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Understanding the Failure of International Conflict Mineral Regulations: A Case Study of the Tantalum Mining Industry in the Democratic Republic of the Congo

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UNDERSTANDING THE FAILURE OF INTERNATIONAL CONFLICT MINERAL REGULATIONS: A CASE STUDY OF THE TANTALUM MINING INDUSTRY IN THE DEMOCRATIC REPUBLIC OF THE CONGO

MA Thesis International relations: Global Political Economy

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Contents

1 - Introduction	2
2 - Background	4
2.1 - Tantalum and the Congolese Wars.....	4
2.2 - International Regulations	5
2.3 – Unintended effects	8
3 - Methodology.....	11
3.1 - Theoretical Framework.....	11
3.1.1 - Disregard for the Local Context	11
3.1.2 – Corruption	13
3.1.3 - Reliance on Corporations.....	14
3.2 - Analytical Framework	16
4 - Analysis	19
4.1 – Assessing the Disregard for the Local Context.....	19
4.1.1 - Underestimating the Importance of the Artisanal Mining Sector	20
4.2.2 – Misunderstanding the Local Policy Context.....	21
4.2.3 – Oversimplifying the Activities of Armed Groups.....	22
4.2 - Assessing the Impact of Corruption.....	24
4.2.1 – Corruption Before the Dodd-Frank Act.....	25
4.2.2 – Corruption After the Dodd-Frank Act	26
4.2.3 Neo-Patronage of Political Elites.....	27
4.2.4 - Persistence of Petty Corruption.....	28
4.3 – Assessing the Reliance on Corporations	30
4.3.1 – High costs and Irregular Implementation	31
4.3.2 – Disruption by Mining Corporations.....	32
5 - Discussion and Conclusion	35
6 - Bibliography	36

1 - Introduction

On the first of January 2021, the European Conflict Mineral regulation came into full force. It aims to regulate the export of conflict minerals in order to minimize the violence and human rights abuses associated with these minerals (EU, 2017). Alongside this regulation, the EU publishes a list every 3 years in which certain materials, depending on their economic importance and supply risk, are classified as being of critical importance (EC, 2023). One of the minerals classified as both critical and a conflict mineral is tantalum. A critical material due to it being essential for the capacitors in most consumer-friendly electronic devices (Mancheri et al., 2018), and with a high supply risk due to much of it being mined in the violent mining context of the Democratic Republic of the Congo (DRC). The DRC is the biggest supplier of tantalum in the world, but the extraction of tantalum has been linked to conflict and human rights abuses (Eichstaedt, 2011). The European Conflict Mineral regulation is the most recent of a number of international regulations that have been created by the global north to regulate the mining of conflict minerals. The most notable among these regulations is the US Dodd-Frank Act of 2010, which was specifically directed at regulating conflict minerals in the DRC and the Great Lake Area (US Congress, 2010). In doing so, the Dodd-Frank Act aimed at stopping the export of minerals that supposedly fund the activities of armed groups, consequently reducing violence and human rights abuses. However, the Dodd-Frank Act and comparable regulations do not appear to be having the intended effect. Armed groups remain active in the Eastern provinces of the DRC, and their activities have even increased since 2010 (Hanai, 2021). Moreover, these regulations have rendered artisanal mining sites illegal, consequently adversely affecting local livelihoods (Stoop et al., 2018). This has contributed to an extremely precarious socio-economic situation in the Eastern provinces of the DRC, often increasing human rights abuses and violence compared to the situation prior to the regulations (Parker & Vadheim, 2018).

These issues suggest a discrepancy between the intentions of international conflict mineral regulations and their actual effects. With its modern importance and varying modes of extraction, the tantalum mining industry of the DRC embodies the collision and intertwinement of international regulations, global supply chains, political elites, and local communities. Therefore, this paper will aim to answer the following research question: *“Why are the intended goals of international conflict mineral regulations not being achieved in the context of the tantalum mining industry in the DRC?”*. The subsequent chapter will provide background information regarding tantalum and the Congolese war, the international regulations, and the unintended effects. In the third chapter the methodology will be specified, consisting out of a theoretical and analytical framework. The theoretical framework will theorize that persistence of issues like violence and human rights abuses are a consequence of a disregard for the local context, corruption, and a reliance on corporations. Subsequently, three corresponding hypotheses will be constructed to assess the causal mechanisms behind the unintended effects of international regulations. The analytical framework will describe the method of process tracing, which will be used to test the hypotheses in the fourth chapter. The first section of chapter four will argue that underestimating the importance of the artisanal mining sector, misunderstanding the local policy context, and oversimplifying the activities of armed groups contribute to the unintended effects of international regulations, affirming a disregard for the local context. The second section will argue that corruption tied to neo-patronage networks, as well as amongst local bureaucrats and the army, has hindered the implementation of the international regulations, resulting in violence and human rights abuses. The third section will argue that the reliance on downstream corporations and multinational mining corporations is ineffective in implementing due diligence schemes, and often exacerbates human right violations and violence due to it displacing and exploiting artisanal miners. The last chapter will discuss and conclude the findings.

2 - Background

2.1 - Tantalum and the Congolese Wars

Often categorised with tungsten and tin as 3T, tantalum is a material that is derived from coltan mineral ores. As it is a primary component for capacitors within electronics, tantalum is pivotal for the functioning of modern appliances ranging from household equipment to transport and industry (Mancheri et al., 2018). Most of coltan ore in the world is mined by large-scale industrial mining corporations (Nest, 2011). However, in the DRC small scale artisanal mining is the dominant form of mining, with over 16 percent of the DRC's population being dependent on artisanal mining for a living (Stoop et al., 2019). In 2022, the mine production of tantalum in the DRC comprised around 43% of the world-wide tantalum mine production (USGS, 2023). Other important sources of tantalum include Brazil, Australia, Nigeria and Rwanda, where the latter is often intertwined with the tantalum supply chain of the DRC (Schütte & Näher, 2020). The DRC's position in the global tantalum supply, represents a shift in which the epicentre of the global tantalum supply has shifted from Australia and Brazil towards central Africa, starting at around 2006 (Bleiwas, et al., 2015).

The timing of this shift is no coincidence. From 1996 to 2002, The DRC was the main stage for the most violent set of conflicts since the Second World War, with over 5 million deaths (Cook, 2013). In the aftermath of the Rwandan civil war and genocide, the First Congolese War started after the Tutsi rebel forces of Laurent Kabila attacked Hutus in Eastern Congo that fled Rwanda after the civil war in 1996. At that moment, the former Zaire was plagued by instability and economic strife, leading to much displeasure with the terminally ill military dictator Mobutu. The conflict in the East escalated, leading to Kabila's rebel group, the ADFLC, overthrowing Mobutu whilst being heavily supported by Rwanda and Uganda in 1997. However, a year later president Kabila denounced its Tutsi supporters, which led to A rebellion in the North-East, eventually creating the rebel group: Rally for Congolese Democracy (RCD). Together with Rwandan and Ugandan forces, the RCD conquered the Eastern Provinces of Congo, starting the Second Congolese War. After significant gains by the RCD, Kabila's government gained support from many surrounding countries including Angola, Zimbabwe and Namibia. The complex web of alliances increased the complexity of peace

negotiations, resulting in a bloody stalemate that lasted until the assassination of president Kabila in 2001. After Kabila's son assumed power, peace negotiations started in 2002, with disarmament and the establishment of transnational government formally ending the conflict in December 2002 (Tamm, 2016).

Between 1982 and 2002, the mining sector in Congo was characterized by local artisanal mining. During colonial times however, much of Congolese minerals were mined industrially. Nevertheless, in 1982 president Mobutu liberalized mining exploitation, leading to Congolese nationals establishing artisanal mines (Geenen, 2014). During the Congolese war, the artisanal mines became sites of strategic importance, with the violent extraction of minerals serving as a means of financing the conflict (Global Witness 2004). After the end of the Second Congolese War in 2002, new Mining Code and regulations were developed that prioritized large scale industrial mining, consequently attracting foreign mining companies like AMF and Tenke Mining co. (Mazalto, 2004). With the country holding elections in 2006, it is likely that the newly found stability relative to the years prior and the new mining regulations were large contributing factors to the increased share of the DRC in global tantalum production (Booyesen, 2007). Nevertheless, even after peacekeeping operations such as MONUSCO, over 130 armed groups have remained in the Eastern Parts of Congo after 2003 (Hanai, 2021). These groups target artisanal scale mining sites and illegally tax them for profit, often resulting to violence in the process (Stoop et al., 2019). Interestingly, this additional risk has not resulted in mining corporations moving back to more stable environments like Australia. With the DRC estimated to have 7 to 8 percent of global coltan reserves, it does not appear to be a question of availability, but of price (Nest, 2011).

