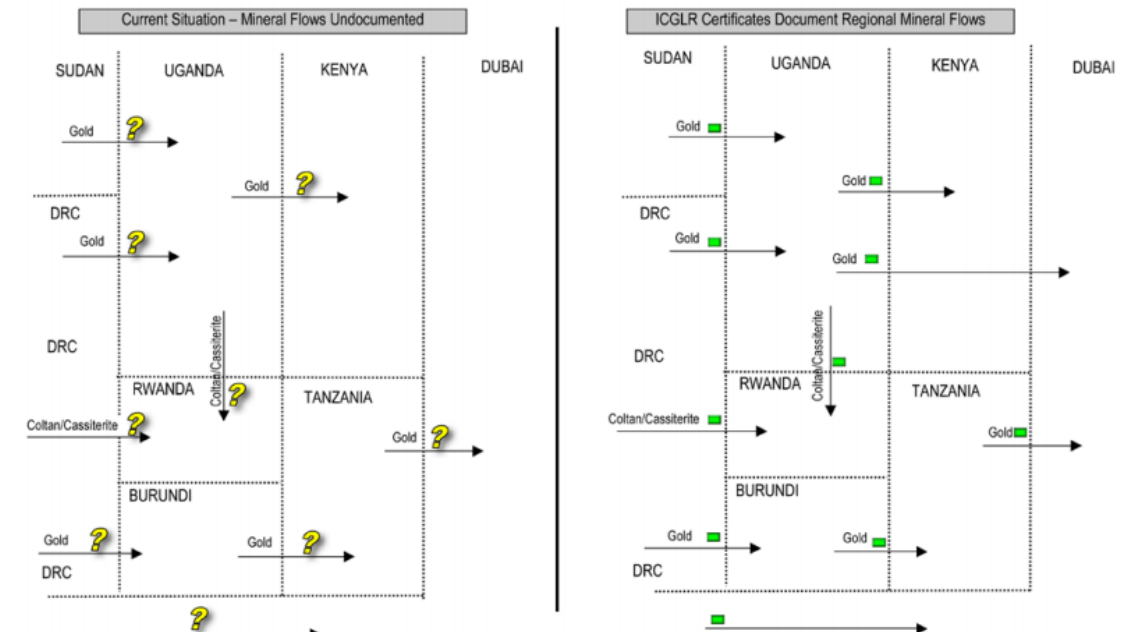
Theoretical argument

As seen in the literature review, the relationship between the looting of natural resources and the intensity and duration of conflicts has been demonstrated (Ross, 2004). Knowing that positive relationship between those variables, one could reasonably expect that if we prevent natural resources to be looted, we should see a reduction in the intensity and length of conflicts in those resource-rich areas. It is in this perspective that certification mechanisms are expected to lead to a reduction in armed conflict in areas rich in lootable resources.

The Regional Certification Mechanism aims at providing for "sustainable conflict-free mineral chains in and between ICGLR Member States with the aim of eliminating financial channels supporting armed groups that sustain or prolong conflict, and/or otherwise engage in serious human rights abuses" (International Conference on the Great Lakes Region, 2016). The procedure therefore controls the entire mineral supply chains. The goal is to avoid the interference of armed groups, whether they are "rebels, local militias or military forces acting independently of government control" (Blore and Smillie, 2011), to find a source of financing in the supply chain and certify all minerals to be conflict-free.

Figure 1 shows how the RCM should work in theory to avoid minerals to be smuggled out of the country and sold illegally. Minerals will have to be accompanied by a ICGLR Regional Certificate that ensures that they have been legally exported (Blore and Smillie, 2011).

Figure 1: ICGLR Certificates – Carrying information Across the Region



Source: Partnership Africa Canada

As armed groups can intervene at any point of the supply chain, the RCM is designed to trace minerals from the mine site to the export point as follows. The first step of the RCM is the Mine Site Inspection and Certification that classifies mines according to standards and can be either certified, yellow flagged or red flagged meaning that the mine will not be allowed to extract minerals anymore until the next inspection. These inspections are made annually by a government inspector. The RCM also includes a Mineral Chain of Custody Tracking intended to verify the traceability and conflict-free nature of minerals along the entire supply chain. An ICGLR Database of Mineral Flows has been put in place to ensure the tracking of minerals in the whole region. Finally, a Third Party Audit System exists as an independent body that ensures the validity of supply chain certification, as well as an Independent Mineral Chain Auditor (IMCA), which conducts investigations if necessary, particularly if the IMCA suspects the involvement of armed groups in a mineral chain (International Conference on the Great Lakes Region, 2016).

In theory, this is how the RCM works and should prevent minerals to fuel armed activities. The RCM seems well-developed and even includes an independent institution that verifies the proper certification of minerals in addition to government controls, which was one of the shortcomings of the Kimberley Process.

