Strategic Dialogue on Sustainable Raw Materials for Europe (STRADE)

STRADE Country case studies: Rwanda and Democratic Republic of Congo

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STRADE Country case studies

RWANDA

Jürgen Runge & Diderot Nguepjouo
Zentrum für interdisziplinäre Afrikaforschung (ZIAF)
www.ziaf.de

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List of Abbreviations and Acronyms

3T	Tin, Tungsten and Tantalum
3TG	Tin, Tungsten, Tantalum and Gold
ADFL	Alliance of Democratic Forces for the Liberation of Congo – Alliance of Democratic Forces for the Liberation of Congo
AFP	Analytical Fingerprint
AMV	Africa Mining Vision
APT	Ammonium ParaTungstate
ASM	Artisanal and Small-scale Mining
BGR	German Federal Institute for Geosciences and Natural Resources – Bundesanstalt für Geowissenschaften und Rohstoffe
BSP	Better Sourcing Programme
CFSI	Conflict-Free Sourcing Initiative
CFSP	Conflict-Free Smelter Program
CNRD	Conseil National pour le Renouveau et la Démocratie – National Council for Renewal and Democracy
COMIKAGI	Coopérative Minière Kaba-bara-Gikingo
COPIMAR	Coopérative de Promotion de l'Industrie Minière Artisanale au Rwanda – Cooperative for the Promotion of Artisanal Mining Industry in Rwanda
CSO	Civil Society Organisation
CTC	Certified Trading Chains Initiative
DD	Due Diligence
DFID	Department for International Development
DMFA	Dutch Ministry of Foreign Affairs
DRC	Democratic Republic of the Congo
EDPRS	Economic Development and Poverty Reduction Strategy
EICV	Enquête Intégrale sur les Conditions de Vie des ménages – Integrated Household Living Conditions Survey
EITI	Extractive Industry Transparency Initiative
EU	European Union
FDLR	Forces Démocratiques de Libération du Rwanda
FEC	Fédération des Entreprises Congolaises
FECOMIRWA	Fédération des Coopératives Minières au Rwanda – Federation of Mining Cooperatives in Rwanda)
GDP	Gross Domestic Product
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit – German development agency
GMD	Geology and Mining Department
GoR	Government of Rwanda
GTM	Gifurwe Tungsten Mines
ICGLR	International Conference on the Great Lakes Region
IFRI	Institut Français des Relations Internationales
IGF	Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development
ITOA	IT Operations Analytics
ITRI	International Tin Research Institute
iTSCi	the ITRI Tin Supply Chain Initiative
MIFOTRA	Ministry of Public Service and Labour
MIGEPROF	Ministry of Gender and Family Promotion
MINECOFIN	Ministry of Finance and Economic Planning
MINEDUC	Ministry of Education and Training

MINICOM	Ministry of Trade and Industry
MINIRENA	Ministry of Natural Resources
NEMA	National Environmental Management Authority
NSC	National Steering Committee
OECD DDG	OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-. Affected and High-Risk Areas
OECD	the Organisation for Economic Cooperation and Development
PAC	Partnership Africa-Canada
PAYE	Pay-As-You-Earn
RBS	Rwandan Board of Standards
RCM	Regional Certification Mechanism
RDB	Rwanda Development Board
RDF	Rwandan Defence Force
REDEMI	Régie d'Exploitation et de Développement des Mines – Mining and Development Authority
REMA	Rwanda Environment Management Authority
REWU	Rwanda Extractive Industry Workers Union
RMA	Rwanda Mining Association
RMAP	Responsible Minerals Assurance Process
RMI	Responsible Minerals Initiative
RMPGB	Rwanda Mines, Petroleum, and Gas Board
RNRA	Rwanda National Resources Authority
SAESSCAM	Service d'Assistance et d'Encadrement du Small Scale Mining – Supervision and Assistance Service for Small Scale Mining
SDMIR	Sustainable Development of Mining in Rwanda
SOMIRWA	Société des Mines du Rwanda – Rwanda Mines Corporation
SSAMIR	Supporting Sustainable Artisanal Mining in Rwanda
STRADE	Strategic Dialogue on Sustainable Raw Materials for Europe
UN	United Nations
UNDP	United Nations Development Programme
USGS	United States Geological Survey
VAT	Value Added Tax
WBH	Wolfram Bergbau und Hütten AG
WIAMO	Rwanda Women In/And Mining Organization

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Executive Summary

Rwanda is one of the African countries with an eventful contemporary history. After the atrocities of the pre- and post-independence period, the country plunged into genocide in 1994. Rwanda's reform efforts are obvious and generated some admiration by several political partners. It adopted a "Vision 2020" that indicated major development goals to be achieved.

Objective of the report is therefore to provide in-depth perspective of an African example of a mining economy, including a mine case study, to exemplify the issues analysed in other STRADE policy briefs and reports etc. This report therefore seeks to examine the due diligence in Rwandan mining sector from the up-to-date realities faced by various stakeholders, and especially by local players.

The architecture of this report is built upon some major milestones that have guided the analysis of the Rwandan mining sector. These include the current situation of mining in Rwanda, policy and legal framework, some concerning issues such as institutional architecture, existing due diligence, certification schemes, hurdles and risks for projects as well as some recommendations for enhancing sustainability of mining in Rwanda are of particular importance within the report.

First official mining activities in Rwanda began in 1930 with tin ore in the Rwinkwavu and Rutongo concessions, followed by further discoveries during further geological explorations, and accounted up to 42.5% of foreign exchange earnings till 1968. As from 1973 on, the Rwandan independent government adopted a five-year plan for stimulating the revival of the extractive industries and mining sector, and later created SOMIRWA for regrouping colonial companies and structures under one single entity. This company went bankrupt and was replaced by the REDEMI in 1989. The 1994 genocide brought the coup de grace to these governmental recovery efforts. Since 2008, a new era has opened for the Rwandan mining sector, including the revision of its mining policy, and the creation of a Geology and Mines Department GMD within the Ministry of Natural Resources.

Yet, Rwanda owns the 3T minerals which the production is significant, and was the world's leading producer of tantalum in 2014 as well as it accounted the same year for more than 1% each of world tin and tungsten production (Yager 2017). After the DRC, Rwanda is the second biggest producer of tin in Africa, and is among the world's top 10 tungsten producers. In 2016 MINIRENA's cadastre registered a slight rebound with 570 licenses. Small-scale mining is the most important segment of the sector where investments are being made and accounts for around 80% of the country's mineral output (Export.gov 2017). The government is eager to formalize the sector, attract international mining investors, and increase on-site processing of minerals. The sector's potential to attract FDI, create jobs, increase exports and levy taxes and royalties was assumed to help reducing the poverty level.

- ***Policy and legal framework***: The constitution, the vision, the policies, the law, the decrees and the international engagements were since then continuously inscribed in the logic of the economic revival. Both the 2003 Constitution through articles 62, 66, 67, 90, 92, 93, 108, and 201, as well as policies include the Rwanda Vision 2020, the Economic Development and Poverty Reduction Strategy (EDPRS), the Rwanda Policy of Mines and Geology, and the Mining and Mineral Policy of Rwanda illustrate the critical position given to mining sector regarding the country development.

- ***Some issues of particular importance for the development of the sector*** include the formalisation of ASM activities, the improvement of the mining productivity, the management of in-country smelter on a long run, the smuggling of 3TG minerals from the eastern DRC and Burundi, and the limited human and institutional capacity.
- ***The case study, the Gifurwe Tungsten Mines***, is located in the Burera District. It is owned by the WMP. The Rwandan company holds a close and lasting business relationship with the European market for mining processing (smelting, refining). With over 660 mineworkers, WMP subcontractors produce 30–40 kg of WO3 concentrate per day that generates largely positive socio-economic windfalls in neighbouring communities. Mining workers earn up to 55.3% of the total export value; sub-contractors 7.3% before deductions; and the WMP, 21.3%. The GoR also obtains 10.7% as royalties, social insurance, and personal income tax for workers. The remaining 5.4% is spent on traceability, especially for iTSCi and RCM. The firm activities involve damages on the environment as well.
- The mining sector's ***institutional architecture*** is made up of three major components, namely the government, private sector, and international partners that interact with each other to improve the mining production in Rwanda.
- The existing ***due diligence mechanism*** is largely inspired from the OECD DDG and can be achieved through certification schemes such as CTC (including AFP) that are integrated in the RCM. The RMAP can be mentioned as the specific certification frame for smelters. The iTSCi traceability scheme is the main tool that serves for tracking mineral history.
- ***Hurdles and risks for projects***. The major risk for fostering responsible mining in Rwanda is related to the potential repeal of the DFA by the United States Government. Besides that, several concerns linked to socio-environmental conditions of mining are of interest.
- ***Recommendations for enhancing sustainability of mining in Rwanda*** include measures to be taken by the government, civil society organisations as well as foreign partners of the GoR.

The main conclusion of this report is that Rwanda has taken steps with regard to development of its mining sector and progressively adapt to due diligence requirements in force in the trade of 3T minerals. Government has clearly set targets in its Vision 2020 and adopted five-year strategic plans to achieve the objective in the sector. In addition, several reforms have been taken to accompany the governmental will of making the mining sector a decisive contributor in the fighting against poverty. Rwanda has moved away from traditional well-known initiatives in the mining sector such as EITI, KP, etc. and has timely committed to the implementation of certification and traceability schemes that contribute to the achievement of a genuine due diligence, and which have especially allowed it to have unlimited access of its production to the global market for minerals. However, some challenges associated with the implementation, such as formalisation, costs, environmental concerns, as well as expanding to the refining of its production remain.

Introduction

Rwanda is one of the African countries with an eventful contemporary history. After the atrocities of the pre- and post-independence period, the country plunged into genocide in 1994 with estimated fatalities of more than 800,000. The foci of instability that surround it and its military and geopolitical role during the Great African War (1998-2003) in the DR Congo do not put it permanently safe from any risk of a renewed conflagration.

As a small country (26,338 km2) located in the Great Lakes region between eastern Africa and the Congo basin, it is extremely densely populated (>400 inh./km2) with a total number of inhabitants reaching almost 12 million in 2016. It is a landlocked country with an accentuated topography ("Land of the 1000 hills"). In recent years it gained again a better Africa wide and also international reputation concerning its efficient development efforts; to some extend also governance structures that have been widely improved. Therefore, it receives from international partners significant funding: in 2015/2016 it received around U$984.9 million Official Development Assistance and other external resources contributed to 35% of the state revenue and financed 45% of the development budget in 2015/16 fiscal year (MINECOFIN 2017). The net official development assistance received by Rwanda continually increased and reached US$1,148 million in 2016 (World Bank 2018). The EU contributed US$88.6 million (9%) and is the fourth biggest donor after the World Bank Group (US$231.1 million), the USA (US$170.4 million) and the AfDB Group (US$99.6 million).