2.2 - International Regulations

After the Congolese war, the DRC was projected to be an important global supplier of tantalum. The overwhelming demand for PlayStation 2 consoles in 2000 led to a tantalum rush that exposed the DRC's precarious mining system to violence (Dort, 2000). In 2001 a UN panel recommended an embargo on the trade of minerals from the Eastern provinces of the DRC due to the intertwinement of minerals and the financing of conflict (UN, 2001). Furthermore, such an embargo could be combined with creating regulations that were supported and implemented by tantalum using industries. These measures started to gain ground in 2000's, creating the "partners for peace" approach in which tantalum using

industries could contribute to the reconstruction of the DRC's mining sector (Hayes & Burge, 2003). From the 2010s onwards, many regulations came into effect that mirrored the "partners for peace" approach. The most notable of these regulations was the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010. Under section 1502, titled 'Conflict Minerals', it is stated that *"the exploitation and trade of conflict minerals originating in the Democratic Republic of the Congo is helping to finance conflict characterized by extreme levels of violence in the eastern Democratic Republic of the Congo, particularly sexual- and gender-based violence, and contributing to an emergency humanitarian situation"* (US Congress, 2010: 2213). Under this law, private companies are obliged to report the measures taken to exercise due diligence. Consequently, in order to be certified 'DRC Conflict Free', companies need to provide evidence that the manufactured products do not contain conflict minerals. In addition, a strategy to address the linkages between conflict minerals and armed groups was formulated. Measures of this strategy include: Monitoring the commercial activity armed groups, stimulate stronger local governance and transparency, provide punitive action against companies that profit from commercial activities related to conflict minerals, and mapping mineral-rich zones and trade routes of armed groups (US Congress, 2010: 2213-2218).

The Dodd-Frank Act was in line with the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas, a guidance that provides recommendations for companies to *"respect human rights and avoid contributing to conflict through their mineral or metal purchasing decision and practices."* (Figure 1). In order to do so and break the link between conflict and trade, the OECD recommends comparable measures to the Dodd-Frank Act like implementing a downstream supply chain transparency system to identify smelters and refiners, and suspend activity with supply chains that may support armed groups (OECD, 2011). Comparably, in 2012 the UN published a guideline called "Toolkit and Guidance for Preventing and Managing Land and Natural Resources Conflict" (UN, 2012). In 2017, the EU published their new Conflict Minerals Regulation which came to full effect in 2021. Like the Dodd-Frank Act and Due Diligence guidance, it focuses on having companies check if *"the minerals and metals they import have been mined and processed responsibly."* It requires companies/individuals to follow the five-step OECD framework of establishing management systems, identify risk in the supply chain, design a strategy to respond to these risks, carry out a third-party audit of supply due diligence, and report the

findings. Contrary to the Dodd-Frank Act however there are a few differences. The EU regulation employs a global geographical scope, rather than only focussing on the Great Lake region. It also focusses on having a due diligence system in place, rather than the certification of being “conflict” free. Lastly, it also distinguishes between the importers of minerals and the downstream electronic firms, with the regulation being mandatory for the former (EU, 2017). As of 2023, both the OECD and the United States have updated the Due Diligence Guidance and Dodd-Frank Act. The 2016 version of the Due Diligence Guidance was only minorly updated to clarify that the guidance can be applied to other minerals rather than only tin, tantalum, tungsten and gold (OECD, 2016). On top of that, in 2018 the OECD published the OECD Due Diligence Guidance for Responsible Business Conduct in 2018, which serves as a more general guidance for all sorts of businesses (OECD, 2018). The 2022 Dodd-Frank Material Disclosure Improvement Act eliminated the requirements to disclose the use of conflict minerals originating in the Democratic Republic of the Congo by the issuer (US, 2022).

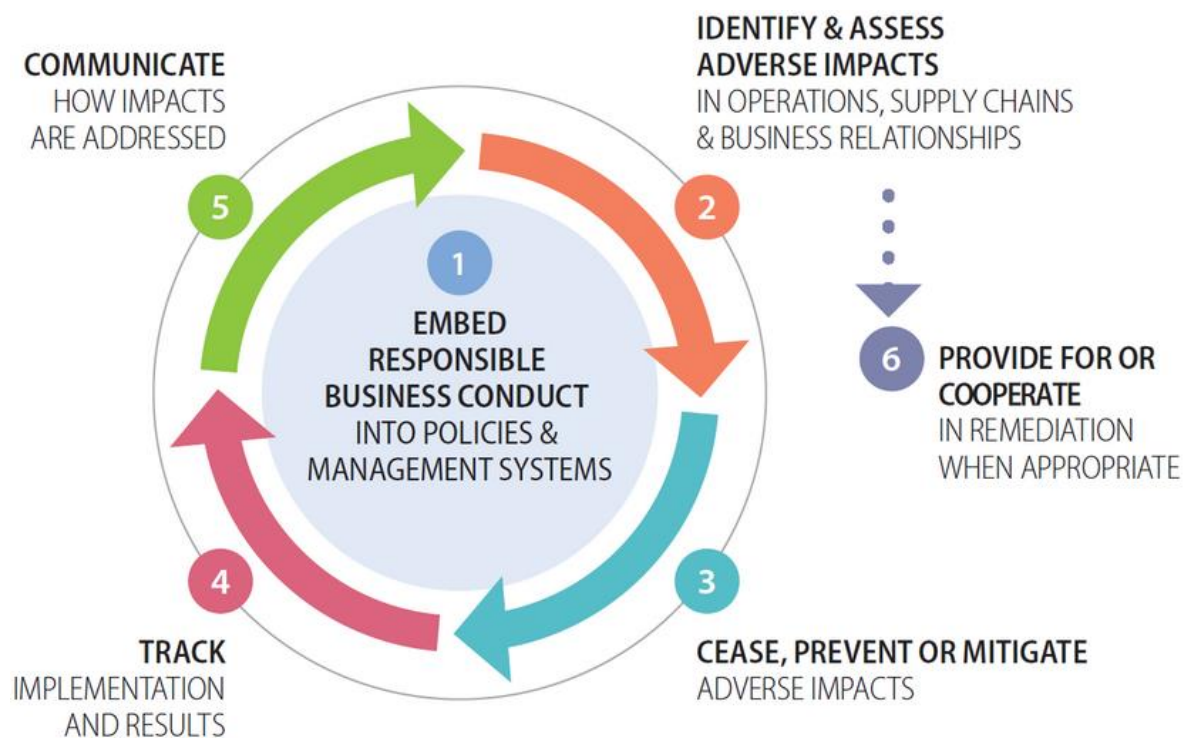


Figure 1: the six stages of the due diligence process, adopted from OECD (2021)

2.3 – Unintended effects

The success of these measures is debatable. With violence and human rights abuses not diminishing in the areas targeted by the regulations, it can be argued that there is a discrepancy between the intentions and the effects. As a result, multiple unintended effects can be observed. The UN group of experts in the DRC have been tracking the implementation and effects of the Dodd-Frank Act since 2011. In 2011, it was reported that steps have been taken to implement due diligence. However, implementation in the tantalum-rich Eastern conflict provinces was lacking. Smuggling was reported, and traders in the East were not implementing due diligence while selling to Chinese buyers that did not require tags. Due diligence implementation was reportedly weak at gold mines, remaining a source of funding for armed groups, whose presence increased in the East (UN Security Council, 2011). In 2014, the group mentions advancements in the validation of artisanal tantalum mining sites. Nevertheless, the smuggling of 3T minerals, and especially gold, into Rwanda increased, consequently undermining the credibility of certification. On top of that, many human rights violations were reported in the Eastern provinces (UN Security Council, 2014). In 2018, similar human rights violations and smuggling was reported (UN Security Council, 2018). In 2019, the group reemphasized the weak enforcement of regulations at gold mines, and tied human-rights-violating armed groups to the trade and smuggling of conflict minerals like tantalum (UN Security Council, 2019). In 2020, the group questioned the regulations and deemed that the tagging system was susceptible to fraud (UN Security Council, 2020). In 2021, the group again questions the effectiveness of regulations like the Dodd-Frank Act, especially since illicit activities were continuing at tantalum mines. On top of that, the group reported an increase in the illegal trade of gold, with much being exported to Dubai and Hong Kong (UN Security Council, 2021).