Based on how the RCM works in theory, several hypotheses can be put forward to see whether certification mechanisms can prevent the trade of minerals in the Great Lakes Region from financing armed groups.

Firstly, one could expect that, as the goal of the scheme is to curb the illegal exploitation of natural resources, the legal trade and official exports figures should increase. Indeed, the minerals sold with their certificates are integrated into the legitimate trade of the country. Therefore, the more the mechanism monitors and certifies the supply chains, the more the minerals will be included in the legal market of the country.

Hypothesis 1: If the Regional Certification Mechanism is working, the legal trade of minerals should increase following its implementation.

Regarding armed groups, another hypothesis can be deduced from one of the components of the RCM, namely the mine site inspection. The verification of mines through on-site visits by state agents is made to verify that no armed groups are present in the mine, otherwise the mine will not be certified. Hence, mine inspections should discourage armed groups from being

present in the mines, and thus the RCM should make it more difficult for armed groups to have direct access to natural resources.

Hypothesis 2: The Regional Certification Mechanism makes direct control of the mines more difficult for armed groups.

Finally, the situation remains very unstable in some regions because of the ongoing presence of armed groups, and they have to find a source of income to acquire weapons, for example. Hence, another hypothesis that can be expected is that, if certification mechanisms prevent the interference of armed groups in mineral supply chains, we should observe that armed groups are turning to new means of financing to continue their activities.

Hypothesis 3: Armed groups find other means than the illegal trade in RCM-controlled resources to finance themselves.

These hypotheses are just assumptions that the thesis will confirm or not but, more importantly, I expect to find new factors that could explain the research puzzle by studying in-depth the steps of the RCM.

Empirical approach and justification of the case

As said in the literature review, among the natural resource certification mechanisms, the Kimberley Process has been the most studied. Therefore, the Regional Certification Mechanism (RCM) of the International Conference on the Great Lakes Region (ICGLR) will be the focus of this study.

For the purpose of exploring the process by which the RCM impacts on the financing of armed groups, the method that will be used in this thesis will be a process-tracing (Beach and Pedersen, 2013). The aim will be to assess whether the regional mechanism produces the theoretically expected effects of reducing illegal mineral trade and preventing it from financing armed groups.

This method will enable to analyse in-depth the outcomes of the RCM in a single-case study and see whether the effects expected from the application of certification schemes are produced there, which is an advantage of the process-tracing method (Beach and Pedersen, 2013). The accuracy of the empirical analysis would not have been possible with another method such as a statistical analysis as a step-by-step analysis is necessary to understand the causal mechanisms leading to the observed results.

As to realize the process-tracing, I will depart from the implementation of the RCM in the Great Lakes region and the procedures it implies to see what is working and what factors might prevent it from curbing the illegal exploitation of minerals. Each step of the RCM will be analysed one by one in the study area to see whether it is in place or not and to see how it has been implemented in practice. The effects on the legal trade will then be analysed in order to see the evolution of the official figures since the implementation of the RCM. Finally, the findings of these two analyses will be completed by the analysis of the effects of the certification mechanism on the financing and interference of armed groups.

The RCM is aimed to prevent the illegal exploitation of what are commonly called the "3TG" which are the following minerals: Cassiterite (Tin), Coltan (Tantalum), Wolframite (Tungsten) and Gold, as these are considered as the most conflict-prone (Salter and Mthembu-Salter, 2016). The RCM is defined as "the set of policies, laws and regulations governing operations of exploration, trade and use of such resources" (International Conference on the Great Lakes Region, 2016).

Illegal Exploitation will be understood as defined in the Protocol against the Illegal Exploitation of Natural Resources as "any exploration, development, acquisition, and disposition of natural resources that is contrary to law, custom, practice, or principle of permanent sovereignty over natural resources, as well as the provisions of this Protocol" (International Conference on the Great Lakes Region, 2006).

The focus area will be the African Great Lakes Region as it is where the RCM has been implemented. More specifically, I will concentrate on the Democratic Republic of the Congo (DRC) as it is the most relevant case to study. This is the case because the country has a large concentration of Designated Mineral mines and many armed groups have been present for decades, especially in Eastern Congo (Stearns and Vogel, 2015; Georis, 2019). Finally, so far, DRC is the only country of the twelve ICGLR member states to use the ICGLR certificates for the 3TGs (UN Security Council, 2020).

To carry out the empirical analysis, regarding the trade of minerals, I will use as main sources of data the mining statistics of the Ministry of Mines (Ministère des Mines, 2020) as well as the open data of the International Peace Information Service (IPIS) which has been working in the field since 2010 for the purpose of mapping of artisanal and small-scale mining (ASM) sites in Eastern DRC (IPIS, 2020a).

In addition, I will use reports of the UN Group of Experts on the Democratic Republic of the Congo (UN Security Council, 2015, 2019, 2020) and the United States Agency for International Development (Salter and Mthembu-Salter, 2016), reports of Partnership Africa Canada (Blore and Smillie, 2011) and reports of the United Nations Economic Commission for Africa (United Nations Economic Commission for Africa, 2013).