Rwanda's reform efforts are obvious and generated some admiration by several political partners. It adopted a "Vision 2020" that indicated major development goals to be achieved. The continuous development of the mining sector and extractive industries is perceived as a decisive contributor for combating poverty. It has since become a country on the rise, and according to the Word Bank, Rwanda was the biggest reformer in the region, with 52 reforms in 15 years within the Sub-Saharan Africa region in 20171. Similarly, the study reveals that it is the second highest ranked country after Mauritius in the ease of "Doing Business".

Exploring the mining sector, the STRADE country case study reviews the overall mining context of Rwanda, policy and legal framework and some key concerns affecting the sustainability of the sector. The portrayed Gifurwe Tungsten Mines' case study illustrates the evolution and dynamism of the private sector, put in place by the government also helps to explore at the local level the development realities of the Rwandan mining sector and its implications for surrounding communities. A discussion of certification, traceability, and due diligence mechanisms highlights selected challenges to be addressed in order to improve implementation of efficient due diligence measures.

[1] http://www.worldbank.org/en/news/press-release/2017/10/31/sub-saharan-african-economies-set-new-record-in-reforming-their-business-climate-doing-business

1 Current situation of mining in Rwanda

Rwanda is one of the smallest countries on the African continent with a land surface of 24,668 km2 and 1,670 km2 of lake areas. Located in the transitional regional context between East and Central Africa, it is landlocked surrounded by the neighbouring countries Uganda, Tanzania, DRC and Burundi along a 930 km wide borderline. With a population of 11.9 million, it has one of the highest population densities in Africa with 452 people per km2 mainly relying on traditional small farmers subsistence agriculture, which exacerbates for a long time pressure on lands (CIA 2017). Rwanda's population growth rate is high (2.45% per year). The hilly savannah landscape with remnants of forests is prone to soil erosion and degradation.

1.1 (Brief) History of mining in Rwanda

Geological surveys started in Rwanda in the early twentieth century as an extension of research in the vicinity of the Congolese copper rich Katanga province by Belgian colonial powers controlling early large scale mining operations in Congo. First official mining activities in Rwanda began in 1930 due to the discovery of cassiterite (tin ore) in the Rwinkwavu and Rutongo concessions. Further cassiterite deposits, as well as colombite-tantalite, wolframite, beryllium, minerals of the pyroxene group, and gold, were discovered during further geological explorations, and accounted up to 42.5% of foreign exchange earnings till 1968. Subsequently, this upward trend reversed because of any significant investments since independence 1962. In 1984 exportations and foreign exchange earnings dropped to 10% only.

After the Belgians left Rwanda, in 1973, the new independent government took some critical measures including the adoption of a five-year plan for stimulating the revival of the extractive industries and mining sector by setting up a tin smelter and proposing further targets to increase production of cassiterite and wolframite. The government created a company named SOMIRWA and owned 49% of it. The major aim of this company establishment was to regroup colonial companies and structures under one single entity. This was unfortunately not very successful because this company went bankrupt in 1985. Subsequently, it was replaced by the REDEMI in 1989, which continued to promote exploration and mining operations. Over the same year, COPIMAR received a SYSMIN fund, available through the European Economic Commission to reinvigorate the common artisanal mining sector (Metcalf 2015).

The 1994 genocide brought the coup de grace to these governmental recovery efforts. Some equipment was looted and others vandalized, while the human resource was almost exterminated. After these tragic events, the government had no choice but to privatize the publicly owned mines. However, thanks to the cumulative effects of the exacerbation of the Congo war, the high prices on international commodity markets and Rwandan involvement in the illegal mining in the Eastern Congo, mineral exports grew once more. This participation of the Rwandan army in the Kivu region in the DRC resulted in earnings of over US$250 million through exporting Congolese minerals (mostly coltan) over 2000 and 2001 (van Teeffelen 2012).

Since 2008, a new era has opened for the Rwandan mining sector, including the revision of its mining policy, and the creation of a GMD within the Ministry of Natural Resources. What has the effect today of making minerals Rwanda's first export product, with US$68 million in 2010 (GoR 2011) and include tin (cassiterite), tungsten (wolframite) and tantalum ore.

1.2 Geological background and mining potential

The geology of Rwanda is dominated by old Precambrian cratonic basement rocks and by the Proterozoic Kibaran orogeny belt. Two units compose the Archaean-Palaeoproterozoic: the Congo Craton, located in the west of the country, and the Tanzania Craton that occupies the eastern and southern parts of the country. This Kibaran system consists mainly of basement and Mesoproterozoic rocks that have been intruded by different generations of granitic and mafic rocks. It stretches from northern Tanzania across south-western Uganda, Rwanda, Burundi and the south-eastern DRC to Angola. The Kibara belt, comprising resistant cores that are characterised by weak deformations and shear zones, is also divided into two sections of the same age by the Palaeoproterozoic Rusizian terrane extension that shows NW-SE trendings by the Palaeoproterozoic Ubende Belt in Tanzania. The two segments include the Karagwe Ankole Belt (KAB) in Rwanda, Burundi, Maniema and Kivu in the DRC, and the Kibaran Belt itself, which is similar to the type found in the Katanga region of DRC (Heizmann & Liebetrau 2017). They form an extensive metallogenic area that contains numerous granite related ore deposits that are rich in mineral ores like *cassiterite*, *niob-tantalite*, *wolframite* and *gold*. In the east, palaeoproterozoic "older granites", granitic-gneisses and minor migmatites predominate, while neogene volcanics occupy the subsoil in northwest and southwest. Part of the western rift and along the rivers and quaternary alluvial and lake sediments dominate lakes[2]. Sediments found in Rwanda are subdivided into four groups, from youngest to oldest: *Rugezi*, *Cyohoha*, *Pindura*, and *Gikoro* group.

Because of this geological setting a number of minerals have been identified and some are even currently extracted and locally processed, despite the common reputation of Rwanda being not known as one of the "big shots" within the African mining country producers. The resource-poor narrative might be a "dismissive portrayal of Rwanda"[3]. Due to younger Tertiary Great Rift Valley tectonics, the country disposes over many types of mineral resources. Rwanda owns at least two minerals which production is highly significant. According to the USGS' minerals Yearbook for Rwanda, the country was the world's leading producer of tantalum, and accounted for 50% of global output in 2014. Niob-tantalite: Colombo-tantalite mineralization is only found to be associated with pegmatite veins associated to syn- and post-tectonic granitic intrusions. These pegmatite veins are currently subject of intensive exploration for niob-tantalite and cassiterite ores[4]. Similarly, it accounted the same year for more than 1% each of world tin and tungsten production (Yager 2017). Concerning wolframite there are three metallogenic tungsten districts in Rwanda: the Central, Western and Eastern tungsten belts. Mineralization is associated with quartz veins largely hosted in graphitic shale. These mineralizations are also structurally controlled. Major cassiterite deposits are associated with folded hydrothermal quartz veins, largely located within anticlinal structures. These quartz veins are associated with intensive long-term chemical alteration of the host-rocks leading to tourmalinisation, muscovitisation and kaolinisation. The mineralization is associated with a later phase in the vein development and occurs in fractures filled with big muscovite crystals. Relatively minor cassiterite mineralization is associated with pegmatites as shown in Figure 1.

[2] http://www.eisourcebook.org/1244_Rwanda.html

[3] http://www.newtimes.co.rw/section/read/207168/

[4] http://rnra.rw/index.php?id=89

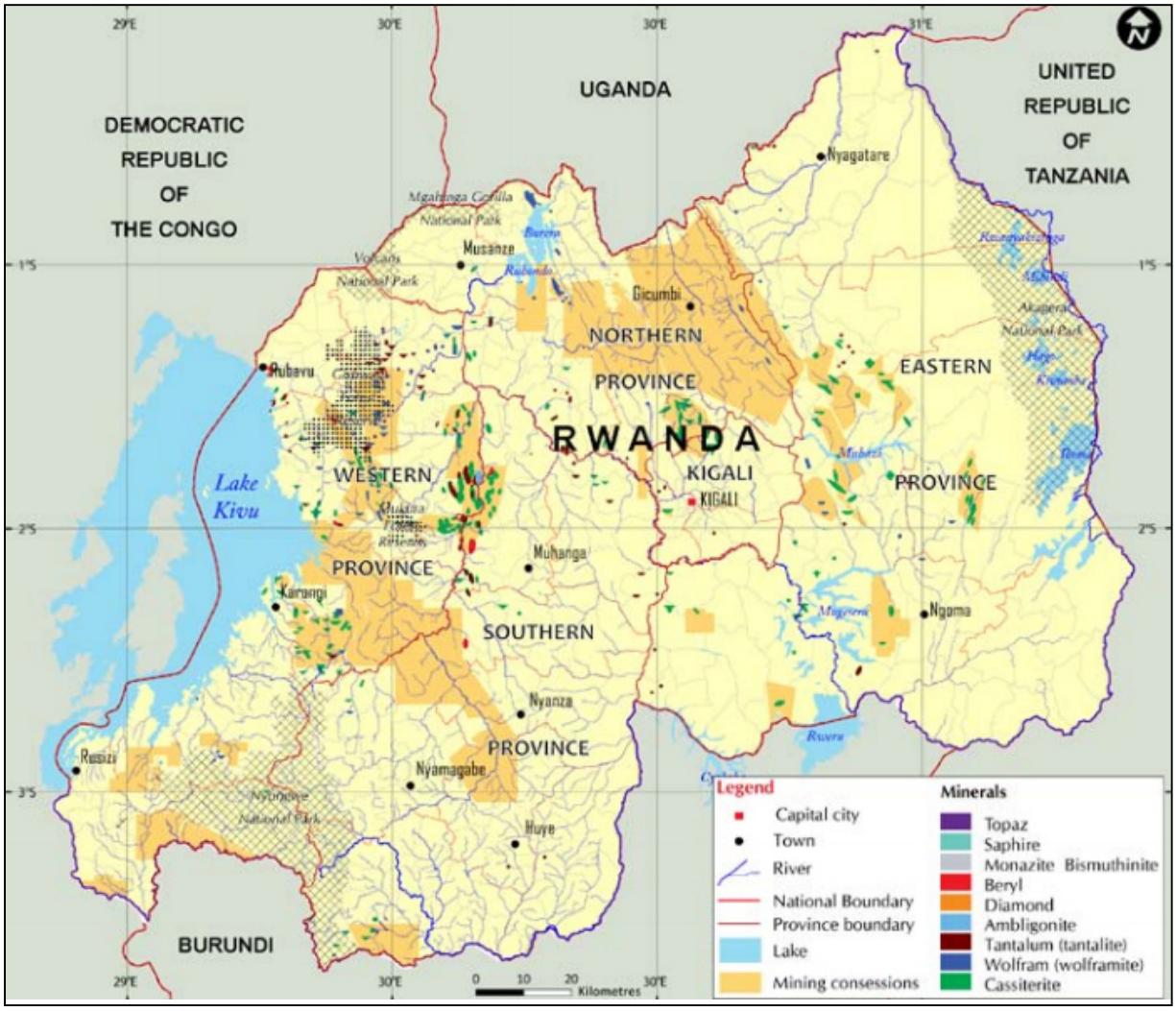

Figure 1: Map of mineral potential and exploitation (REMA 2015)

From a general viewpoint, the structure of its mineral industry mainly rests on metals such as columbium (niobium) and tantalum, gold, cassiterite (tin ore), wolframite (tungsten ore), with small amounts of gold and gemstones as sapphires. The relatively decreasing mine production over the past five years displays records amounted respectively to 300 metric tons in 2016, from the production level of 410 in 2015 for tantalum (Papp 2017b), from 2,000 metric tons in 2015 to 1,800 in 2016 for tin (Anderson 2017), and 770 metric tons in 2016 with almost a 10% decrease over a year for tungsten (Shedd 2017). The downward trend is also recorded on the gold production was 30kg in 2009 and dropped to 3kg in 2010 (Yager 2016). From 2011 on, gold being currently mined takes place in the informal sector and escaped official records. There are no reliable statistics on the Rwandan gold production.