These events are supported by data from the Armed Conflict Location & Event Data Project (ACLED) and the International Peace Information Service (IPIS). From 2010 to 2020, the number of civilian casualties in the Eastern, mineral rich, regions of the DRC have immensely increased. As of 2018, armed groups have withdrawn out of 80% of 3T mines, which includes coltan mines (Hanai, 2021). Nevertheless, armed groups are still very active around gold mines and committing a large number of violent human rights violations. For example, violence against civilians increased by 70% in gold mining areas after the implementation of the Dodd-Frank Act (Stoop et al., 2018). In 2021, the OHCHR published a report which stated that in 2021 the number of human rights violations committed by armed groups in the entirety of the DRC was around 62%, with the Eastern provinces of North Kivu, South Kivu and Ituri having a much larger percentage (OHCHR, 2021). Around mid-2022 reports noted a resurgence of armed groups in Eastern Congo. Supposedly backed by Rwanda, the activity of armed groups like the March 23 movement reminds of the events leading up to the Second Congo War (ACLED, 2023).

Whether the international regulations like the Dodd-Frank Act have reduced the amount of tantalum related to conflict is questionable. In 2014, it was estimated that over 66% of the tantalum contained in products can be attributed to unaccounted African production, expected to be related to “illegal” artisanal mining (Mancheri et al., 2018). In 2021 the US Government Accountability Office (GAO) published their annual report on company sourcing of conflict minerals. As is visible in figure 2, between 2014 and 2020 the percentage of American companies that reported to know the country of origin has fluctuated between 49% and 58%. The percentage of companies that determined that their minerals are from the DRC or neighbouring countries has followed an upward trend with 29% in 2015 and 42% in 2020. Although more companies know where their minerals come from relative to 2014, the measures do not appear to lower the consumption of conflict minerals, let alone tackle the related human rights abuses (GAO, 2021).

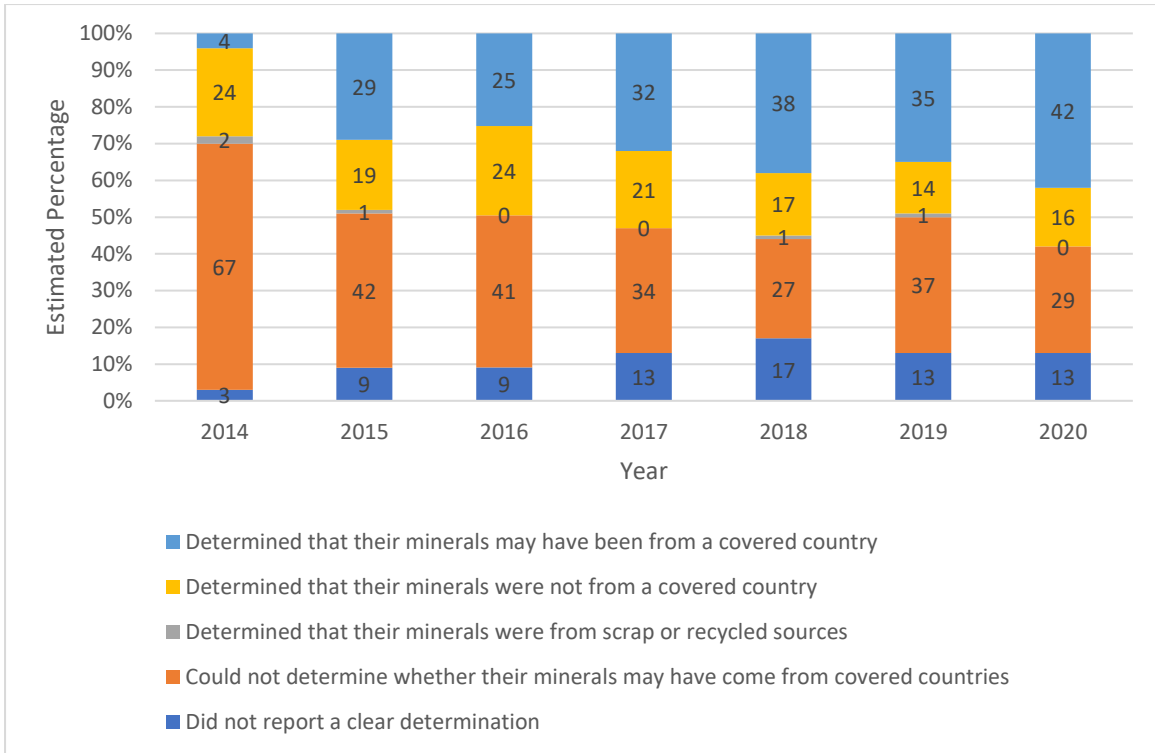


Figure 2: Source of Conflict Minerals in Products as determined by Companies' Reasonable Country-of-Origin Inquiries, Reporting Years 2014-2020, Based on GAO (2021)

3 - Methodology

3.1 - Theoretical Framework

Policy implementation does not exist in a vacuum, making policy success or failure dependent on an immense number of factors. It is the result of complex interplay between politics, bureaucrats, governing instruments, local actors and other pre-existing or prospective policies (May, 2015). Attributing the unintended effects of an international regulation like the Dodd-Frank Act to policy implementation failure, therefore oversimplifies the issue. It is the reasons for implementation failure which making the analysis of the issue worthwhile. The following theoretical framework will explore the causal mechanisms for implementation failure of policies related to conflict minerals and the extraction of resources in precarious circumstances. By utilizing literature and existing theories, three hypotheses will be created. The first section will theorize the causal mechanism of the disregard for the local context, the second section will theorize the causal mechanism of corruption, and the third section will theorize the causal mechanism of the reliance on corporations, all three in relation to the discrepancy between the intended and actual effects of international regulations, such as the Dodd-Frank Act.

3.1.1 - Disregard for the Local Context

The distance between the actors formulating and creating policy, and the actors implementing policy is referred to as the “policy implementation gap”. The magnitude of the policy implementation gap can hamper the bureaucratic and political understanding of the issue due to top-down policies often assuming a hierarchical and linear process of creation and implementation. In turn, this can significantly contribute to policy succeeding or not (Hudson, Hunter & Peckham; 2019). In the case of top-down international policies, the implementation gap is larger larger than in for example a national or municipal context, making it more susceptible to failure. Examples such as the European Union’s failure in implementing the common fishing policy (Daw & Gray, 2005), or the failure of NAFTA in solving environmental issues (Martinezalier, 1993), illustrate how the size of the policy implementation gap has adversely impacted the results. More specifically, a similar pattern can be observed in the top-down governance of natural resources and conflict. The increase

of armed rebel groups since the 90's in the global south has assumed to be driven by these groups wanting to gain or maintain control over natural resources. Policy and NGO statements have been argued to reflect this as they advise to cut their access to natural resources in order to reduce the violence. Nevertheless, these interventions assume certain motivations behind the activities of armed groups. The distance between the actors formulating policy and the subjects of that policy can therefore result into a disregard for the local context (Cuvelier et al., 2014a).

In this case, "the local context" refers to factors that play a role in the daily reality of the affected local populations, consequently also affecting the success for implementation. For example, in 2008, Colombia experienced an upsurge in violence related to illegal gold mining. Idrobo et al. (2014) argue that a poor legal framework for defining property rights in indigenous areas opened the door for the activity of armed groups. Comparably, artisanal scale mining in Sub-Saharan Africa has often been linked to conflict (Mancini et al., 2021). With many people engaging in artisanal scale mining, it is an essential component to local livelihoods. Responsible sourcing initiatives have unsuccessfully incorporated artisanal scale mining into the "formal" mining sector, often negatively impacting local populations (Grant & Wilhelm, 2022). In order to manage the relations between artisanal and large-scale mining, solutions like creating designated areas for artisanal scale mining have been proposed (Corbett et al., 2017). However, like in the case of Sierra Leone and Liberia, top-down governance of the artisanal gold mining sector has exacerbated human rights abuses and exploitation due to a failure in effectively creating a provision for the people and communities partaking in artisanal mining (Kalokoh & Kochtcheeva, 2022). These examples highlight the interaction between local livelihoods and mining regulations, but a disregard for the local context can address other local factors as well. While causes for the disregard range from the cultural differences between the actors that formulate policy and implement policy (Hamm & Smandych, 2019), to the size of the aforementioned policy gap, this paper will foremostly explore the causation between the disregard for the local context and the unintended effects of interventions. Therefore, the first hypothesis will be: *"Increased disregard for the local context will increase the discrepancy between the intended and actual effects of the international regulations that regulate tantalum sourcing in the DRC"*.