Empirical analysis

Implementation of the Regional Certification Mechanism

In the Great Lakes Region, the RCM was designed in 2010 as one of the six tools of the ICGLR Regional Initiative to fight against the Illegal Exploitation of Natural Resources (RINR). This latter is one of the protocols included in The Pact on Security, Stability and Development in the Great Lakes Region, signed in 2006 by the ICGLR member states, i.e., Angola, Burundi, Central African Republic, Republic of Congo, Democratic Republic of Congo, Kenya, Uganda, Rwanda, Republic of South Sudan, Sudan, Tanzania and Zambia.

The RCM has not been implemented simultaneously in all member states. Indeed, Rwanda was the first country of the ICGLR to start implementing the RCM at the beginning of 2011 (Salter and Mthembu-Salter, 2016) while some countries, such as Uganda, have only applied it from 2020 onwards (Odyek, 2020). Member states have set it up gradually and with the help of the ICGLR Certification Manual (United Nations Economic Commission for Africa, 2013) that was written in accordance with the *OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas* established in 2010. The latter consists in recommendations intended for companies to avoid the presence of human rights abuses and conflict minerals in their supply chains (OECD, 2016).

In the DRC, the RCM was set up from the beginning of 2012 (IPIS, 2012). Each step of the Mechanism will be more precisely analysed in its implementation in DRC. The RCM Manual is only a guidance for member states and each country has to follow the minimum standards of the RCM but to create and implement the mineral tracking systems is their responsibility, so procedures are not the same in all member states (Salter and Mthembu-Salter, 2016). However, the same tracking systems are often used in different countries of the region. It is the case of the iTSCi, a tracking system for 3T minerals developed in 2010 by the Tin Industry Association (ITRI), and validated by the ICGLR as “suitable for use within the framework of the RCM” (ITSCI, 2020). The iTSCi tracking-system is currently used in Burundi, DRC, Rwanda and Uganda.

In DRC, the Ministry of Mines is in charge of the legal framework and the monitoring of the mining industry in the country at the national level. In addition, several governmental agencies support the RCM with more specific missions, as the Service for Assistance and Organization of Artisanal and Small-scale Mining (SAESSCAM) and the Centre for Evaluation, Expertise and Certification (CEE) (Losango Nzinga, 2017).

It is now relevant to look at how each step of the RCM has been implemented in practice, starting with the first stage of the procedure, i.e., the mine site inspection and certification.

a) Mine Site Inspection and Certification

In the Great Lakes Region, the mine site inspection can result either in a red flag meaning that the mine has to close, a yellow flag leading to a 6-month closing period to improve the mine's conditions or, finally, in a green flag which means that all the standards are fulfilled to certify the mine and give exporters their certificate valid for twelve months (ICGLR Regional Certification Mechanism (RCM), 2011).

In practice, in the Democratic Republic of the Congo, mine site certifications, called "validation" there, are made by "missions conjointes" (joint missions). These are composed of representatives from the national and provincial governments as well as representatives of the iTSCi/PACT, NGOs, MONUSCO and civil society. This variety of actors present for mine visits was decided to ensure the credibility of the missions. However, the size of this necessary group proves to be very costly, logistically difficult and slows down the pace of validation missions (Salter and Mthembu-Salter, 2016).

It also appears that most of the mine sites verifications are made in non-conflict zones, while some more unstable and remote areas are less scrutinised due to the difficulty to access them, combined with a lack of logistics and validation teams (Salter and Mthembu-Salter, 2016). Yet, the more difficult to reach the mine is, the more likely it is to find mines controlled by rebels (Matthysen, Spittaels and Schouten, 2019).

As for the gold mines, the verification missions have been even less frequent. By way of example, in 2016, of hundreds of gold mines sites in North Kivu, only two had been validated and, therefore, licensed to export (Salter and Mthembu-Salter, 2016).

Table 1 shows the percentage of mines visited by the IPIS teams between 2016 and 2018 that had not been validated by the iTSCi validation teams (Matthysen, Spittaels and Schouten, 2019).

Table 1: Validated and non-validated mines visited by IPIS between 2016 and 2018

	Number of mines		Number of miners	
Yellow	13	2%	1,237	1%
Red	3	0%	1,080	1%
Green	174	24%	27,349	22%
Non-validated	521	73%	96,535	76%

Source: IPIS (2019)

In summary, regarding the procedure applied, it appears that the mine site verification could be more efficient in the DRC, especially in the areas most threatened by armed groups.

b) Chain of Custody Tracking System

Each member state must have a chain of custody tracking system enabling to trace the minerals and ensure that they are conflict-free from the mine site to the point of export (ICGLR Regional Certification Mechanism (RCM), 2011). There can be more than one tracking system in a country, different ones for different minerals for example. It is up to the country to mandate a non-state actor for the creation of the tracking system.