Exploited minerals are largely concentrated and subsequently exported. Niobium ore and concentrate were exported between 2012 and 2015 from Rwanda at a level of 25% of its import sources (Papp 2017a). Rwanda accounted for about 37% of global tantalum production and the DRC accounted for about 32% in 2015.

After the DRC, Rwanda is the second biggest producer of tin in Africa, and is among the world's top 10 tungsten producers. In 2009, the EU imported 8.6% of Rwanda's tantalum and this tungsten represented 2.4% of the total EU imports (van Teeffelen 2012). Currently China maintains friendly state relations with Rwanda. The renewed Chinese presence in the country dated back to 1994 when it reopened a Chinese

Embassy in Kigali after the genocide as the first foreign country[5], and was among the first foreign countries to recognise the new government in Kigali after the Genocide[6]. The following year, a Rwandan state delegation was sent to China to study the Asian country's strategies for rapid economic expansion. Despite the friendship, China does import a relatively small amount of minerals from Rwanda.

Besides those metals, Rwanda also possesses a variety of additional industrial minerals and mineral fuels: Natural gas. Industrial minerals include cement, amphibolite, granites and quartzite, volcanic rocks, clay, sand and gravel. Peat is also mined in the south-western parts of the country and it is being used for electricity generation or processed into an alternative for firewood.

1.3 Main stakeholders within the sector

Generally it can be stated that the financial capacities of investors in the mining sector are low (Cook & Mitchell 2014). For running legal mining operations in Rwanda, an investor in extractive industries must hold at least one of the three prevailing licenses: large-scale mining, small-scale mining, and/or artisanal mining. Thanks to the privatization efforts conducted by the Rwandan government (IGF 2017), the mining sector has captured some attention among international investors which resulted that more than 548 mining permits have been granted to 213 registered mining entities, most on small areas averaging less than five hectares in size. The increasing number of companies involved in the exploration of potential mining sites and exploitation (quarrying) was a striking phenomenon between 2011 and 2014. This initially fast growth then declined strongly when it finally became negative in 2015 due to the decline in global commodity prices. In the case of cassiterite, exports dropped by approximately 40% in value and 20% in volume Wolframite exports dropped by 46% in value and by 12% in volume, which represented 2% of the total of Rwandan exports. In 2016 MINIRENA's cadastre registered a slight rebound with 570 licenses, of which 47 were mining licenses awarded under the former licensing system. Within the new system, 211 were dedicated to exploration and quarrying, while 7 were issued for mining production in the large-scale mining. Small-scale and artisanal mining titles were respectively 21 and 49. According to a WB study that referred to global standards for cumulative mining investments, the country has no large investment of more than US$750 million or even medium-sized operations (about US$250 million to US$750 million, though less for gold). The investments in mining projects are relatively low budget and smaller activities compared to large sized mines elsewhere. The higher end of small size operations in Rwanda reaches about US$100 million to US$200 million, though less for gold. This illustrates that investments in mining still might have some future potential. Of the 213 registered mining entities, only 5 are operations with either total foreign involvement or joint ventures with the government. The remainder constitutes small domestic entrepreneurs or mining cooperatives. All sites rely on manual labour, with minimal investment in mechanized techniques (World Bank Group 2014). The situation has not changed much since then, despite the reforms made by the government, since the main companies in 2013 are almost the same today (Yager 2017). The MINIRENA's target for 2017–2018 to have on stream three medium-scale mines and 100 small-scale mines is worth recalling and revisiting.

Small-scale mining is therefore the most important segment of the sector where investments are being made and accounts for around 80% of the country's mineral output (Export.gov 2017). The government is eager to formalize the sector, attract international mining investors, and increase on-site processing of minerals (development of value chain).

[5] https://qz.com/827935/rwanda-is-a-landlocked-country-with-few-natural-resources-so-why-is-china-investing-so-heavily-in-it/

[6] http://www.newtimes.co.rw/section/read/75544/

Mainly artisanal and semi-artisanal activities take place in most of the country, with however a clear predominance of the 03 districts in the centre (Muhanga), in the north (Rulindo) and in the north-west (Rutsiro) of Rwanda. The Southwestern and Northeastern areas are least affected by 3T minerals extraction. Five districts (Rusizi, Huye, Gisagara, Nyamagabe and Nyagatare) do not show any mining activities as shown in Figure 2.

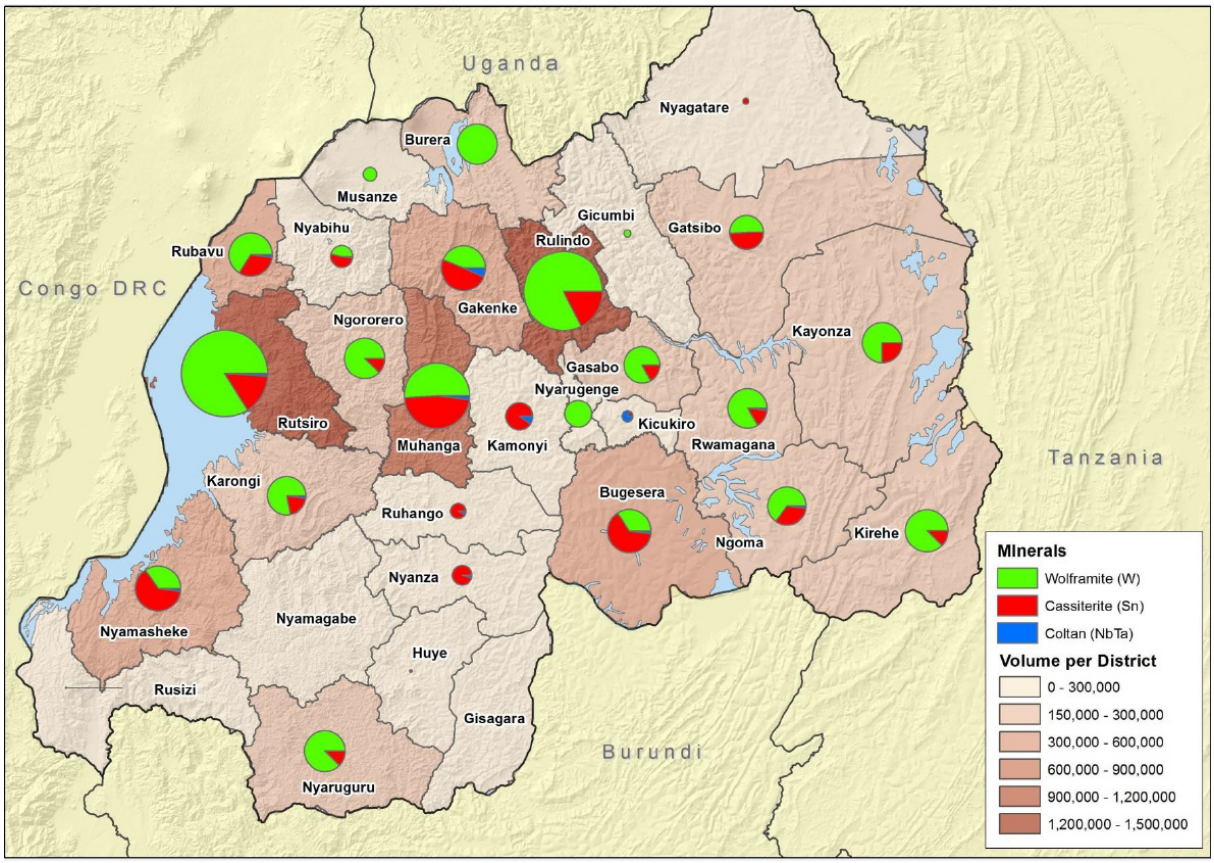

Figure 2: Volumes of Rwandan 3T mineral production shown by district (Barreto et al. 2018: 39)

Various local and small sized companies as well as cooperatives are involved in these mining districts (Figure 2). Mining cooperatives are usually organised over the same model as COMIKAGI[7], one of the most significant cooperatives involved in the cassiterite-tantalite mining in Ruli sector of Gakenke District in Rwanda's Northern Province. It is the fifth-most significant producer (by volume) of the 16 dominant entities exploiting in the District, where it oversees production across its 812 ha and holds five-year renewable licences in four main areas. Its work is supported by 70 active sub-contractors that are responsible (or guide?) 5–20 workers each hired either in teams or as individuals following non written agreements. Sub-contractors can be cooperative members too, however, recently only a few of them actually are in such a double function. They either own the land on which they work or they pay a monthly rent to landowners on pieces of the land they mine. COMIKAGI's primary mineral production is sold to FECOMIRWA as pre-concentrates at its facility in Kigali. It is only after the sale of the ore concentrates is made by the cooperative (COMIKAGI) that the subcontractors are then paid on the basis of their pre-submitted production. It is therefore up to FECOMIRWA to guarantee that pre-concentrates fulfil requirements of market standards, which is done through its x-ray fluorescence laboratory. It is after the

[7] COMIKAGI supply chain is made up of cooperative members, sub-contractors financing and organising mineral production activities, mineworkers carrying out extraction and processing activities, as well as FECOMIRWA that the missions are further described in the section 5.2.

same process that the fair value (grades of processed concentrate) to be paid to suppliers is defined (Barreto et al. 2018).