3.1.2 – Corruption

The effect of corruption on development has been subject to discussion. Corruption can be seen as a tax that discourages investment and can hamper the implementation of policy (Mauro, 1995). At the other side, others argue that corruption can facilitate development by bypassing bureaucratic regulations and institutions, consequently decreasing transaction costs (Nye, 1967). Aïssaoui & Fabian (2022) note that the effect of corruption could depend on the form of corruption, as it a complex phenomenon. Ang (2020) makes the distinction between grand and petty corruption, relating to corruption among political elites and street-level bureaucrats respectively. Both forms of corruption negatively impact policy implementation through for example the misuse of funds, but at different levels. With regards to human rights, states with high levels of corruption are associated with having a poor human rights record (UN, 2002). The direct link between corruption and human rights violations has led to the question if corruption can be conceptualized as a human right violation in and of itself (Peters, 2018). It can therefore be considered that government corruption is intertwined with misgovernance and human rights abuses. In the case of resource governance, corruption in the management of natural resources has often been characterized by exploitation and human rights violations (Anderson, 2017). Sub-Saharan Africa specifically, has often been used as an example for the “resource curse”. In this case, weak institutions facilitate the control of resources by political elites. In turn, the unequal distribution of revenue from those resources fuel inequality, corruption, and strengthens the grip of political elites on power (Van der Ploeg, 2011). Empirical evidence even suggests that resource-poor countries such as Benin and Mali have had more success in implementing democratic reforms than resource-rich countries like Nigeria and Gabon (Jensen & Wantchekon, 2004).

These dynamics are especially observable in the mining industry. From first-hand experience, Obiora (2010) explains how corruption within the Nigerian mining industry hampers the ability to generate and liberate resources that can be used to improve human rights situation. The neglect of the Nigerian mining industry created a vacuum that was filled by opportunistic exploitation when Nigeria’s oil industry was in crisis. Research by Knutsen et al. (2017) on local corruption in industrial mines in Africa indicates that when mining activity increases, so do bribe payments. On top of that, an increase in mining revenue incentivizes local officials to require more bribes. Furthermore, grand corruption and mining are connected by the

state's ability to issue mining permits. In the case of the mineral sector in Indonesia, the government has gained unwanted attention due to its abuse of granting business mining permits under dubious circumstances (Fernando et al., 2023). Similarly, in South Africa and Kenya governments have prioritized economic interests through private investment in the mining industry, and have paid little to no attention to the environmental and social impacts. In turn, this poor management has resulted in many of the aforementioned issues including displacement, conflict and human right violations (Igbayiloye & Bradlow, 2021). It can be concluded that corruption is multi-layered and is both a cause and consequence of many of the issues that have been tied to resource extraction. In short, both grand and petty corruption can hamper the implementation of developmental policy, and exacerbate human rights violations. In order to examine the effect of corruption on the case of tantalum in the DRC, the second hypothesis will be: *“Increased levels of grand and petty corruption will increase the discrepancy between the intended and actual effects of the international regulations that regulate tantalum sourcing in the DRC”*.

3.1.3 - Reliance on Corporations

Multi-national corporations and the mining industry have almost become synonymous with each other. The industrial mining sector in developing countries is dominated by multi-national corporations headquartered in Europe, the US, Australia and China (Gifford et al., 2010). With the OECD guidelines and regulations like the Dodd-Frank Act indirectly promoting industrial mining vis-a-vis artisanal mining, multi-national corporations have received a pivotal role in legitimizing the mining sector in the DRC (Grant & Wilhelm, 2022). Making these corporations partners in implementing and realising due-diligence has not come without critique. Cusato (2021) is at the forefront of this critique, arguing that promoting the extractive industry as a partner for peace legitimizes their practices and protects corporations from scrutiny. This can be problematic since the activity of extractive corporations have often been linked to issues like conflict and human rights violations (Kawamoto, 2012).

The implementation of due-diligence on itself is tasked to the downstream corporations that use minerals like tantalum in their products. The Dodd-Frank Act, the European Conflict Mineral Regulation, and the OECD Due Diligence Guidelines all rely on the compliance of corporations in implementing due diligence across tantalum supply chains, arguably

employing a form of neoliberal pragmatism (Partiti & Van der Velde, 2017). Additionally, it can be argued that corporations taking up such state like roles can evoke questions of legitimacy. Within mineral supply chains there are power imbalances where the capital of corporations is more mobile than labour. Companies can easily outsource certain activities if it is more profitable to do so, leaving mining communities in precarious positions. In turn, this can lead to problem shifting where the root causes are not solved, but avoided from a corporate perspective (Hofmann et al, 2015). This liberal or free-market approach that emphasizes 'clean' mineral supply chains rather than the root problems, can increase the inequalities and exploitation that companies directly and indirectly cause to artisanal mining communities (Le Billon & Spiegel, 2022). On top of that, companies have significantly contributed to the formulation of legislation, especially private corporations operating in sectors ranging from mining and apparels to consultancy (Arikan et al., 2017). For example, senator Christopher Dodd enjoyed a lot of financial support throughout his career by consultancy firms, and by defining the corporations as "partners" in solving the conflict mineral issues, it provided consultancies with demand for their advisory services (Jelinek, 2015).

The role of corporations in extractive industries is one that often cannot be separated from the role of the state. Whether extraction is enabled by a liberal approach (Islam et al., 2017), or by corruption in handing out permits (Fernando et al., 2023), extractive activities of corporations happen within legal frameworks. An extreme case would be the activity of environmental militias and corporations in Brazil, where federal institutions have reduced surveillance and monitoring, consequently causing environmental degradation and displacement through illegal mining and deforestation (Souza et al, 2022). Less extreme is the previous mentioned example of African governments seeking private investments (Igbayiloye & Bradlow, 2021). While governments and corporations are intertwined with each other, it does not mean that both have no agency of their own. Government activity and corruption can for example be driven by political interests, just like the degree to which companies are driven by making profits affects their choice to lobby or to comply with socially responsible practices (Berman et al., 2017; Cusato, 2021). Therefore, to make a clear distinction between government corruption and corporate activity within the context of the tantalum mining sector in the DRC, the third and final hypothesis will be "*Increased reliance on corporations*

and market approaches will increase the discrepancy between the intended and actual effects of the international regulations that regulate tantalum sourcing in the DRC”.

3.2 - Analytical Framework

With the previous section identifying potential causes for the discrepancy between the intended and actual effects of international regulations, the following section will develop an analytical framework for testing them. Firstly, it is important to consider that the identified causal mechanisms are tied to a specific time frame. The Dodd-Frank Act came into full effect in 2010, and the EU Conflict Minerals Regulation in 2021, both in accordance with the OECD due diligence guidelines. The causal mechanisms will be analysed in a time period that ranges from 2010 to the present. However, in the case for corruption, this analysis will describe the pre- 2010 situation to determine if the international interventions have affected the status-quo. In order to carry out such an analysis, the method of process tracing will be employed.

Process tracing is a method aimed at testing hypothesized causal links between “a change in the status-quo”, like an intervention, and a certain outcome over a specific period. It is a complex method that can be categorised into different “types”, depending on the inductive or deductive nature of the analysis (Trampusch & Pallier, 2019). For this specific case, this paper will make use of what Beach & Pedersen (2013) refer to as “Theory-testing process tracing”. This type of process tracing aims to test the theory or hypothesis that explains the causality between the change and the outcome. Contrary to the quantitative testing of hypotheses, process tracing primarily uses qualitative data to test causation. Since qualitative data is relatively abstract compared to quantitative data due to its contextual nature, process tracing affirms, weakens, confirms and eliminates a hypothesis rather than accepting or rejecting it within a level of significance (Collier, 2011). Determining if a hypothesis is affirmed, weakened, confirmed or eliminated rests on the fulfilment of the criteria for one or more process tracing tests. These tests are the Straw-in-the-Wind test, Smoking-Gun test, Hoop test and Doubly Decisive test (Table1).

		Sufficient for Affirming Causal Inference	
		No	Yes
Necessary for Affirming Causal Inference	No	<p><i>Straw-in-the-Wind</i></p> <p>Passing: Affirms relevance of hypothesis but does not confirm it. Failing: Hypothesis is not eliminated but slightly weakened.</p>	<p><i>Smoking-Gun</i></p> <p>Passing: Confirms Hypotheses. Failing: Hypotheses is not eliminated but somewhat weakened.</p>
	Yes	<p><i>Hoop</i></p> <p>Passing: Affirms Relevance of hypothesis but does not confirm it Failing: Eliminates Hypothesis</p>	<p><i>Doubly Decisive</i></p> <p>Passing: Confirms hypothesis and eliminates others Failing: Eliminates Hypothesis</p>

Table 1: Process Tracing Tests for Causal Inference (Adapted from Collier, 2011)

To test if the effect of the disregard for the local context, corruption, and reliance on corporations cause the discrepancy between the intended and actual effects of the international regulations that regulate tantalum sourcing in the DRC, some tests will be more relevant than others. Passing both the Smoking-Gun and Doubly Decisive tests confirms the hypotheses. Nevertheless, since the unintended effects that embody the discrepancy are intertwined with a range of different issues, it will be nearly impossible to definitively determine that something like corruption in implementing the interventions caused the observed increase in human right abuses. With the tantalum industry in the DRC being an immense black box, there will always be a possibility that these abuses were caused by something that has not been accounted for. Therefore, this paper will mostly apply the Hoop test on the hypotheses. This test will be able to affirm and establish the relevance of a hypothesis or reject it, which is the most plausible outcome given the nature of this analysis.