For 3T minerals, DRC has adopted the iTSCi mentioned earlier. The latter is the most frequently used system and is thus relatively well implemented. Some producers and exporters regret however the monopoly that the iTSCi has on tracking systems (Salter and Mthembu-Salter, 2016) as other systems exist as well. The prevalence of the use of the iTSCi system has the consequence of letting some mines not covered by it out of the international market, and without the opportunity to access it (Salter and Mthembu-Salter, 2016).

By contrast, the tracking of gold chains of custody is more complicated in DRC, particularly for artisanal and small-scale mining. First, by the easy transport of this high-value mineral, gold is by nature more difficult to trace. Secondly, the gold tracking system "Initiative de Traçabilité de l'Or d' Exploitation Artisanale" (ITOA) was launched only in 2017 and is still not very advanced in its application. This scheme traces artisanal gold thanks to a system of sealed bags (Losango Nzinga, 2017). Finally, miners have to pay very high taxes on gold in DRC, which does not encourage to stop the smuggling of artisanal gold.

As a result, gold is still being sold through illegal channels (Salter and Mthembu-Salter, 2016). This represents a big flaw for the RCM to certify artisanal gold and to prevent it from financing armed groups. An effective tracking system must be created and DRC also must reduce the taxes over artisanal gold to encourage the trade of it through legal channels (Salter and Mthembu-Salter, 2016).

In short, the Chain of Custody Tracking System has been effectively implemented in DRC for 3T minerals, but progress still need to be done concerning the certification of artisanal gold supply chains.

c) Minerals exports

For mineral exports, member states of the ICGLR have to appoint a governmental agency responsible to monitor Export Procedures and the Issuance of ICGLR Certificates (ICGLR Regional Certification Mechanism (RCM), 2011).

In DRC, the CEEC (Centre d'Evaluation, d'Expertise et de Certification des substances minerales précieuses et sémi-précieuses) is in charge for ensuring that the minerals are coming from validated mines, that the commodities will be exported with their certificate of traceability and chain of custody documentation and, finally, that the exporter has not been uncertified (red-flagged) (Salter and Mthembu-Salter, 2016).

d) Third Party Audits

The Independent Third Party Audit system is in charge of verifying that the ICGLR regional standards are well met through entire mineral supply chains (ICGLR Regional Certification Mechanism (RCM), 2011). The first audits took place only from 2015 because of the delay to establish auditing criteria (*Audit Methodology/Template for Third Party Exporter Audits of the ICGLR's RCM*) and the time it took to gather an Audit Committee composed of representatives of the government, industry and civil society (Salter and Mthembu-Salter, 2016).

These third party audits are contributing to the credibility of the RCM. However, such audits are very costly and, currently, not enough funding is available (Salter and Mthembu-Salter, 2016).

e) Independent Mineral Chain Auditor (IMCA)

The Independent Mineral Chain Auditor is responsible to ensure that chain of custody tracking systems comply with the ICGLR standards in each member state. Independent investigations are also made to ensure that no armed groups are involved in the mineral supply chain (ICGLR Regional Certification Mechanism (RCM), 2011). In addition, the IMCA is responsible to evaluate the risk of conflicts in the region and risks of conflict-financing through natural resources exploitation.

The IMCA conducted an assessment of the implementation of the RCM in the DRC between March and April 2017 (Losango Nzinga, 2017), basing the report on the case of the state-owned company Société Aurifère du Kivu et du Maniema (SAKIMA). The latter was chosen for its representativeness as it is one of the largest Congolese 3Ts producers and most of the

company's concessions are artisanal mines across North-Kivu, South-Kivu and Maniema (Losango Nzinga, 2017).

Overall, the IMCA concluded its report with the non-compliance of the company with the ICGLR standards in their mineral traceability, chain of custody tracking system and mineral exports procedure (Losango Nzinga, 2017).

The auditor stated that the iTSCi system did not fit for some parts of the mineral supply chain and was neither well implemented. Most of the mining sites in Kalima were still not integrated into the legal trade due to their difficult accessibility, the lack of iTSCi and SAESSCAM agents on the field, and again because of the slow pace of validation missions (Losango Nzinga, 2017).

Besides, only the governmental agency SAESSCAM manage the iTSCi tracking system in Kalima but they do not apply the mechanisms adequately in practice and lack of logistics and financial resources to do it right (Losango Nzinga, 2017). It follows that SAESSCAM managers ("encadreurs"), instead of visiting the hardly accessible mining sites, manage the verifications from a logistics hub where they sell iTSCi tags to the "négociants" who are then responsible for the iTSCi tracking system on the field while taking advantage of the situation to make profit (Losango Nzinga, 2017).

To summarize the report of the IMCA for the Société Aurifère du Kivu et du Maniema, the next table evaluates the level of compliance of the company with ICGLR Standards, showing the lowest level of compliance for most of the standards.