The most significant mining firms both in the mining and the refining sector identified by the USGS are regrouped in Table 1

Table 1: Major operating companies in the Rwandan mining sector

Companies	Commodity	Location of main facilities
Eurotrade International S.A.	Tungsten, wolframite ore and concentrate	Nyakabingo Mine in Rulindo District
Piran Resources Ltd. of the United Kingdom	Cassiterite, ore and concentrate	Musha and Ntunga Mines
Rutongo Mines Ltd.	Cassiterite, ore and concentrate	Gasambya, Gisanze, Karambo, Mahaza, Masoro, and Nyamyumba Mines in Rulindo District
Rwanda Allied Partners (RAP)	Tungsten, wolframite ore and concentrate	Kilimbari Mine in Kayonza District
Sapphire Miners Cyangugu Ltd. (SMC)	Sapphire	Mines in Rusizi District
SteelRwa Industries Ltd.	Steel crude	Plant in Rwamagana District
Wolfram Mining and Processing Limited (WMP)	Wolfram	Burera District in the North-western Province
Phoenix Metal Ltd.	Refined	Karuruma Tin Smelter in Gasabo District

Source: USGS 2017

Major operators are from European countries, and subsidiaries of Tinco Investments from United Kingdom (Eurotrade International S.A. and Rutongo Mines Ltd.). The share of Rwandan mineral production resulting from artisanal and small-scale mining is near to 100% because the few existing large-scale mining operations are still in the exploration phase.

The processing of ores remains crucial for the Rwandan government. 100% of exports are raw mineral concentrates, not as further processed products (metals). Built in the early 1980's to produce tin from concentrate coming from the SOMIRWA, the smelter went bankrupt before being taken over in 2002 by a French-Swiss company, Phoenix Metal (the former NMC Metallurgie). The company invested US$8 million in the smelter in order to certify it as conflict-free (ITRI 2015). Instead of continually running the smelting furnace which is incredibly energy-intensive, Phoenix resorted to trading raw tin and other mineral ores, because of the issues of low and unreliable power supply and lack of skilled labour to effectively run operations (Bizimungu 2017). In 2017, the government terminated the Phoenix Metal

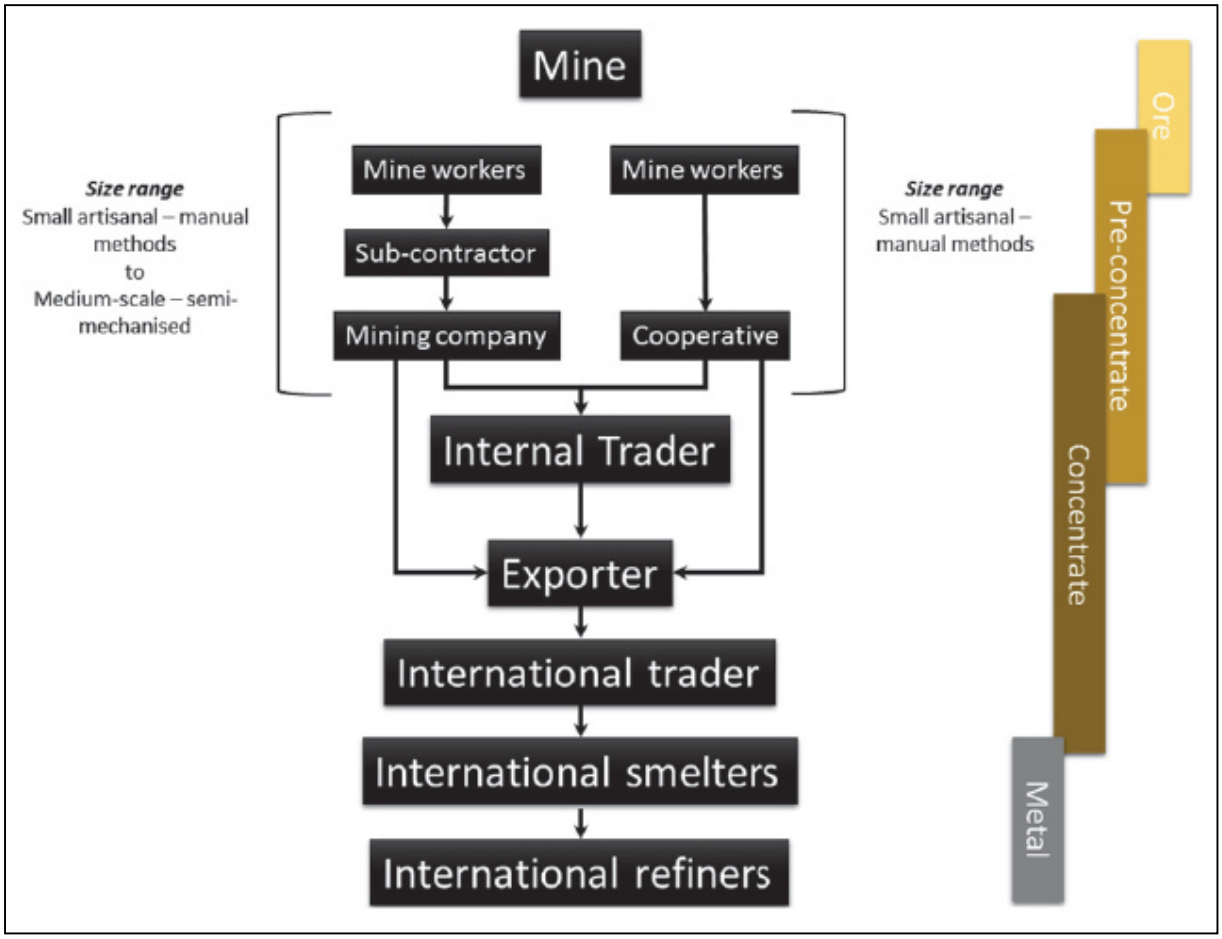

Figure 3: Mineral Supply Chain (Cook & Mitchell 2014:13)

Although nationals are fully involved in the mining extraction and pre-processing, the mineral value chain of Rwanda is still highly dependent on external players, who buy and export concentrate to Asian and European markets, namely cassiterite concentrate to Thailand and Malaysia, tantalite to Hong Kong, and wolframite to Austria (Barreto et al. 2018).

1.4 The mining sector's contribution to the Rwandan economy

The country's economy has been the region's top performer over the last decade with an average real GDP growth rate of 8% with its concomitant effect on poverty reduction that dropped from 59% (2001) to 45% in 2011 (Barreto et al. 2018). Poverty reduction strategies took the mining sector as a key economy and a decisive contributor to the development of the nation. When the latest government's poverty reduction strategy was launched, the sector's potential to attract FDI, create jobs, increase exports and levy taxes and royalties was assumed to help reducing the poverty level to 30% in 2018 from 45% where it stood in 2013.

1.4.1 FDI

Thanks to Rwanda's ongoing political stability and measures focused on improving the business climate, however, FDI flows still remain rather weak. The FDI in Rwanda reached an all-time high of US$471 million in 2015. From 2009 to 2015, a record low of US$118.67 million was registered in 2009 (NBR 2017). In May 2015, thanks to the new investment, foreign investors were no longer required to invest a minimum of US$100,000 because of code that reaffirmed the aim of attracting FDI among others into

tourism, energy and new innovative technologies. Coffee, tea, tin, energy and telecommunications registered a broad interest of foreign investments. Most of the investments came from Mauritius (US$155.6 million) followed by United States of America (US$70.1 million), Kenya (US$51.5 million) and China (US$23.5 million) accounting for 63.1% of total FPC flows in 2015 (NBR 2015). In 2016, according to RDB, the level of FDI registered in Rwanda worth 650.4 million dollars.

Specifically, within the mining sector, foreign investments are expected to increase from US$150 million in 2012 to US$500 million by 2018 according to the target set by the government in the EDPRS II. In 2013, the FDI inward stocks by sector recorded US$2.10 million for mining and quarrying, which represented 1.3% of the yearly FDI (COMSTAT 2017). In the third quarterly IMF economic review in 2017, mining and quarrying were one specific areas of an increased and strong growth with 25% immediately after information and communication 28% (IMF 2018). For the whole year 2017, the Rwandan government recorded FDI worth 1.041 billion U.S. dollars, and the mining sector attracted US$267.3 million, i.e. 25.6% of total FDI in 2017, largely behind the construction and real estate sector (US$638 million), and slightly before infrastructure (US$203 million) (RDB 2018).

Though improved given exploration and mining exploitation taken place on the ground, and providing additional opportunities, this level of the country's attractiveness to FDI got improved. FDI was just halfway from the level expected by the government by 2018. Further actions need to be taken by the government in order to improve the knowledge of geological potential that increase the interest of mining foreign investors.

1.4.2 Employment

The baseline forecast for employment made by the government in 2012 was a growth in the second half of 2017 and 2018 was to reach the level of 60,000 jobs created in the mining sector in 2018. As of early 2014, 33,638 miners were recorded (World Bank Group. 2014). According to estimates made by the BGR in 2015, artisanal activities employ approximately 35,000 miners in total, with >200,000 livelihood dependents, which represent ca. 2% of the population[8]. With the government's intention to increase the sector's professional educated skills base from fewer than 50 to 600 persons through a variety of external university opportunities and development of an undergraduate geology and mine engineering program at the Kigali Institute for Technology, the sector is likely to increase its job creation capacity, much higher than the half achieved in 2013 (World Bank Group. 2014). The human resource puts at disposition helps supporting the mining sector.

The mining sector remains largely dominated up to now by artisanal and small-scale operations. Despite the quantitative improvement, the quality of jobs calls for further attention for ensuring fair salaries and sound working conditions still remain a challenge for the sector.

1.4.3 Exports

The target set by the second EDPRS for the mining sector's contribution to GDP against the 2012 baseline from 1.6% to 5.3% in 2018 by the government. In value, mining exports were targeted to reach US$400 million. And in 2013, despite mineral exports have shown impressive growth of 66%, but remained small and volatile in the overall contribution to GDP. The measure against the government's targets for the mining sector made by the World Bank showed that its performance in 2013 was still not satisfactory. The value of mining exports was US$225 million, slightly more than half way to reaching its 2018 target. Mining exports accounted for 32% of total goods exports, making mining the largest foreign

[8] https://www.bgr.bund.de/EN/Themen/Min_rohstoffe/CTC/Mineral-Certification-Rwanda/CTC_Rwanda_node_en.html

exchange earner. Although the growth of export earnings is constantly remarkable, this is mainly due to the super-cycle of raw materials, rather than the actual increase in domestic mining production itself.

Rwanda's total exports accounted for $600 million, with a 19% shares (US$110 million) constituted by 3T minerals. With a total of 3,846 metric tonnes in 2015, cassiterite was the first among mineral products in the country and was valued at US$72 million, while with 1,652 metric tonnes; tantalite was worth of US$66 million. Both commodities represented 17% of the overall exports, and altogether with coffee and tea, they form the most exported products from Rwanda. In the first seven months of 2016, cassiterite and tantalite exports dropped to 19.2% in value / 15.3% in volume and by 41.4% in value / 21.3% in volume respectively (Barreto et al. 2018). In 2016, according to the UN Comtrade Database, the total exports of the mining sector amounted to US$166.7 million i.e. 26.8% (US$166.7 million)[9].