To test the hypotheses, it is necessary to gather adequate data. As mentioned earlier, process tracing is a method that primarily tests hypotheses using qualitative data, sometimes accompanied with the use of descriptive quantitative data. According to the Centre for Development Impact (2013), data or evidence can be classified as account evidence, trace evidence, pattern evidence, and sequence evidence. Account evidence refers to empirical data like interviews, observations and oral accounts. Trace evidence refers to evidence that confirms the existence of the hypothesized causal mechanism, like bribe payments for corruption. Pattern evidence are statistical patterns that can be used to quantify certain phenomena, for example the amount of human right infringements. Lastly, sequence evidence refers to the chronological order of events where a cause needs to precede the effect in order to be valid. This study will utilize all four kinds of evidence, with an emphasis on account evidence. Since this study will not be complemented by an ethnography or comparable method, it will rely on secondary sources like reports, research and other publications for account evidence. Finally, it is important to mention that determining if certain data is evidence for a causal mechanism depends on the use of indicators. Due to the complex nature of the analysis, data will be individually assessed, rather than determining the relevance of the data based on pre-operationalized indicators.

4 - Analysis

4.1 – Assessing the Disregard for the Local Context

The following section will assess evidence to test the first hypothesis, arguing that one of the reasons why international regulations like the Dodd-Frank Act have failed is due to the disregard for the local context. These regulations aimed to contribute to improving the humanitarian situation in the DRC, but a disregard for the complex nature of that humanitarian situation has led to unintended effects. By effectively creating an embargo on artisanal mining activity, these international regulations negatively impacted many of the livelihoods that relied on artisanal mining (Geenen, 2012; Seay, 2012). The iTSCi traceability scheme partly tried to address this issue by trying to certify artisanal mines and formalize them. However, in the tantalum-rich Eastern Provinces of the DRC, the implementation of the scheme was not tailored to fit implementation in the local policy context, resulting in new tensions and in many artisanal mines remaining uncertified (Diemel & Cuvelier, 2015). In order to make a profit and sustain the millions of livelihoods that depend on artisanal mining, the Dodd-Frank Act and the iTSCi indirectly stimulated producers and traders to create smuggling networks to bypass certification (Radley & Vogel, 2015). This created new opportunities for armed groups, which, contrary to the assumption inherent to the Dodd-Frank Act, do not only depend on the taxation of one mineral for existence. In fact, the increased levels of violence at gold mines illustrate that armed groups have switched from taxing tantalum mines to gold mines, worsening human rights violations in many cases (Hanai, 2021). In general, it can be argued that international regulations and due diligence guidelines have failed to adequately address the needs of the people affected by the legislation (Okowa, 2020). Even if the Dodd-Frank Act has been relatively successful in more stable provinces like Katanga, an approach that takes into account the local context of the Eastern provinces is needed to address the root cause of the humanitarian issues. Therefore, it can be argued that these events and phenomena are linked to issues resulting from a disregard for the local context. More specifically, they are linked to the underestimation of the importance of the artisanal mining sector, misunderstanding of the local policy context, and oversimplification of the operations of armed groups.

4.1.1 - Underestimating the Importance of the Artisanal Mining Sector

Kabila's mining ban revealed a significant underestimation of the importance of the artisanal mining sector, which was reflected in the implementation of due diligence guidelines (Geenen, 2012). In September 2010, a few months after the Dodd-Frank Act was signed to law by president Obama, president Kabila announced a mining ban in the conflict-ridden provinces of Maniema, North-Kivu and South Kivu. Following a similar narrative to the Dodd-Frank Act, it aimed at tackling the problem of informalization in the artisanal mining sector, reasserting government control in the region, and cutting of funding for armed groups (Geenen, 2012). The ban created a number of problems, while solving none of the problems it aimed to tackle. With the important role of artisanal mining in the region, the ban on artisanal mined minerals like tantalum resulted in unemployment which in turn fuelled violence and robberies, leading to greater militarization (Ibid.). While the artisanal mining sector was shrouded in insecurity, the position of large-scale mining was strengthened as they were considered "legal". Geenen (2012) argues that this top-down formalization policy did not work, as the miners were not incentivised to join the decision-making process. It represents the issue of artisanal mining being seen as a burden for development, whilst being an important livelihood.

Although the mining ban was revoked in March 2011, the Dodd Frank act had a similar effect, effectively creating an embargo on artisanal minerals due to their assumed link to conflict and human rights violations. The direct effect of this was that 2 million Congolese miners were put out of work, with the majority coming from the Eastern region. The socio-economic instability that followed did not improve the daily lives of Congolese people and the violence in the region (Seay, 2012). For example, the embargo reduced mothers' access to infant healthcare goods and services, in turn increasing the child mortality rate (Foltz et al., 2016). Artisanal miners and mineral traders were increasingly demonized, and the networks they operated in regarded as anarchic. Due to the Dodd-Frank Act categorization of artisanal tantalum as not being "conflict free", it disregards the differences in business practices. This is especially striking since traders and other Congolese stakeholders have established transparency within their supply chains themselves (Mantz, 2018). At the same time, just like with the mining bans, the Dodd-Frank Act strengthened the position of industrial mines. Industrial mines tend to secure their concessions better, leading to less battles with armed

groups around the mining areas compared to artisanal mines, possibly leading to the slight decrease in civilian looting observed at tantalum mines (Stoop et al., 2018). Nevertheless, expanding industrial mining increases riots and violence when it crowds out artisanal mines. Even if artisanal activities can be demarcated with artisanal exploitation zones, few have been granted, while some have been closed down, giving industrial mining a privileged position (Stoop et al., 2019). Formalizing artisanal mining and incorporating it as a legitimate source of minerals in global value chains would go a long way in solving these problems and more. Formalization can for example increase the opportunities of women working in the sector, who now are the most vulnerable to demonization (Byemba, 2020). While validation and traceability schemes are in place, their implementation looks to be lacking.

4.2.2 – Misunderstanding the Local Policy Context

Around 2014, the International Tin Research Institute (ITRI) introduced a traceability scheme through iTSCi. By bagging-and-tagging minerals like tantalum, iTSCi aims to certify artisanal mines to allow for the legal trade of minerals (iTSCi, 2023). However, in the Eastern Kivu provinces, the validation has encountered certain difficulties. Validating sites can be a tedious process and can take years due to the area being afflicted by conflict. Moreover, a green validation simply means that the site was question free at the time of validation, making the system susceptible to “Green Washing”. On top of that, tags have often been reported to be fraudulently re-used on untagged minerals (Radley & Vogel, 2015). On the other side, the iTSCi scheme has been relatively successful in the Katanga provinces, something which has been attributed to the local policy network and additional funds for iTSCi provided by Indian mining company MMR (Diemel & Cuvelier, 2015). In North and South Kivu, the certification is supposed to be done by both local and international actors, but the extent to which that happens is unclear due to ITRI being untransparent. Contrary to Katanga, the traceability scheme in Kivu does not appear to make a provision for the participation of local stakeholders and implementation of the already existing certification networks (Mantz, 2018). By 2019, only 17.5% of tantalum, tungsten, tin and gold mines were certified by the iTSCi scheme (Byemba, 2020). Not only has the scheme been hard to implement, it has created new issues as well. Slow certification forces producers and traders to illegal practices like smuggling in order to sell their products and make a living (Radley & Vogel, 2015). Not anticipating these border crossing effects illustrates that the iTSCi scheme misunderstands the

interconnectedness within and outside of the local policy context (Wakenge et al., 2020). Furthermore, iTSCi has created monopsonies by gatekeeping the traceability market for traders, consequently reducing competitiveness for producers. Producers that want to sell their minerals are therefore forced to sell at a low price if they want to adhere to the traceability scheme (Cuvelier et al., 2014b). In turn this creates new tensions between producers and traders (Radley & Vogel, 2015). While the implementation in Katanga illustrates the potential of formalizing the artisanal mining sector with traceability schemes, misunderstanding the local policy context can hamper implementation and create new issues.