Table 2: Summary of ICGLR compliance table

Compliant		The Supply Chain System and its implementation are adequate for the standard's purpose.
Partially Compliant		The Supply Chain System should be adjusted, or reinforced for full compliance with the standard.
Non-Compliant		The Supply Chain System is not compliant with the standard.

ICGLR Standard	Supply Chain Systems: *Société Aurifère du Kivu et du Maniema*
ICGLR Standard 4.6	
ICGLR Standard 4.7	
ICGLR Standard 4.8	
ICGLR Standard 4.9	
ICGLR Standard 4.10	
ICGLR Standard 4.11	
ICGLR Standard 4.12	
ICGLR Standard 4.13	
ICGLR Standard 4.14	

Source: International Conference on the Great Lakes Region (ICGRL) (2017)

The analysis of the implementation of each step of the RCM procedure in DRC since 2012 already sheds some light on its effectiveness. We can observe that the mechanism has been set up with limited success. Indeed, the RCM is supposed to be in place everywhere, but it has taken a long time to implement some of the standards such as the third party audits or the ITOA, the validation process is going at a slow pace leaving mining sites on illegal channels, state agents are understaffed for the control of mineral supply chains and, overall, there is a lack of budget and logistics to implement the RCM standards effectively (Salter and Mthembu-Salter, 2016).

This applies all the more to the artisanal gold mining industry, for which the regulations are still very little enforced and complied in Democratic Republic of the Congo (UN Security Council, 2019).

Effects of the RCM over the mineral trade

The last section gave us a general idea of the implementation of the RCM in the Democratic Republic of Congo. It must now be seen whether it has been beneficial to limiting the illegal trade of designated minerals.

The data will be mostly based on artisanal and small-scale mining, as it is mainly this sector that generates informal trade (Krauser, 2020) and which is far more spread than the industrial mining as it represents about 90% of the country's mineral extraction (Gerig *et al.*, 2020). Cassiterite, coltan and wolframite are essentially extracted by artisanal exploitation, concentrated for the most in Eastern Congo in the provinces of North and South Kivu, Maniema and the former province of Katanga (Ministère des Mines, 2015).

The Ministry of Mines publishes every year the report of the country's mineral production and exports for the former year (Ministère des Mines, 2020). Here is the evolution of the official figures for 3Ts between 2013 and 2019.

3T minerals

Table 3: DRC Cassiterite production and exports, 2013 – 2019

	Artisanal production	Export quantity (tons)	Export value (USD)
2013	6 209.67	8 406.81	66 959 222.03
2014	7 295.37	7 198.84	56 461 467.43
2015	8 308.59	7 470.45	47 802 556
2016	11 824.34	9 465.55	64 134 822
2017	18 892.89	12 536.45	87 160 087
2018	16 273.06	13 354.74	101 227 809
2019	unavailable	19 983.51	157 298 164

Source : Ministry of Mines

Table 4: DRC Coltan production and exports, 2013 - 2019

	Artisanal production	Export quantity (tons)	Export value (USD)
2013	358,36	698,14 2	20 003 001
2014	1 140.44	1 158.91	42 064 435.34
2015	2 101.94	1 292.7	47 320 724
2016	2 414	1 786.59	54 827 912.01
2017	2 174.23	1 358.51	34 268 810
2018	1 838.77	2 190/18	60 868 778
2019	Unavailable	1 256.29	29 862 925

Source : Ministry of Mines

Table 5: DRC Wolframite production and exports, 2013 - 2019

	Artisanal production	Export quantity (tons)	Export value (USD)
2013	57.09	95.24	124 832.15
2014	16.28	17.5	3 150
2015	106.36	13.91	130 327
2016	153.88	90.27	769 349
2017	251.69	197.31	1 896 786
2018	310.34	248.77	3 110 847
2019	Unavailable	405.75	5 031 437

Source : Ministry of Mines

First of all, these data must be put into context. In 2014, the Ministry of Mines specifies that the ICGLR certification mechanism has improved the traceability of 3T minerals but, given the slow pace of validation missions and implementation of the tracking system, the increase in exports has not been as important as expected (Ministère des Mines, 2015). For 2015 and 2016, the Ministry of Mines states that the events at the national and international level have impacted economic sectors of DRC and more particularly the mining sector (Ministère des Mines, 2016, 2017).

The figures provided by the Ministry of Mines are revealing on the evolution of the legal trade and exports of 3Ts since the implementation of the RCM and other traceability schemes. Indeed, for cassiterite and wolframite, for example, the quantity of exports has increased every year since 2013, except for 2014. The increase in official figures of production and exports of minerals could be explained by the fact that the RCM reduce the illegal trade in 3Ts.