1.4.4 Taxes and Royalties

With the recent introduction of mining royalties, embedded into national fiscal governance reforms[10], the state's revenue potential from the mining sector gets increased. In 2015, the 3T contributed altogether as royalties, personal income tax, and value added tax almost US$6 million, namely US$3.7 million for cassiterite, US$0.8 million for tantalite, and US$1.5 million for wolfram.

By the end of 2018, the government will hardly reach the target set for the development of the mining sector and its overall contributions to the economy. Despite this development Rwanda is still a country with high rates of poverty ranking low in the Human Development Index (HDI) (163 out of 188 countries) (UNDP 2015). However, taxes and royalties provide a significant contribution to the country's economy and improve the level of revenues levied by the government. If the government had not set the target, as well as the mobilization of the means that followed to reach the target, including taxes and royalties, the vitality of this sector would certainly have been less remarkable.

[9] Minerals Sector Profile Total Exports $166,733,414 UN Comtrade Database (Commodity codes: 26 and 71) from the UN Comtrade website: https://comtrade.un.org/db/mr/rfCommoditiesList.aspx?px=H1&cc=TOTAL

[10] https://www.bgr.bund.de/EN/Themen/Min_rohstoffe/CTC/Mineral-Certification-Rwanda/CTC_Rwanda_node_en.html

2 Policy and legal framework for the mining sector in Rwanda

The economic crisis of the 1980s and 1990s had a major consequence of sharpening inequalities within the elite pushing the country in five years of particularly deadly civil war. The epilogue of this war was the genocide of 1994, also referred to by the United Nations Security Council as the "genocide against the Tutsi ethnic group" and was a genocidal mass slaughter of Tutsi in Rwanda by members of the Hutu majority government (United Nations Security. 2014). These massacres cost the lives of an estimated Rwandan number of 800,000 during the period of April to mid-July 1994 (BBC 2011).

All the economic fabric was ruined, and it was necessary to rethink and envisage the life together differently in order to revive the machine. Many reforms have been set up, which helped the country to start recovering gradually. As part of these global efforts, the mining sector has not been leftovers. The constitution, the vision, the policies, the law, the decrees and the international engagements were since then continuously inscribed in the logic of the economic revival. Before developing them in more detail, attention will first be devoted to the institutional framework which was also undergone the same reform cycle.

2.1 Mining policies

The Rwandan constitution in its current version was introduced in 2013 and is based on Belgian law. Parliamentary elections are held every five years and presidential elections every seven years with the last presidential election that took place in 2017. According to constitutional amendments approved by a referendum in December 2015, the President of the Republic can be re-elected twice (instead of once as it had been the case prior to 2016). Although the presidential term was shortened from seven to five years, this provision of the law would not come into effect until 2024. Therefore the incumbent President Paul Kagame (*1957) was thus allowed to extend his presidential period for additional seven years after he won almost 99% of votes cast[11]. The Rwandan government consists of the national assembly with 80 members (53 are elected directly while the remaining members are elected indirectly by representatives of certain interest or local groups) and the senate that has 24 members (16 directly elected members and eight members that are named by the president).

The mining sector is of great importance that it is even treated in particular in its articles 62, 66, 67, 90, 92, 93, 108, and 201 at the level of the basic law of the country, namely in the Constitution of the Republic of Rwanda of 04 June 2003 (IGF 2017). This is also reflected in the adoption of consistent policies that decline the overall strategy as well as some tactics used by the government to make this sector a spearhead of its development. These include the Rwanda Vision 2020, the Economic Development and Poverty Reduction Strategy (EDPRS), the Rwanda Policy of Mines and Geology, and the Mining and Mineral Policy of Rwanda.

2.1.1 Rwanda Vision 2020

The vision 2020 was launched in 2000 by the government as its policy statement on the long-term development aspirations with a clear indication of implications it will have for the country as a whole. The overarching goal is to reach the status of middle-income country by 2020 ("African Tiger") from the situation of a mainly on agriculture based economic to a diversified service and knowledge-based economy. In addition to its main exports (coffee, tea and minerals), the GoR has identified two further

[11] https://www.theguardian.com/world/2017/aug/05/paul-kagame-secures-third-term-in-rwanda-presidential-election

strategic export sectors, horticulture and tourism (van Teeffelen 2012). Detailed strategies for achieving the vision 2020 have been launched so far in the form of two five-year medium-term strategy documents.

The focus of the Rwandan government's policy regarding economic development has been the progressive privatisation and decentralisation of the economy since 1994. In 2001 the government published a *Poverty Reduction Strategy Paper* that directly addressed the main challenges for economic growth (IDS & IFAD 2015). As from that point, the main strategy adopted by the government to implement its vision was through the EDPRS, which plans financial allocations for the different sectors on a medium-term basis (five years) and thus concretises long-term objectives. The government adopted a five-year medium-term strategy to accomplish its long-term development goals in 2008. The second one, the EDPRS - 2, was launched in 2013 and will be in place until 2018 with the overall goal of accelerating growth and poverty reduction[12]. It aims to achieve the following goals: raise GDP per capita to US$1,240, with an average annual growth of 11.5% (IMF, 2013); have less than 30% of the population below the poverty line; and have less than 9% of the population living in extreme poverty (World Bank 2014). It clearly set targets for the mining contribution to the overall development of the country. Specific targets for the mining sector for 2017/2018 include the six indicators that follow according to RDB website consulted by Barreto et al. (2018):

- *Contribution* of mining to GDP growing from 1.2% to 5.27%
- The mining *work-force* growing from 20,000 to 60,000 members
- Total *investment* (cumulative) in the sector growing from US$150 million to US$500 million
- *Export earnings* growing from US$158 million to US$400 million
- *Certified mine sites* with efficient water and waste management systems growing from 20% to 100%
- Certified mine sites with safe and secure working conditions growing from 25% to 80%.

Other policy documents have equally been adopted to clearly define how the mining sector is specifically integrated in the country's overarching development approach implemented by the government.

2.1.2 The Rwanda Policy of Mines and Geology

The first mining policy document was published in 2004 and updated in 2010 to better reflect and adapt to changes in the sector. As from the beginning, it aims to indicate the general framework of the government's commitment to make efficient use of mineral resources to contribute to poverty reduction. While recognizing the importance of geological resources for the national economy, the policy document advocates sustainable exploitation.

Mining policy is regularly reviewed and the version of the Mining Policy in circulation is the Mining and Mineral Policy of Rwanda of 2017. It is currently the subject of public consultations and will soon serve to strengthen mining governance in Rwanda. However, the implementation of the Mining Policy remains a challenge. For example, the 2010 Mining Policy was only approximately 50% implemented after six years. The Rwanda's mining policy was again to be updated last year, probably to fill gaps of the former policy.

[12] It is made up of four thematic areas, namely the economic transformation, the rural development, the productivity and youth employment, and the accountable governance

2.2 Mineral Act

Policies are converted into rules and regulations that are deemed to frame the development of the mining sector. Besides the constitution that already tackles the mineral development, specific laws regulate in more details various aspects of the mining sector. In that regard the Government has also worked to improve the legal environment by adopting laws and ministerial instructions, orders and regulations frequently reviewed and updated to further improve opportunities for responsible and sustainable investment.

The legal package involves three main laws that prescribe the frame in which minerals should be extracted, processed and traded. The law No 55/2013 of 02/08/2013 tackles specifically the mineral tax, while the law No 13/2014 of 20/05/2014 deals with the mining and quarry exploitation. A specific law No 06/2015 of 28/03/2015 is concerned with the promotion and facilitation of Investment.

Those laws are supported by related ministerial regulations, of which the most significant are those fighting smuggling in mineral trading[13] and the Regional Certification Mechanism for Minerals[14]. Ministerial orders provide the specific procedures for the implementation of certain aspects of the law. It is the case for orders fixing requirements for granting a license for purchasing and selling mineral substances[15], for establishing the Environmental Guarantee Fund[16], for categorising mines and determining types of mines[17], and for application, issuance, and use of mineral and quarry licenses[18]. In addition, a ministerial instruction deals with types, size limits, and modalities for exporting mineral ore samples[19].

Some of those laws have been revised to accommodate modernity and bringing Rwanda's national mining law closer to international best practice, including adapting to changes in the sector (due diligence), or increasing the potential for benefits to the country. In the specific case of the mineral act, revision brought about many improvements. Thus, in addition to exploration and small and large mining licenses, the revised law has created a fourth category of mine licenses, the artisanal license. The revised law has also extended the potential length of lease on both exploration and mining licenses to up to 25 years, depending on the size of the proposed project, which should encourage longer investment opportunities in the sector. For the year 2018, the RDB intends to grant more than 50 new mining licenses to boost its mining investment even further and therefore attracting close to US$2 billion in foreign investment for commodities such as gold, tantalum, tin, and wolfram in, tin tantalum[20].

Investment is further enhanced by the first-come, first-served philosophy found in the revised mining law, which allows a company that has invested in sufficient exploration work with proof of resource and economically good deposit to have first and exclusive rights on converting the exploration permit into an exploitation license. At the same time, to avoid speculative practices, the government has adopted stringent criteria for mine license applications and conditions for exploration licenses. These criteria, covering mine depth, length of lease, and other conditions, are comparable to most mining codes or national laws globally. The law also gives reference to several important conditions for maximizing subnational development impacts, such as local content and skills development. A model mine

[13] Ministerial Regulations No 001/MINIFORM/2010 of 10/03/2010
[14] Ministerial Regulations No 002/2012/MINIRENA of 24/04/2015
[15] Ministerial Order No 003/MINIFORM/2010 of 14/09/2010
[16] Ministerial Order No 001/MINIRENA/2015
[17] Ministerial Order No 002/MINIRENA/2015 of 24/04/2015
[18] Ministerial Order No 003/MINIRENA/2015 of 24/04/2015
[19] Ministerial Instruction No 010/MINIRENA/2016 of 11/01/2016
[20] http://www.miningglobal.com/operations/50-new-mining-licences-rwanda-mining-investment-target-set-2-billion

agreement is under development and should, if completed, provide a consistent template for negotiating future mine contracts with the private sector. In the same way, exploration works can be further improved with reporting standards and follow-up monitoring that will set common requirements for private players involved within the exploration step, as well as acceptable permit approval requirements in the organized and planned post-operation transition that must be prepared and updated regularly carried out by private mining companies with required financial guarantees. The government also needs to reactivate in one way or other abandoned mines within its jurisdiction for increasing possibilities of country's mineable deposits.