4.2.3 – Oversimplifying the Activities of Armed Groups

Regardless of the due diligence schemes like the Dodd-Frank Act, armed groups remain active in the Eastern provinces of Congo to this day. In fact, evidence from the UN group of experts and data from ACLED and IPIS suggest that activity of armed groups is even increasing (Hanai, 2021). A reason for this is the oversimplification of the activities of armed groups. Inherent to the Dodd-Frank Act is the assumption that armed groups are mostly financed by the illegal taxation of minerals. Nevertheless, the activity and tax regimes of armed groups are more complex than only mineral taxation. Laudati (2013) identifies six other secondary economies that are central to the wide range of activities rebel groups in the DRC are engaged in. These include: roadblock taxes; civilian taxes; charcoal, timber and hemp taxes; pillaging of livestock; looting; and labour and service. Especially in the Kivu provinces, roadblocks are one of the main sources of illicit financing of armed actors (Schouten et al., 2017). Furthermore, as is apparent from the UN group of experts reports, armed groups appear to profit from the increased amount of smuggling after 2010. With the Dodd-Frank Act devaluing artisanal minerals, armed groups play a pivotal role in smuggling coltan ore to and from other areas. More specifically, intricate networks have been created where minerals are smuggled to bypass the certification scheme and be sold for a higher price (UN Security Council, 2014). For example, in South-Kivu coltan ore is smuggled through canoes into Burundi and Rwanda, often with the help of armed groups, while claimed to be extracted from local mines (Stoop et al., 2018).

Moreover, armed groups in Eastern Congo have often been reported to offer protection from other armed groups to communities, filling in for the state that cannot provide this security (Sanchez de la Sierra, 2020). Even if civilians themselves are forced to pay tax for protection,

trying to decouple artisanal mines from armed groups with the Dodd-Frank Act has led to communities living in more precarious situations than before (Parker & Vladheim, 2017). Regardless of the activity, armed groups are tied to economies of violence. Trying to hamper the taxation of certain minerals will therefore not end violence but change the nature and location of the experienced violence. Such a change is observable in the shift of violence to the gold mines on which due diligence are harder to enforce. Contrary to 3T, buyers are exempt in proving where the gold came from due to it having certain properties. Gold has less traceable waste rock than 3T and can be processed and melted higher up the supply chain. This exemption combined with the increasing demand from Chinese and Middle-Eastern markets has led to gold production rising since the implementation of the Dodd-Frank Act (Parker & Vladheim, 2017). This increased profitability of gold compared to pre-2010, could be tied to the increase in violence surrounding gold. From 2011 to 2015, battles and looting around gold mines increased by 135% and 138% respectively compared to pre-Dodd-Frank Act averages, suggesting a switch from coltan to gold mines (Stoop et al., 2018). Solving the issue of violence will therefore need an approach that addresses the root causes for the existence of armed groups. The social and economic conditions, especially in the Eastern provinces, lead to constant uncertainty and struggles for survival. Therefore, the existence of armed groups represents the fragility of livelihoods in the DRC (Laudati, 2013).

Considering the evidence for the underestimation of the importance of the artisanal mining sector, misunderstanding of the local policy context, and oversimplification of the operations of armed groups, it can be concluded that the first hypothesis, *“Increased disregard for the local context will increase the discrepancy between the intended and actual effects of the international regulations that regulate tantalum sourcing in the DRC”*, is affirmed.

4.2 - Assessing the Impact of Corruption

The second part of the analysis will assess evidence to test the second hypothesis, arguing that failure of international regulations like the Dodd-Frank Act can also be attributed to the impact of corruption on the implementation of regulations. Since its independence until today, the DRC's mining sector has been characterized by corruption. Both the Mobutu and Kabila regimes have employed systems of patronage that profited them and their inner circles, consequently taking away funds that could be used for development (Global Witness, 2004; Kodi, 2008). After the Dodd-Frank Act, these practices continued (Polinares, 2013). It is important to note that the mining practices that were profitable for political elites, were not the mining practices that international regulations like the Dodd-Frank Act tried to address. Political elites profited from large scale industrial mines that mine more profitable minerals like copper and cobalt in more stable regions (Callaway, 2018). International regulations try to address conflict minerals like tantalum that are mined at artisanal mines. Even if the profits from large scale mining are shrouded in corrupt mining deals with multi-nationals, that form of grand corruption does not appear to directly affect the implementation of the Dodd-Frank Act and due diligence guidelines. However, the profit from these deals is not reinvested in a way that can enhance the capacity of the state to implement due diligence, certification and traceability schemes. Rather, it ends up in the pockets of political elites (Titeca & Edmond, 2019). Regarding petty corruption, there is a lot evidence that it directly affected the implementation of due diligence. Local bureaucrats are often involved in bribe schemes that for example underestimate mineral production and facilitate smuggling. Not only does this negatively affect the effectiveness of due diligence guidelines in addressing illicit practices, it also makes it harder to implement due diligence since local bureaucrats themselves are tasked with implementing traceability schemes (Bafilemba et al., 2014). Lastly, the FARDC was involved in comparable practices to local bureaucrats, but their use of force, extortion and human rights violations make their corruption more violent. Whether FARDC activity can be classified as grand or petty corruption is debatable. While they are more directly related to political elites than for example local bureaucrats, the FARDC acts with enough autonomy for it to be detached from political elites. One of the most visible unintended effects of the Dodd-Frank Act has been the stagnating or even increased level of violence and human rights violations (Christensen et al., 2020). FARDC corruption appears to be a direct cause of that.

These issues illustrate the how corruption can affect the implementation of international regulations like the Dodd-Frank Act. The neo-patronage of political elites and the persistent petty corruption both contribute to this phenomenon.

4.2.1 – Corruption Before the Dodd-Frank Act

The management of resources in the DRC has been tied to corruption since the 1800's. During colonial times, natural resources have been extracted at the expense of local people and communities, often benefitting a small elite. After independence, political elites of Mobutu's regime kept exploiting natural resources for their own benefit, militarizing the control of resources in the process. During this period, Mobutu even received Western aid as he was seen as an anti-communist outpost during the Cold War (Carpenter, 2012). To bypass Mobutu's control, local people turned smuggling as smugglers paid higher prices than Mobutu's regime. Corruption impeded the formal mining sector from growing, with for example the informal diamond mining sector even surpassing it. In the mid-nineties, the World Bank tried to address corruption by pressuring the DRC into creating new management and investing codes. In order to revitalize the mining sector in the DRC, joint-venture agreements were signed between DRC state company Gécamines and foreign companies (Global witness, 2004). After Kabila gained power in 1997, his government continued the system of patronage of his predecessor. The years that followed after the war were seen as a transition period, overseen by Kabila's son who would remain in power until 2019. From 2003 to 2006, the DRC continued to open up to foreign investment signing multiple joint venture agreements. Often, these contracts were signed under dubious circumstances, with for example AMF being exempt from taxation (Kodi, 2008). This form of neo-patronage linked corruption to multinational and external interests (McFerson, 2009). Even if the new mining code established taxes and other rules, it was largely ignored. State institutions did not have the capacity to adequately manage the mining sector and ensure that the private companies withheld their agreements. The mining sector was untransparent and became a breeding ground for corrupt practices (Kodi, 2008). In 2008, Kabila's neo-patronage came under pressure due to Western countries denying aid payments if the regime would not democratize the political system. Western countries worried that aid payments ended up in patronage networks. Amidst this uncertainty of foreign aid, Kabila increasingly started mining projects with Chinese companies. Without Western aid and with more Chinese influence, the country

increased the likelihood of authoritarian drift (Matti, 2010). In 2008, the DRC was last in a list by Freedom House of African countries with respect to business and regulatory climate, and last in the world for public integrity (McFerson, 2009).

4.2.2 – Corruption After the Dodd-Frank Act

With regards to the implementation of the Dodd-Frank Act on conflict minerals like tantalum, corruption was predicted to be a disruptive factor. In 2011, the World Bank Governance Indicators put the DRC at the bottom 3% in the world (World Bank, 2011). Weak governance and corruption were argued to undermine the successful implementation of due diligence, since it influences the ability of the state to fulfil its basic functions. The Kimberley process, a certification scheme for conflict diamonds in Africa set up in 2000, already illustrated the potential pitfalls of certifications schemes. There was a glaring lack of enforcement, with DRC government officials and state forces falsely certifying diamonds. Arguably, the enforcement of 3T due diligence is even more complex with it covering more minerals and the supply chains having more intermediaries (Polinares, 2013). Before the Dodd-Frank Act, the DRC acceded the initiative for the Extractive Industries Transparency (EITI) in 2005, an initiative that was created to strengthen good governance by improving transparency and accountability (EITI, 2023). However, in 2013 the DRC was suspended due to not complying with its principles. Corrupt practices of government officials plagued various levels in the collection of fees related to the exploitation of mineral resources. The value of mining concessions was often underestimated and there were multiple cases of non-compliance in the payment of taxes (Pepe et al., 2014). The years that followed, corruption was still widespread. From 2017 to 2023, Freedom House, an institution that quantifies the degree of democracy in countries, has given the DRC an average score of 18.1/100, and the political rights and civil liberties a 4/40 and 14.1/60 respectively (Figure 3). With this score, the DRC ranks around the 15% least democratic countries in the world.