This evolution is less evident with regard to coltan. The artisanal production has seen a significant growth from 2013 to 2014 and has continued to rise until 2016 to finally go back down a little the next 2 years. However, due to production factors and commodity prices variations, the production of tantalum (coltan) mine sites is very variable over time which can explain possible fluctuations from one year to another (Schütte and Näher, 2020).

Either way, the figures of the Ministry of Mines alone are not sufficient to determine if the evolution in official data is a result of more transparency or an increase in production. That is why it is necessary to complete the analysis to see whether illegal mineral trafficking has actually declined.

The data of IPIS over artisanal and small-scale mining (ASM) give a better idea of the illegal exploitation of minerals in DRC since 2010. In fact, IPIS has found an improvement in 3T artisanal and small-scale mining formalization (IPIS, 2020a) increasing their flows in the formal trade.

Furthermore, that improvement in the transparency for 3T minerals is confirmed by the analyse of the official data in international trade as Philip Schütte (2019) did. In contrast to the period before 2012, the author notes fewer discrepancies between the import and export figures declared for tin and tantalum ores corresponding to the moment of the implementation of the certification mechanisms and due diligence. The DRC is also more and more correctly designated as country of origin of minerals starting from 2011, better corresponding to the fact that the country is the largest producer of these minerals (Schütte, 2019). Export figures also demonstrate the decrease of smuggling between bordering countries as proved by the lower volumes of reported exports of tantalum from Rwanda. This evolution in official trade figures demonstrates a better chain of custody documentation and traceability of mineral flows which now correspond better to their place of extraction (Schütte, 2019).

In short, even though we know that illegal trade of 3T minerals has not been entirely curbed by the RCM (Wakenge, Dijkzeul and Vlassenroot, 2018), especially given the incomplete implementation of certification mechanisms, the lack of data on it makes it impossible to

estimate its extent. However, the evolution of the legal trade and official export figures allows us to see that illegal trade has reduced following the implementation of mineral tracking systems and due diligence.

Gold

Table 6: DRC Gold production and exports, 2013 – 2019

	Artisanal production	Industrial Production	Export quantity (kg)	Export value (USD)
2013	292.27	5 833.31	6 125.58	233 640 095.96
2014	23 936.72		23 564.39	816 204 942.97
2015	548.43	31 329.11	31 790.76	1 072 289 550
2016	442.16	30 221.68	30 177.68	1 219 488 315
2017	302.23	31 290.25	31 511.90	1 086 756 311.33
2018	208.85	36 530.66	36 190.21	1 100 914 090.30
2019	333.39	33 419.04	33 055.395	1 012 976 216

Source : Ministry of Mines

As was the case for the implementation of a tracking system, the official mining statistics do not show the same trend for artisanal gold as for 3T minerals. The declared artisanal production of gold has decreased in DRC since 2015. For the years 2015, 2016 and 2017, the Ministry of Mines specifies that the decline in artisanal gold production is due to fraud and smuggling, which they have not yet fully mastered (Ministère des Mines, 2016).

Indeed, although DRC is one of the biggest producers of artisanal gold in the Great Lakes region, the country remains one of the lowest official exporters (UN Security Council, 2020). According to the Group of Experts on the Democratic Republic of the Congo, towns such as Bukavu and Butembo continue to trade illegally artisanal gold passing through Bujumbura, Kigali and Kampala, and bound for Dubai (UN Security Council, 2015).

The data of IPIS over gold ASM reinforces the finding that the illegal trade in gold has not been brought under control by the RCM. Indeed, based on estimations of worker's average productions per week and visited mine sites, IPIS estimated the annual production of gold to 11.6 tonnes of gold per year (Matthysen, Spittaels and Schouten, 2019). Yet, as can be seen in the table, the official record of the DRC show volumes much lower than these estimates. The

NGO Global Witness found that, in 2014, it has been up to 94% of the artisanal gold that has been carried outside DRC illegally (Global Witness, 2016).

In summary, the analysis of the evolution of the legal trade and reported export figures of tin, tantalum and tungsten is meaningful. Given that we can observe an increase in official mineral production and export figures, a better formalization of 3T artisanal and small-scale mining and a better match between exports and imports in other countries since the implementation of the RCM, we can argue that the RCM has been relatively successful in curbing the illegal exploitation and smuggling of 3T minerals.

In contrast, as expected while looking at the neglected implementation of a tracking system for artisanal gold, the RCM has not had yet a positive impact on reducing the illegal trade of gold as demonstrated by the official figures of the Ministry of Mines and by the estimates of the total number of illegal gold trades by IPIS.

The next section will analyse how these changes in mineral trade impact on the financing and interference of armed groups in mineral supply chains.

Effects for armed groups

As seen in the analysis of its implementation and impact on legitimate trade, the certification of artisanal gold has not been yet very successful. It is, therefore, not surprising to learn that armed groups still have access to artisanal gold and benefit from this income (Bafilemba and Lezhnev, 2015; Jamasmie, 2016). Armed groups and criminal networks can benefit from gold through direct control of the mines and illegal exploitation of the latter or through coercive taxation of the workers (UN Security Council, 2020).