A legal and institutional framework was established to improve geological knowledge, investment conditions and value addition. This regulatory arsenal is further enhanced by the international commitments taken by the government. These are the human rights principles enshrined in the Constitution, the Multilateral Environmental Agreements (UNFCCC, RAMSAR, etc.), the Regional Economic Integration Treaties, the ratified international conventions. For more information on these commitments, read the IGF report.

The government is nevertheless hesitating on adopting the EITI standard, which is an internationally well-known foreign investment tool contributing to guiding foreign investors' decisions. This can have side effects on the international image of the country. Rwanda is internationally credited with a good reputation and regarded as a role model for efficient allocation of fiscal resources and good governance in a developing environment (it was rated the world's best reformer since 2006 in the World Bank's 2015 Doing Business Report) the lack of monitoring of economic activities as well as the at times arbitrary enforcement of the laws can be considered a major problem for future investments in the mining sector. The dependence of the political stability within the country on the political situation of its neighbouring countries, especially the DRC, also constitutes a potential threat even though Rwanda itself seems to be politically stable with only few incidents of violence and revolts that have been reported in recent years.

Constant efforts undertaken by the GoR to improve the investment environment, especially in the mining sector have proved to be consistent. Nevertheless the efficiency of the framework and contribution to the country's welfare remain a reachable target. The license awarding process as well as setting a business are some major indications of the government will that is further enshrined in various legal instruments governing the mining sector.

2.3 Investment context

In 2008 the *Rwanda Development Board* (RDB) was implemented to facilitate investments in national entrepreneurship amalgamating all relevant authorities for starting business in Rwanda. The RDB represents the institutional framework for the implementation of the *2006 Investment law* and supports potential investors in obtaining required licenses, visa and an overview of the Rwandan tax system. It also offers them permanent residence and access to land. The minimum financial buffer required for these assistances is US$500,000 deposited for at least six months on one of Rwanda's recognized commercial banks. Apart from a higher initial capital investment rate compared to the one applying for domestic investors, international investors do not face discrimination by law though some have stated having difficulties in obtaining or renewing visa. There is no limit for foreign property but land ownership is limited to lease-hold agreements of 99 years duration for estates that in general are property of the state.

The government is explicitly trying to attract export-oriented investors by providing tax incentives. Compared to other members of the EAC Rwanda is rather generous regarding exemptions from general

tax rules. This makes Rwanda attractive for investments including capital spending in the national mining sector. If Rwanda's complex system of tax exemptions is actually responsible for the desired economic transition towards more exports is neither monitored nor evaluated and consequently the efficiency of the national tax system is hard to determine. This can be however problematic for the Rwandan population since fiscal revenues of the state largely depend on taxes on goods and services like the *Excise Duty* on imports of consumer goods and the *Value Added Tax* (VAT) that is currently 18% on most goods (with some exemptions) but 0% for exports (Table 2), which results in a significant loss of tax revenue that could be used for other purposes strengthening the society. Rwandan Tax revenues are also highly dependent on the corporate income tax rate that is responsible for the majority of direct tax revenues. The corporate income tax rate is currently at 30% (Table 2), which is similar to other EAC countries but significantly lower than the OECD average (44.5%) or the average of Sub-Saharan Africa (67.5%) in 2010. This may also lead to government revenue losses due to a non-used potential of further increasing the tax rate to a public revenue maximising level, however it constitutes a great potential for the growing mining industry. The difficulty in finding the optimal tax rate can be related to the high number of small-scale mining companies operating along with few major companies that are difficult to arrange.

In addition to the mentioned taxes, a withholding tax of 15% on dividends and interest income and some decentralised taxes (e.g. land taxes or licenses) the mining sector faces a number of regulations that have been introduced by the government in recent years such as a Royalty Tax of 4% on the norm value of 3T mineral concentrates and a new mining draft law guaranteeing a longer time span of five years for mining contracts (Table 2). Whereas former regulatory instrument strongly increases the costs for mining activities, the mining draft law is assumed to attract potential investors by making company organisation cheaper and loans more accessible. Other than that there are no further mining specific tax regulations. As of 2012, only 1% of the total national tax revenues are generated in the mining sector. Tax evasion is addressed in Rwandan law by fining delayed tax declarations and tax fraud with penalties up to 100% of the due taxes. This may be efficient for ensuring that mining revenues end up contributing to the government resources, yet it may be too harsh for incentivising investment in the Rwandan mineral industry.

Table 2: Taxation rates according to Rwandan law.

Tax Type	Tax Rate
Corporate Income Tax Rate	30%
Excise Duty*	5-150%
Withholding Tax	15%
VAT - Standard	18%
VAT - Exports	0%
PAYE *(adressed in Chapter 3)*	0%/20%/30%
Royalty Tax on 3T-minerals	4%
Royalty Tax on precious metals and gems	6%
**depending on type of good (e.g. 8% on telephone communications)*	

The clarity and the relative stability of regulations, as well as their consistent application offer the guarantee of an enabling legal and fiscal framework that in turn provides a favourable environment for Investment. The government even envisions upgrading the permitting process to an online application through the mining cadastre system that will increase the transparency in the process of awarding mine licenses, and thereby reducing existing conflicts surrounding overlapping rights.

3 Issues of particular importance for the development of the sector

3.1 Formalisation in the mining sector

The informality of mining activities (ASM) causes disruption across the traceability chain, and therefore artisan miners, especially those involved it can hardly be well treated. Even with the due diligence policy, workers' conditions would not be decisively improved. Neither would communities living in the surroundings be entitled to any legitimate benefits related to mining extraction, nor could the government levy royalties and taxes. In short informal mining puts into question any hope of conducting efficient due diligence policy.

Yet, as in the case of Rwanda, artisanal nature usually goes in hand with the informal operations. That is a constraint to the implementation of an effective traceability scheme, as the origin of the product might be difficult to track. In a national survey on the informal sector conducted in 2007, the informal mining sector accounted for the highest percentage of 34.2%, and more than 75% of reasons explaining informality are related to financial capacities. Since Rwanda's commitment to international and regional processes promoting due diligence and traceability in early December 2010, formalizing 3T mines was significantly improved. Indeed, all sites were quickly covered by the iTSCi traceability system, thanks to a quick wind of reform undertaken by the government at the institutional, legal and operational levels.

However, formalizing the 3T minerals supply chains remains an on-going challenge especially as a well-completed formalization requires a laborious work of integration of these sectors in the economy, which goes far beyond compelling entrepreneurs, often at their expense, to comply with international requirements for the extraction and marketing of certain mineral resources. To achieve this, access to financing, efficient exploitation and processing methods, the most appropriate technologies and a favourable legal environment are some of the essential conditions that the government should guarantee to private actors in order to stimulate their full and profitable participation in formalization processes. It is only from this moment that the royalties, taxes, foreign exchange earnings, and economic and employment multiplier effects could become sustainable.

In the 3T mines, the formalization undertaken by the government is vital, as it is the price to pay to hope to market the minerals produced in a context of application of the DFA. However, the costs associated with aligning with iTSCi standards are significant and could even, in the short term, compromise the sustainability of formalization. On the other hand, the other ores, and in particular the gold, have not experienced the same constraint of formalization as we will return to it later, but similarly poses further challenge for regulators and donors interested in supporting operators.

3.2 Small-scale operations and low productivity

The Rwandan mining sector, despite efforts undertaken by the government and the private sector, is still heavily dependent on ASM production. The government's productivity growth objectives have not been met, as already amply discussed in section 1.4 of this report. Even in some cases, the growth recorded has sometimes been attributed more to the economic situation than to a real improvement in mining productivity.

Barreto et al. (2018) identified a series of challenges that include limited geological knowledge and ground data, low capitalisation of the sector, scarce localisation of mining investment, low productivity and production, poor occupational health and safety practices, and limited human and institutional capacity. Surmounting them can decisively improve the level of FDI attracted, technologies involved as

well as benefits generated for the whole country; otherwise, small-scale operations will hardly change the face of the Rwandan economy.

3.3 The lack of in-country smelting operations and the raw business

Minerals extracted in Rwanda are basically concentrated before being exported for further processing and value addition processes abroad. Past tentative initiatives to efficiently operate a smelter have not revealed being sustainable. Poor public management of the smelter has led to its privatisation. In turn, a foreign company took over the project and was then unable to continue on the long run the smelting operations from a smelter it recently acquired, because of power failure.

In 2016, the announcement of the Africa's First Coltan Separation Plant in Rwanda had raised a lot of hope[21]. Well aware of the difficulties, such as power limitations, brownouts, and electrical storms, the AB Minerals Corporation announced that it had found a solution consisting in developing a new technology to create metallurgical grade tantalum powder and niobium hydroxide from industrial scale processing plants[22]. This low power solution alternately uses electrical energy and diesel. Yet until 2018, no activity is noticeable in the field. Moreover, it is announced in Tanzania with the signing of Memorandum of Understanding with African Minerals & Geosciences Centre in Dar es Salaam and meetings with leading authorities[23].

The Rwandan lack of capacity to offer favourable conditions for smelting operations is contradicting will and efforts already invested in the mining sector development. The country should be supported in the process of incorporating this segment to the Rwandan value chain that will certainly increase the country's benefits, as well as the control over value addition processes. The step of local value addition will increase enhancing local linkages possibilities between the mining sector on the one hand; and infrastructure, energy production, post-mining through processing units and smelting facilities on the other hand. If it is successfully implemented, it may open room for further opportunities, and later the fabrication of end-products.

3.4 Non transparency and smuggling of 3TG minerals from the eastern DRC and Burundi

Rwanda was accused of plundering the mineral wealth of DRC in early 2000s (UN 2001, Montague 2002), as well as decade later, by the UN condemnation of the Rwandan government support to M23 rebels that often make money thanks to the control exercised on the trade in the region's minerals such as gold, tin and coltan in DRC (UN 2012).

Most recently, over the past five years, despite the adoption of iTSCi standards by the government that granted a legal status to the 3T mines since 2010, Rwanda was again alleged to be trading in fraudulently exported 3T minerals from the DRC. These actors operate a few times with Congolese relays, civil or military. According to media reports, many cargoes are regularly intercepted at the borders with the DRC. In 2014, 68 tonnes of cassiterite and 130 tonnes of coltan were seized and deposited at the Central Bank of Congo[24] This is also the case of the seizure of 60 tonnes of cassiterite, coltan and

[21]https://www.cnbcafrica.com/news/east-africa/2016/08/24/africas-first-coltan-separation-plant-to-be-built-in-rwanda/

[22] http://rwandadiasporagermany.com/rwanda-ab-minerals-bringing-home-the-tantalum/

[23] https://www.abmineralscorp.com/presentations-and-news.html

[24]https://www.radiookapi.net/2015/11/10/actualite/societe/nord-kivu-plusieurs-tonnes-de-minerais-exportees-frauduleusement

wolfram in 2015 by the technical unit in charge of the field operations of the national commission for the fight against mining fraud in South Kivu[25].