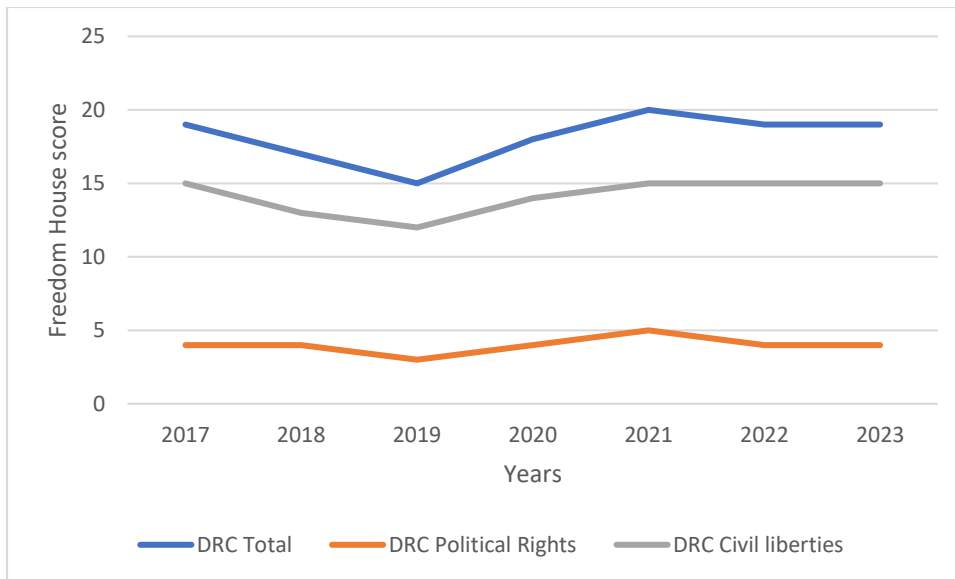


Figure 3: Freedom House score Democratic republic of Congo from 2017 to 2023, Based on Freedom House (2017-2023).

4.2.3 Neo-Patronage of Political Elites

In order to determine if corruption affected the implementation of due diligence, a distinction must be made between grand and petty corruption. Grand corruption is linked to corrupt practices by political elites. According to research by Pulitzer Centre (2017), president Kabila and his family were estimated to own more than 80 companies across all parts of the DRC's economy. The most profitable were tied to the mining sector. Many of these are joint ventures with foreign investors and multi-nationals, where the state grants agreements and keeps a part of the profit. However, more mining permits have been granted than have been allowed by the mining code. On top of that, there is a lack of fiscal transparency since Kabila's declaration of assets is not made public (Pulitzer Centre, 2017). These agreements are supposed to provide the state with taxation money, but much of it disappears in the neo-patronage networks of elites. Between 2010 and 2014, it was estimated that the 1.5 billion dollars in state revenue was lost due to dubious mining deals. With for example the joint venture agreement involving Gécamines, the central bank diverted millions of dollars (Freedom House, 2018). Most of these mining deals are connected to the extraction of cobalt and copper outside of conflict areas like the Kivu provinces. Compared to tantalum, cobalt and copper are more profitable and are mined in more stable environments (Callaway, 2018). Nevertheless, Kabila's family has also been linked to coltan mines. The president's brother Zoe Kabila is known to own mining companies that have made millions in joint venture

agreements. Among these deals are coltan mines that are now operated by Noventa and GICC (Pulitzer Centre, 2017). This system of patronage victimizes development since profits are used for personal gain, rather than reinvested in the respective industry or public sector (Titeca & Edmond, 2019). It therefore comes as no surprise that during the election of 2019, newly elected president Tshisekedi emphasized corruption and vowed to tackle it. As a direct result, in 2022 Gécamines was subject to an audit with scrutinized the mining agreements that facilitated tax evasion (OCCRP, 2022). Remarkable is that at the beginning of 2023, when businessman Dan Gertler was accused of corrupt mining deals in the DRC, Tshisekedi was the biggest supporter of removing sanctions against Gertler, supposedly due to Gertler returning 2 billion worth of mining revenues in exchange for lobbying aid by Tshisekedi. While this money is promised to be returned “to the people”, NGOs criticize this deal since it exempts culpable actors from corrupt practices (Lipton & Searcey, 2023).

4.2.4 - Persistence of Petty Corruption

Petty corruption happens on a local scale, and is therefore more directly connected to artisanal mining and conflict minerals than grand corruption. Its persistence has been hampering implementation of international regulations. When the DRC was suspended from the EITI initiative, one of the reasons was the lack of transparency and corruption in all parts of the mineral supply chain. Artisanal miners, for example, evaded tax payments due to personal connections between traders and government officials, and purportedly underestimated the quantity of mined minerals (Pepe, 2014). Similar practices were highlighted in the implementation of the Dodd-Frank Act. Representatives from the Small-Scale Mining Department of Technical and Social Assistance (SAESSCAM), who’s task it is to organize mining cooperatives and implement schemes, have often been at the forefront of illicit activities like tag trading and underestimating mining production. In the latter case, the rest of the unregistered minerals are smuggled out with the help of authorities at the border that charge unofficial fees. Moreover, often the same representatives are also tasked with implementing the iTSCi schemes (Bafilemba et al., 2014). Especially bribes continue to be present and reported to tarnish the efficiency of mineral tracking systems (Freedom House, 2017). The most prominent form of corruption is the involvement of the armed state forces (FARDC). At one hand, the FARDC plays a pivotal role in neutralizing non-state armed groups that could profit from the trade in artisanal mined minerals like tantalum. At the other, the

FARDC itself illicitly controls networks and engages in illegal taxation (Christensen et al., 2020). The mining ban in 2011 resulted in more militarization and control by the FARDC over artisanal mines. The FARDC profited from the mining ban and the subsequent Dodd-Frank Act by forcing producers to pay bribes so they could still sell their products (Polinares, 2013). The FARDC was also complicit in taxing gold mines and facilitating smuggling (Bafilemba, 2014). The increased involvement of the FARDC from the mining ban onwards has also been connected to increased human rights violations and violence against civilians (UN Security Council, 2019). When due diligence programs are implemented, households report 27% less FARDC presence, and an increase of 58% in tax is collection (Christensen et al., 2020). Nevertheless, their presence does hamper implementation of due diligence, and if due diligence is implemented, they are likely to shift to gold mines like other armed groups (Hanai, 2021).

It can therefore be concluded that political elites taking away state resources, and persistent petty corruption among local bureaucrats and the FARDC hamper the implementation of regulations. Therefore, the second hypothesis, *“Increased levels of grand and petty corruption will increase the discrepancy between the intended and actual effects of the international regulations that regulate tantalum sourcing in the DRC.”*, can be affirmed.

4.3 – Assessing the Reliance on Corporations

The third and final part of the analysis will assess the evidence to test the third hypothesis, revolving around the argument that international regulations like the Dodd-Frank Act have failed due to an overreliance on corporations in implementing due diligence and decreasing human rights violations. Since the Dodd-Frank Act has been implemented, downstream companies have invested in improving the due diligence of their supply chains. The measures vary across different economic sectors, and depend on the organizational structure within the companies (Dalla Via & Perego, 2018). The implementation of measures to improve supply chain visibility has even resulted in higher market performance (Swift et al., 2019). However, the high cost of complying with due diligence is still seen as a major discouragement for smaller companies to improve their due diligence (Härkönen, 2018). Furthermore, the tantalum mining landscape in the DRC is increasingly exposed to international buyers with lower due diligence standards. This leads to irregular implementation with varying results upstream in the supply chain. Smelters, being the closest to the mining activity, are often the ones that are pressured to improve due diligence as they are the first to be replaced if they don't. Nonetheless, they find it hard to keep up with demand, which opens up a window of opportunity to circumvent due diligence by using smuggled or fraudulently tagged minerals (Hofmann et al., 2015). Therefore, downstream companies do not directly exacerbate the issues conflict minerals are associated with, but are also not very effective at solving them. Unequal implementation and pressure on smelters influence the extent to which conflict-free tantalum ends up in the supply chain, but the negative effects on artisanal mining are mostly a result of the policy itself rather than how downstream companies implement it. However, for industrial mining companies, it is a different story. Industrial mining and artisanal mining are often at odds with each other regarding their mining rights. Unlike, artisanal mining, industrial mining is part of the formalized tantalum supply chain, creating an unequal opportunity in capital accumulation (Katz-Lavigne, 2019). Industrial mining often disrupts artisanal mining, leading to the riots and violence mentioned in previous chapters. The extent to which this happens depends on the mining corporation and the region, Indian MMR has for example helped with formalizing artisanal mining in Katanga (Diemel & Cuvelier, 2019). However, most cases follow a pattern of unequal extraction. Semi-authorised forms of extraction have been put in place to incorporate artisanal mining into the formalized sector,

but they mostly benefit the large mining corporations, while outsourcing all the risks to the artisanal miners. These unequal arrangements are legal, but with the political elites and mining corporations benefiting the most, ethical concerns can be raised regarding who's interests the law serves (Radley & Geenen, 2012). With the WTO supporting these neoliberal arrangements, and regulations like the Dodd-Frank Act undermining artisanal mining, there is a large chance that the inequalities and consequent precarity are only going to increase. Therefore, the high costs and irregular implementation of transparency and due diligence by downstream corporations, combined with the enhanced position of the industrial mining corporations, have adversely impacted the effects of international regulations.