In 2016, Global Witness published a report underlining the failure of responsible sourcing initiatives to curb the smuggling of gold after an investigation in Shabunda territory in Eastern Congo (Global Witness, 2016). The report shows that some foreign companies collaborate with local armed groups to protect the surroundings of their gold-rich areas. In this case, it was a Chinese company, Kun Hou Mining, paying armed groups of the region to protect their zone of gold extraction (Global Witness, 2016). As far as the provincial authorities are concerned, they are more supportive of the company's illegal activities than of the enforcement of Congolese law.

Regarding 3T minerals, in contrast, it appears that certification mechanisms and due diligence do have a positive impact on the information and transparency of supply chains and responsible sourcing of tin, tantalum and tungsten (UN Security Council, 2020). Drawing on the data of IPIS comparing the situation in mines before certification mechanisms and after (Matthysen, Spittaels and Schouten, 2019), some evolutions can be observed.

First, according to the field research of IPIS, the mines that they visited that had been validated experience less armed interference than the ones that had not been iTSCi validated (Matthysen, Spittaels and Schouten, 2019) as shown in the following table. The percentage corresponds to the level of armed interference, revealing that it is significantly higher in mines that have not been validated.

Table 7: Interference by armed actors at the mining site

	2015	2016/2018
All mines (3TG and other minerals):	41% (317/772)	28% (201/711)
All 3T mines:	17% (43/251)	16% (59/372)
Non-validated and Non-iTSCi 3T sites:	29% (42/143)	39% (33/84)
'Green' validated mines:	3% (2/69)	13% (22/174)
iTSCi sites:	0% (0/94)	8% (20/265)

Source: IPIS (2019)

It should be specified that, most of the time, the validation and presence of iTSCi agents is driven by the absence of armed interference in the beginning. Again, more difficult to reach mines are likely to experience more armed interference (Matthysen, Spittaels and Schouten, 2019). Yet, overall, there is an obvious decline in the presence and direct control of armed groups and warlords on mining sites since the implementation of certification schemes (Matthysen, Spittaels and Schouten, 2019). While the majority of mines were previously controlled by armed groups in Eastern Congo, about two-thirds of the 3T mines were demilitarised by 2014 (The Enough Project, 2016). Areas controlled by responsible sourcing initiatives experience less and less armed interference over the years when certification mechanisms are well implemented.

Secondly, IPIS researchers compared geographically the zones of conflict and mining areas, and found that conflict areas do not correlate with mining areas. Indeed, according to IPIS researchers, most armed conflicts do not take place in mining areas nor are they linked to the artisanal mining sector at the moment (Matthysen, Spittaels and Schouten, 2019).

The effectiveness of the RCM and other certifications of 3T minerals is further demonstrated by the fact that armed groups are turning more to the gold mining sector now, given its less effective regulation (Schütte, 2019). Parker and Vadheim (2017) have found that armed groups shifted from 3T mines to gold mines following the enforcement of Section 1502 of the Dodd Frank Act in the US legislation in 2010, designed to stop the financing of violence in Eastern Congo through 3T trafficking. According to their studies based on geo-referenced sources, this has led to a shift in clashes between armed groups towards gold mining areas (Parker and Vadheim, 2017).

However, despite less control over mines and diminished armed interference, in 2019, the Panel of Experts found that armed groups continue to finance themselves through the illegal trade in coltan, wolframite and cassiterite, in the Masisi territory for example (UN Security Council, 2019). In some cases, they reported the involvement of Congolese government officials in the smuggling of minerals.

Besides, several armed groups such as the Forces Démocratiques de Libération du Rwanda (FDLR), the Patriotic Resistance Front of Ituri (FRPI), Allied Democratic Forces (ADF) and Mai Mai Yakutumba that have been causing instability in the region for decades continue to interfere in some mining sites and mineral trading centres as it will require more than certification tools to stop the tensions in the Eastern Congo (Stoop, Verpoorten and van der

Windt, 2018; Matthysen, Spittaels and Schouten, 2019). Furthermore, the armed interference in mining sites is caused for the most by units of the Congolese army (FARDC).

Finally, direct control over artisanal mining does not constitute the only source of financing for armed groups in the region. Indeed, with traceability schemes of minerals, armed groups have found new ways to intervene in mineral supply chains to their benefits, notably with roadblocks or illegal taxation (Matthysen, Spittaels and Schouten, 2019). This suggests the effectiveness of the RCM to make it more difficult for armed groups to access resources.