A 2015 report from the NGO Save Act Mine highlights between August and September 83 incidents of which 69% relate to 3T. The cross-border smuggling of minerals between the DRC and Rwanda is based on the operating networks in Goma, Bukavu and Idjwi. In the city of Goma for example, Congolese authorities even receive money directly from traffickers (SAM 2015). Shipments of smuggled minerals to Rwanda are also examined by an IFRI report. It indicates that Lake Kivu, its small islands and the mountainous areas serve as ore crossings. This is particularly the case for "swimmers" who push tires loaded with bags containing contraband ores produced in invalidated sites, and heading for Gisenyi, the neighbouring Rwandan city of Goma (Musila 2016).

The ongoing insecurity in the eastern DRC is made possible by “a key enabler” condition, the presence of two armed groups originating in Rwanda (FDLR and CNRD), that illegal exploitation and trade of natural resources remained sources of revenue fuelling conflicts (UN 2017: 6). Three shortcomings of the implementation of the iTSCi traceability system in use in the DRC are reported to likely lead to the smuggling of minerals from outside the chain of custody into the legal trading circuit, namely through:

1 “errors or deliberate acts committed by agents responsible for tagging, such as tagging mineral consignments from non-validated sites, could disrupt the integrity of the whole chain”,
2 non-respect by SAESSCAM of “rules and instructions issued by ITRI Ltd for the handling and overseeing of the tagging operations”,
3 “and the iTSCi procedures for the safekeeping and storing of tags and logbooks rendered them vulnerable to misuse by corrupted agents” (UN 2017: 18).

There are four factors for DRC minerals being smuggled to Rwanda, where they are fraudulently re-exported, and which can be added to the short period of interruption of the 3T mining as well as their commercialization in 2010 following a Congolese President Kabila’s decision that incited the exporters of Goma and Bukavu to find outlets for the mineral production which continued however (Spittaels et al. 2014).

1 The presence of armed groups undertaking rebel activity and mineral trade in the Kivu region that are then sent to Rwanda, and re-exported as Rwandan product,
2 The DFA has severely put pressure on international dealers not to buy from conflict areas such as the eastern DRC without having executed proper due diligence requirements. As Rwanda enjoys a full international recognition of its efforts in providing free conflict mineral products, smugglers use that as an increasing incentive for crossing DRC borders with coltan.
3 The export tax is not yet regionally harmonised. As the highest rate is levied by the Congolese taxation system, escaping the borders to Rwanda, one of the lowest export tax rates in the ICGLR, increased benefits made by minerals traders. It is even reported that unlike DRC, Rwanda coltan exports are not taxed (EurAc 2017).

Comparing Burundi with Rwanda the 3T sector incentives, an ICGLR study highlights the Burundi’s taxation level higher than taxes applied in Rwanda, the high increase of fixed fees for the accreditation of “comptoirs” (buying houses) as well as fees on the superficies for ASM miners. In addition, the Burundian miner earns more money by selling his production in the informal sector in Rwanda than when selling it in the formal sector in Burundi. Exporting from Rwanda guarantees higher export prices

[25] https://www.radiookapi.net/2016/02/17/actualite/economie/fraude-miniere-60-tonnes-de-cassiterite-et-de-coltan-saisies-au-sud

of 3Ts than those offered in Burundi. The combination of those reasons further increases the enticement to under declare minerals content and/or value in Burundi in order to smuggle to Rwanda (ICGLR 2015).

Furthermore, the country regulation related to the "Made in Rwanda", as far as commodities are concerned further amplified the problem. According to Fidele Uwizeye interviewed by van Teeffelen (2012: 28), "Rwandan legislation allows foreign minerals to be exported as 'Rwandan origin' if more than 30% value is added in the country". Another report stated "For coltan, for example, the ore imported from DRC is declared as having been produced in Rwanda when it undergoes a treatment that increases its value by 30% (EurAc 2017: 13). Though it was not possible to directly access these sources, the repetition might indicate a certain consistency or at least a common practice and beliefs supporting such operations.

Besides the 3T, the gold sector is suffering much more from the lack of a traceability system than the 3T. Gold was Rwanda's largest export commodity in 2016 (The Enough Project 2017), and accounted for up to 13% of exports[26]. This could be due either to the quality of the observatory's data, which is unlikely, or to an external origin of the gold which is then exported as a product of Rwanda. Other sources show that official gold exports are increasing as much as suspicions seem to spot the probable origin of this gold in eastern Congo. In 2016, a surge of gold exports was registered in Rwanda from US$8.1 million in 2014 to US$31.3 million in 2015, and to US$80.06 million, with a yearly increase of 155% between 2015-2016 (The Enough Project 2017). Rwanda has no known substantial reserves of gold and yet exports significant quantities of gold (Ayittey 2017, Barreto et al. 2018).

Players involved in the fraudulent export business in Rwanda are among others mineral traders and exporters. Several cases of Congolese gold sent to Rwanda for being re-exported were reported. In October, 15 kg of gold casually attempting to fraudulently pass through a small border crossing between the DRC and neighbouring Rwanda was seized at the Kasindi border[27]. In November 2015, as an illustration, according to the evidence provided by the UN, one Bukavu-based exporter alone, not identified in the official South Kivu provincial government statistics declarations, declared exports of 270 kilograms of gold that transited in Rwanda where export declaration forms were filled before being exported to Dubai (UN 2016). This represented that year more than the triple the total combined volume of officially declared gold exported from South Kivu by all exporters. Such practices help to increase official gold exports in Rwanda, though much of that gold is likely to have originated in eastern Congo.

Just as for 3T, dis-incentivising smuggling and facilitating an increased legal, conflict-free gold trade still remains a problem and a challenge, as the failure to harmonize gold mining taxation in the Great Lakes region is still at the expense of the DRC whose ASGM gold seems profoundly uncompetitive.

3.5 Limited human and institutional capacity

The genocide critically affected the Rwandan population that lost 800,000 people in 1994 (other fled the country and have not returned so far), among them were skilled people as well as members of the young productive generation that could have been trained in the mining services. In 2009, 40 mining scientists were identified, only four of them were below the age of 40 (Nwapi 2017). In 2012, another study showed that there was one mining professional to 3 technicians and 38 artisans; although Lagos Plan of Action indicates that in the production industry there should be one scientist to 5 technicians to 30 artisans (RDB 2012). Recognizing the earnestness of local skills development in the poverty reduction, the government took significant steps toward build capacity in the context of ASM with questionable results.

[26] https://atlas.media.mit.edu/en/profile/country/rwa/

[27] https://www.radiookapi.net/2015/11/10/actualite/societe/nord-kivu-plusieurs-tonnes-de-minerais-exportees-frauduleusement

Though continually improving, human and institutional capacities have not proved yet its ability to achieve the government's aim of using mineral sector as a levy for the country development, further efforts need to be made to curb the low productivity and production in the sector.

A decentralised programme, focusing on the upgrading of ASM into the industrial mining, should be involving the public sector, private sector and local communities. A specific capacity building should target local government offices on the way to deal with environmental, health, gender, and social issues as well as another one for decentralised MINIRENA officers on the RCM that is further examined in the section 5.3. In addition, for providing more possibilities to local entrepreneurs in the sector's development, the government should adopt and implement local content legislation.

4 Case study: the Gifurwe Tungsten Mines (GTM)

The Rwandan mining context is dominated by artisanal mining, which leaves few opportunities to find mining companies and cooperatives with an international reputation in the sector. Though cooperatives play a significant role in Rwandan mining production as illustrated by the COMIKAGI, one of the largest and most productive ASM cooperatives, the case study privileged small companies because they control mining and trade of mineral products. Thus, among those small, and sometimes anonymous firms, the choice was on a Rwandan company holding a close and lasting business relationship with the European market for mining processing (smelting, refining). That is why operations of the WMP will be further explored below. Information used here is largely informed by the detailed case study report on GTM conducted by Barreto et al (2018).

4.1 Short History of the Gifurwe Tungsten Mines

GTM is located in the Burera District in the North-western Province of Rwanda, precisely in the Rwengabale Sector. The concession is owned by a Rwandese company headquartered in Kigali, the WMP. It is Rwanda's second-largest tungsten (wolframite) producer and an advanced, semi-mechanised mining operation that heavily relies on ASM workforce.

Having started operations in 1937, the Gifurwe Mine was taken over by a series of companies until the nationalisation of the mine in 1989. On 15th November 2006 a "Contract for acquiring mining concessions" was concluded between the government of Rwanda and Wolfram Mining Processing Ltd with the purpose of exploring and running mining operations within a permit named "Gifurwe". Wolfram Mining Processing Ltd. started working on 22nd Dec 2006 in Rwanda where it first explored the Gifurwe Mines and two years later, another mine, the Rwinkwavu Mines. After the preliminary operations of 2006, and taking advantage of the privatization of REDEMI's 20 concessions in 2007, the WMP acquired Gifurwe following a tendering process. 51 employees began in Gifurwe, of which 08 were involved in finance and administration. The WMP contributed to increase national wolframite production to 2,988t (2007) from a revised 109t (2003) besides other new producers such as Africa Primary Tungsten SARL, Eurotrade International S.A., Pyramid International, Rwanda Allied Partners, and Wolfram Bergbau- und Hütten GmbH Nfg[28].

The MINIRENA and the RDB have signed a five-year mining concession extension with Wolfram Mining and Processing Limited for Wolfram - also known as Tungsten - exploitation in December 2012. The WMP was to invest about US$6M with this extension. It also conducted a detailed prospecting and feasibility study. In 2017, this company held a permit covering an area of 812ha, and comprised 15 active extraction sites, and another 15 non-active.

4.2 Mineral Production at GTM

The company allocates the mine site, provides the heavy equipment (excavator, bulldozer), the tools as well as the PPE necessary for mining operations.

The WMP employs 40 people involved in the supervision of the mining extraction on 15 extraction sites including explosives and blasting teams, other technicians, and captains, as well as the tailing processing plant. It relies on 7 captains under contract with the WMP with for mission of overseeing activities of subcontractors, each of which is in charge of one of the 15 sites as illustrated in the following figure.