4.3.1 – High costs and Irregular Implementation

When determining the effect that downstream companies have had on the unintended effects, it is first important to determine the degree in which downstream companies have complied with implementing due diligence in their supply chains. Since 2010, many firms in different kinds of sectors have implemented measures to improve supply chain due diligence. Hofmann et al. (2015) identify compliance, commitment and analytical measures. In general, compliance measures were adhered to strictly. Firms reorganized supplier portfolios and replaced suppliers that did not adhere to these measures. Commitment measures, mostly present in hardware industries, strive for cooperation and engage suppliers in fulfilling due diligence practices. Lastly, analytical practices strive to gain more knowledge about the composition and supply chain of sourced products. Apart from the sector a downstream company operates in, the implementation of due diligence is also affected by organizational structure. Companies with long-oriented incentives, strong corporate governance systems, greater number of board meetings and inclusion of a sustainability index all display higher levels of conflict minerals disclosure (Dalla Via & Perego, 2018). On top of that, firms that have a high degree of supply chain visibility have a higher market performance than comparable companies with low visibility. This can be attributed to the higher demand for ethical consumption, the improved structure, and improved understanding of sourcing operations that come with improving due diligence (Swift et al., 2019).

However, improving supply chain due diligence and transparency come with high costs. This can be a barrier for the participation of all necessary actors in the supply chain, possibly causing uneven implementation and inequalities across supply chains (Härkönen, 2018). Smaller companies, for example, have more financial constraints than multinationals (Dalla Via & Perego, 2019). Koch & Kinsbergen (2018) even argue that firms are exaggerating the negative effects caused by due diligence in order to exempt for compliance costs. It also leads to questions regarding the use of the money, since it could also have been used to for example fund responsible mining projects and formalise artisanal mining (Volland & Daly, 2018). Moreover, there are more international buyers than before the regulation, possibly resulting in conflict minerals like tantalum getting shipped to countries with lower due diligence standards (Schutte, 2019). The effects on the upstream actors are most visible on smelters and refineries. Due to the high amount of regulative and customer pressures, and high demand of products, they often lack the resources to fulfil requests. If they do not comply, they are replaced, forcing them to improve due diligence or find ways around the regulation (Hofmann et al., 2015). The latter appears to be the case, since smelters can still sell their minerals to companies with lower supply chain visibility and international buyers. While all these measures did improve supply chain visibility and transparency, it has not necessarily led to a shift to responsibly sourced tantalum. If anything, it has led to more companies being aware that their used tantalum is not sourced according to due diligence guidelines (GAO, 2021).

4.3.2 – Disruption by Mining Corporations

In the analysis of the disregard for the local context, it was determined that not formalizing artisanal mining has caused severe displacement, riots and violence (Stoop & Verpooten, 2019). Industrial mines owned by mining corporations' profit from this since those mines are part of a formalized supply chain. However, this is not merely something mining corporations coincidentally profit from, since their actions and choices directly disrupt artisanal mining practices. Within the plural mineral rights regime of industrial and artisanal mining, Katz-Lavigne (2019) identifies three facets. One is the corporate component, where industrial mines employ measures to enforce their claims on the minerals, often disrupting existing artisanal mining networks. Secondly, authorised artisanal extraction refers to a system where security companies and public actors negotiate with producers to authorise short-term

mineral extraction by artisanal miners from industrial mining sites. Lastly, unauthorised artisanal extraction is when artisanal miners extract minerals without any authorization, subsequently risking violent removal (Katz-Lavigne, 2019). All facets represent the tensions that large scale mining corporations cause when being granted mining rights. With areas being a zero-sum game, and with industrial mining being legitimized, there are negative distributional consequences for artisanal mines (Katz-Lavigne, 2020). These large-scale mining corporations are increasingly of Chinese origin. In for example the Sicomines deal, China gets minerals in exchange for infrastructure, effectively filling out a state like role. Nonetheless, this infrastructure does not profit the artisanal miners the companies displace (Rapanyane & Shai, 2020). While China is mostly interested in cobalt, this case illustrates how an increasing reliance on corporations lets them arrange state functions in a way that does profit the local population.

As has become apparent from the corruption section, the government of the DRC is heavily involved in creating and nurturing the mining agreements of industrial mining corporations. In 2022, mining corporation Glencore was forced to pay 180 million pounds to settle a corruption case. They have been accused of bribing their way into securing business advantages, to which they reacted that they accepted it as “West Africa’s way of doing business” (BBC, 2022). While this case has been deemed illegal, legal arrangements between companies and the state have been dominating the mining sector in the DRC. These arrangements between transnational capital and the DRC’s government have impeded locally led processes of capital accumulation through artisanal mining. Radley & Geenen (2021) explore this dynamic through the interaction between Canadian mining multinational TNC Banro and artisanal mining. TNC actively suppresses artisanal mining in accordance with the state. In some capacity artisanal mining is informally tolerated, but only if it doesn’t compete with TNC activities. Technically, this relationship is a lawful practice, which is even supported by the World Bank. Nevertheless, questions arise whose interests the law serves, especially considering the heavy lobbying of foreign mining companies for the liberal mining code (Radley & Geenen, 2021). Even if artisanal miners are sometimes incorporated in these arrangements, they are often being exploited. Mining companies employ flexible recruitment of artisanal miners. These miners do not have a fixed wage and are paid based on what they mine. This represents one of the corporate-led formalization projects after the Dodd-Frank

Act had illegalized artisanal mining of minerals like tantalum. However, corporations outsource the risk, and it leaves miners vulnerable to job loss, illnesses and price fluctuation (Calvão et al., 2021). During the Covid-19 pandemic for example, mining activities shrunk while the demand for tantalum increased, creating a period of tantalum price volatility. With formal mining closing down, it left artisanal miners to continue the work while also being vulnerable to Covid, especially with the low vaccination rate (Lindagato et al., 2022).

It can therefore be concluded that the irregular implementation of due diligence schemes by downstream corporations, and the disruption by industrial corporations, adversely affected the impact of international regulations. Therefore, the third hypothesis, *“Increased reliance on corporations and market approaches will increase the discrepancy between the intended and actual effects of the international regulations that regulate tantalum sourcing in the DRC.”*, can be affirmed.

5 - Discussion and Conclusion

Returning to the central research question of this paper, *“Why are the intended goals of international conflict mineral regulations not being achieved in the context of the tantalum mining industry in the DRC?”*, it can be concluded that all three hypothesized causal mechanisms have mostly negatively affected the degree to which these goals have been achieved. The disregard for the local context expressed itself in the underestimation of the artisanal mining sector, misunderstanding of the local policy context and oversimplification of the activities of armed groups. All three forms of disregard contribute, to varying degrees, to the unintended effects of the international regulations. Furthermore, both grand and petty corruption have hindered the implementation of the international regulations, with money ending up in the pockets of political elites, local bureaucrats committing fraud, and the FARDC profiting from illicit trade networks. Lastly, by relying on corporations in implementing the regulations, industrial mining companies and their exploitative practices have been legitimized, and downstream companies improving transparency have made little contribution to changing the supply of tantalum. As a result, socio-economic issues like human rights abuses, violence, and displacement continue to plague the DRC, especially in the Eastern parts. With multiple unintended effects, one can argue that the regulations have altered the nature of these issues but have not resolved them. The tantalum mining industry in the DRC thus exemplifies the inequalities within global supply chains. With tantalum set to maintain its status as a critical material in the years to come, securing its supply will remain relevant. Therefore, the question arises: *“What does the future hold?”* The European Conflict Mineral regulation has been implemented relatively recently, and most of its effects are yet to be observed. However, the debate remains whether its expanded scope relative to the Dodd-Frank Act will be beneficial for communities and the DRC as whole. Its continued reliance on companies and limited provisions for local people could lead to similar problems as those seen with the Dodd-Frank Act. Proponents could point to the unstable political situation within the DRC and argue that making top-down regulations using the free market is the lesser of two evils. However, greater effort should be directed towards regulations that benefit the people who suffer the most from these prevailing issues, rather than solely benefitting multinational corporations.

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