Roadblocks are a means found by armed groups to benefit from mineral revenues without having to be present in the mining sites that are being more and more controlled. Indeed, the rebels set up roadblocks at some distance from the mines to intercept illegal taxation on transported minerals (Matthysen, Spittaels and Schouten, 2019). The researchers of IPIS found that, for over half of the roadblocks they have identified, the Congolese army (FARDC) was present to levy a tax on minerals. In 2017, a study of IPIS listed no less than 798 roadblocks just for the provinces of North and South Kivu (Jaillon *et al.*, 2017).

Apart from these roadblocks, in some cases, illegal taxation is also made directly in mining sites by armed groups in return for protection of the mines against other armed groups and pillaging (Krauser, 2020).

Finally, armed groups can turn to resources other than the 3TG's like charcoal, drugs or livestock to finance themselves (Krauser, 2020).

Summary of the findings

Following the empirical analysis, the first finding that can be highlighted is the slowness with which the RCM was set up. Certification procedures were, therefore, less effective from the outset because the verification missions could not yet be applied to the whole region. This is very problematic because the places least controlled by the mechanism are generally more remote areas and correspond precisely to the areas most affected by armed groups.

Secondly, the analysis of the evolution of legal trade shows an improvement in the control of illegal 3T trade, and the same finding can be observed in the 3T mines experiencing a decrease in the direct control of armed groups with less access to these minerals to finance themselves.

Finally, as a consequence of this improvement for the control of 3T minerals, it can be observed that armed groups are turning to gold, the regulation of which remains very rudimentary, as

well as other means to finance themselves and continue their activities, which explains, among other things, the ongoing presence of armed groups in Eastern Congo despite the RCM.

In conclusion, we can say that the hypotheses formulated in the theoretical section are confirmed by the empirical analysis. Indeed, when the RCM is correctly applied as for 3T minerals, the legal trade and official exports do increase and direct control of mines is effectively made more difficult for armed groups, making them turn to new means of financing. What had not been anticipated was the slow and incomplete implementation of the RCM, especially in the most remote and vulnerable areas.

Conclusion

This thesis aimed to answer the research question "Do certification mechanisms prevent the trade of minerals in the Great Lakes Region from financing armed groups?" due to the lack of academic literature over certification mechanisms in that area. This question is essential for policymakers in order to assess the means of cutting this demonstrated link between the illegal exploitation of natural resources and the financing of armed groups in conflict-prone areas. It is, therefore, necessary to know the effectiveness of these tools, which are both peace-building and state-building tools if countries benefit from the income from their resources.

The empirical analysis has resulted in several findings, although it remains limited by the lack of accurate data on the illegal trade in minerals and the complexity of the armed conflict in the DRC over the years, which goes far beyond the natural resources issue (Stearns and Vogel, 2015).

First of all, the analysis of the implementation of the Regional Certification Mechanism in the Democratic Republic of Congo and the impacts of the latter on the legal trade and armed groups financing shows different results for, on the one hand, Cassiterite (Tin), Coltan (Tantalum), Wolframite (Tungsten) and, on the other hand, gold. Artisanal mining has not been monitored the same way for these and that led to different implications for their traceability.

Regarding 3T minerals, the RCM has had a positive impact, even if this has been limited by the slow pace of the validation process and lack of human and financial resources. The legal trade and exports have risen over the years since the implementation of certification schemes, also resulting in less control of 3T artisanal mines and financing opportunities in that sector for armed groups.

On the contrary, the fact that artisanal gold is still largely smuggled and controlled by armed groups can be explained by the failure in implementing regulations and in creating an efficient chain of custody tracking system (Global Witness, 2016).

These findings have several policy implications regarding natural resources governance. First, this thesis has demonstrated the importance of extending the monitoring to less accessible areas that are still subject to armed interference (Matthysen, Spittaels and Schouten, 2019). Secondly, more financial resources need to be invested in order to apply all RCM standards at all stages of the chains of custody. It is also urgent to find an effective tracking system to monitor the trade of artisanal gold and prevent it from financing armed groups. Finally, to cut the link

between the exploitation of natural resources and financing of armed groups in the DRC remains a matter of governance that needs to control the whole region in order to stop armed interference in mines, roadblocks and illegal taxation, as well as to stop the participation of government officials in smuggling operations.

In conclusion, in some respects, certification mechanisms can prevent the trade of minerals from financing armed groups in the Great Lakes Region as demonstrated by the case of the 3T minerals in the DRC. For this to happen, a complete and careful application must be implemented to avoid the case of gold or remote mine sites, whose poor regulation allows armed groups to continue to profit from it.

Given the fact that certification mechanisms have not been implemented to their full potential yet, one could expect that if efforts are made to apply them to their fullest for both 3T minerals and gold, the RCM and other schemes could have a greater impact in reducing the illegal trade of minerals and preventing it from financing armed groups. It is, therefore, necessary to continue to explore the subject in the future, especially that the *EU Conflict Minerals Regulation* has entered into force on the 1st of January 2021 (IPIS, 2020b). This new regulation for the import of 3TG in the European Union will have to be closely followed and can have implications for further research.

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