[28] http://www.wmprwanda.com/#

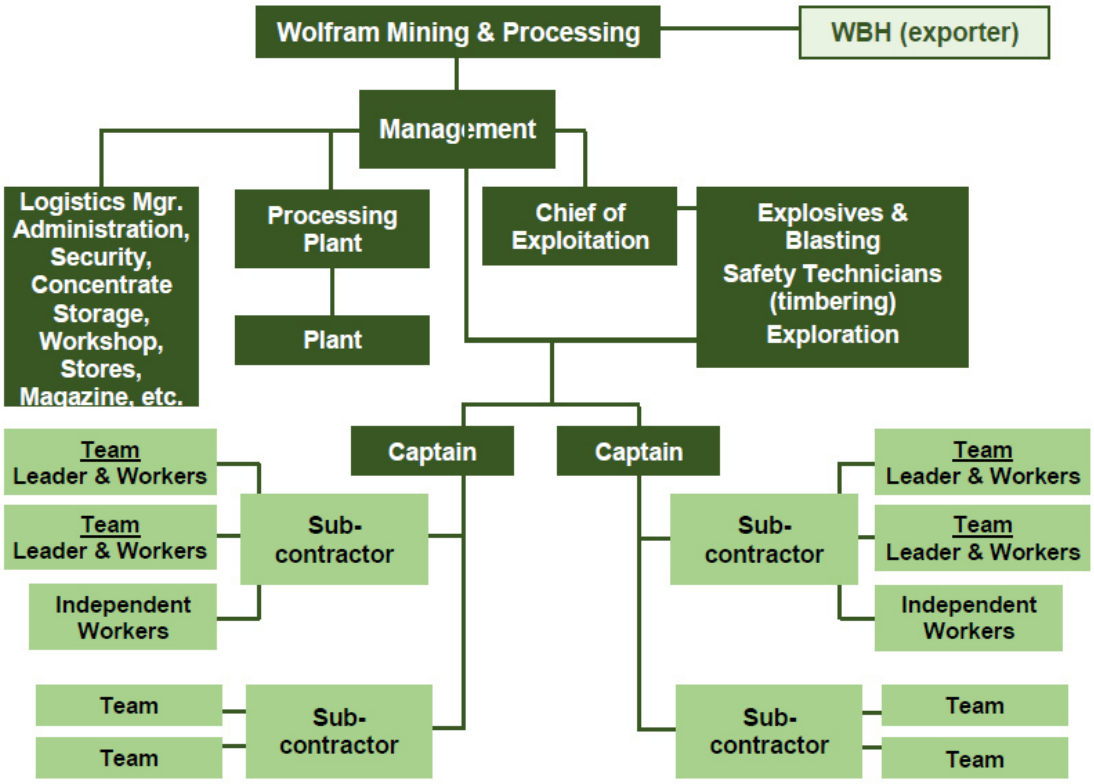

Figure 4: The organisational structure of Gifurwe Wolfram Mine (GTM) (Barreto et al. 2018:70)

Altogether, the WMP subcontractors operate with 660 mineworkers, among those approximately 20 women. Those miners are organized in teams ranging in size from 5 to 30 people that work from 7 am to 3 pm daily, except during the preparation/development work and at the processing plant where typically two shifts operate in a day. The subcontractors recruit the team leaders and often some workers. In turn, these team leaders are responsible for building their work teams. They are usually bound only by verbal agreements.

The WMP also inspects the work of subcontracting and purchases all the resulting production. The company processes the pre-concentrates itself thanks to the plant that can handle 5–8 tonnes of material from tailings and produces 30–40 kg of WO_3 concentrate per day. The final concentrate ranges 62–67% WO_3 is subjected to magnetic concentrate per day. Between 2013 to middle 2016, wolframite concentrate[29] production decreased from 8-12 tpm to 3.5-6 tpm. In July and August 2016, mine production averaged 5.85 tpm.

The mineral extraction, which consists of a series of tunnels and shafts branching from six main adits, mostly takes place underground since reserves for surface mining are becoming depleted. Ore-bearing veins can be approximately wide of 80–100 cm and grades that can be exceptionally high (4.5–8%) like for the tungsten trioxide (WO_3). Once recovered, they are hauled and processed through manual ASM technology. The team production that varies widely is ranged from 5 to 6 kg per day, while individual workers production is reported to be comprised between 4 and 5 kg per day.

No case of child labour was observed on mine sites ran by WMP during field investigations undertaken in 2017. Nevertheless, some little cases could occur on informal sites. In general, child labour is not usual in Rwandan mining because of the legislation that severely punishes any offender. Similarly,

[29] Concentrate is valued based on metric tonne units of ammonium para-tungstate, wherein 1 metric tonne unit equalling 10 kg contains approximately 7.93 kg of tungsten.

gender issues are also taken seriously by the WMP. In over 660 mining workforces under field operations controlled by the mining company, approximately 20 women are involved and even report achievement of multiple gains from their work in mines. Although it is still far away from the governmental 30% target of female employment in all sectors by 2020[30], it is already a victory over prevailing beliefs in Rwanda that women are not suited to underground work (Hinton 2016). The WMP enables women to have access to better quality jobs, and in that direction, four women were contracted as company's captains. The progressive mechanisation as well as the improvement in mining and processing techniques (shaking tables, jaw crushers, etc.) are some of further steps that WMP can take in its efforts to challenge gender discrimination (Barreto et al. 2018).

4.3 Impacts of WMP activities in Rwanda

On WMP-controlled mining sites, some socio-economic and environmental impacts have been identified. While the first are largely positive, the second are the opposite, and potentially highly negative.

4.3.1 Socio-economic impacts

Mining activity as conducted by WMP generates direct benefits for mining workers, subcontractors, and the company (WMP) as well as the GoR and local communities. For local residents, and specifically for employees at the service of mining extraction, they receive salaries and wages, of which the average daily salary is ranked from $1 for supporting miners (helpers), $1.44 for ordinary team members, to $1.75 for team leaders. Production team members are paid by the production at a rate of $2.1 per kg of concentrate produced. In the category as a whole, mining workers earn up to 55.3% of the total export value. In addition, all workers (mineworkers, employees, contractors, and sub-contractors) are covered by social insurance paid from deductions of 8% social security (4% per worker, 4% per employer) made by WMP. The WMP improved OHS, including widespread use of PPE; frequent and on-going inspection, supervision, and timbering activities; availability of first aid treatment; and a vehicle to transport injured workers, among others.

For the government, taxes, royalties, and levies are paid by various actors (workers, subcontractors and companies). These include the income tax (15% PAYE) paid by workers, including casual workers whose monthly income exceeds US$37.5. Similarly, each subcontractor pays an annual lump sum of US$75 according to the legal micro-enterprises scheme, while the WMP pays 30% of corporate income tax.

The work of the WMP also ensures the necessary traceability costs that are levied by the GMD on behalf of the RCM, and the ITRI per tonne of metal contained in the concentrate at the point of export to finance the RMAP. These cumulated costs represent approximately 5.4% to fulfil due diligence requirements on the APT production in Rwanda. Furthermore, a fixed full membership of US$1,800 must be paid yearly to ITRI for upstream companies.

In sum, the WMP's activity generates certain financial benefits for all the actors involved in the production chain. Mining workers earn up to 55.3% of the total export value; sub-contractors 7.3% before deductions (social insurance, personal income tax); and the WMP, 21.3%. The GoR also obtains 10.7%, according to the following distribution 4% as royalties, 5.5% of social insurance, and 1.2% of personal income tax of workers. The remaining 5.4% is traceability, especially for iTSCi and RCM.

[30] Rwanda has adopted a National Policy on Positive Discrimination towards Women and sensitisation campaigns at various levels, which both contribute to the expression of Rwanda's political will on this respect.

The indirect effects of the mining activity of the WMP are not negligible either. They are visible at village level through the investments made by the workers in agriculture, livestock and parent support. Subcontractors have made more significant ones including the purchase of agricultural land and livestock, the acquisition of motorcycles, the construction of houses, and the schooling of their offspring. Altogether, this represents up to US$370,000 annually engaged in local development. At the level of the Burera District, miners' and sub-contractors' incomes in 2015 alone injected in the district economy an approximate amount of US$1.8 million. In terms of multiplying effects, this represents 2,487 direct jobs and 6,216 indirect jobs, and an economic contribution of US$6.3 million per year approximately.

Despite these significant positive impacts on the country and neighbouring communities, the WMP's activities also have some negative effects, particularly on the environment.

4.3.2 Environmental impacts associated with the WMP mining production

The pre-processing operations carried out by the subcontractors reveal mining tailings are not fully mastered, and flow somewhat uncontrolled downslope from sluicing areas. This puts siltation risks on downstream watercourses of the treatment area. The main consequence is on the water quality, which could be contaminated by deleterious elements such as arsenic for example.

WMP collects tailings from the plant in basic impoundments, and stockpiles waste rock in specific areas of the mine, but the overall mine waste management system needs further improvement. As compensation measures in the area impacted by the mine, the WMP has conducted an intensive reforestation campaign since September 2016 resulting in 135,000 planted trees and 90ha of land allocated to forestry. Although the company's efforts seriously contribute to the overall environmental protection, they do not frontally address pollution risks related to washing and processing methods.

4.4 Exports and Refining

The concentrate collected by WMP is exported to Europe. In July 2016, export prices were US$8.4 per kg of concentrate, corresponding to 68.5% of European APT price, but the actual prices depend on the contract between the seller and buyer. The mining production is refined by the WBH in Austria, one of the subsidiaries of the Swedish group SANDVIK.

In sum, the WMP's case study reveals the relevant involvement of local actors in the development of the mining sector. The creation and the efficient management of a mining company ensures to its personnel an appropriate treatment, and resorts to the subcontractors to assure the field works which it supervises so that they comply with the requirements enacted by the government as well as by the market. The ores produced by the subcontractors are collected, concentrated and marketed by the WMP. Continuous improvement in productivity requires that production techniques involving appropriate technologies and capabilities be a permanent quest.

However, despite the socio-economic benefits generated in the riverine communities, continued efforts need to be made to reduce or even reverse environment damages resulting from mining activities. The GTM case study shows how stakeholders (mining company, artisanal miners and neighbouring communities) can partner together in a peaceful and mutually beneficial way in the mining extraction. It can be viewed as a way of sorting out conflicts between ASM-LSM. Moreover, this approach proves in that case to be an efficient strategy for formalizing operations in the ASM with the active collaboration of mining companies. They can agree with teams and individual artisanal miners to collaborate in the mining extraction, and therefore providing assistance to the artisanal workers with PPE, tools, machines, carrying out very dangerous tasks, such as blasting, by experts and the artisanal miners, who are –

through this agreements – allowed to work on the company's concession selling their production to the company and thus having a legal market access guaranteed.

Though limited to the value chain extraction segment alone, this smartly organized participation indicates that the country has gradually begun to catch up in terms of skilled manpower and that it could improve to the point of taking over segments that are still missing. The idea of a partnership between the Rwandan private sector, which already maintained good relations with WBH and the other smelting operators, could be a step in the right direction.

5 Institutional architecture / Mapping stakeholders in the mining and metallurgical sector in Rwanda

Players that support the development of the mining sector can be grouped in three major components. They are mainly the government, private sector, and international partners. Before going any further in each group, a first consideration is given to the institutional architecture in the hands of the government.

5.1 Government

The following four institutions constituted the institutional pillars of the Rwandan mining sector. These namely included the MINIRENA, the RMPGB formerly known as the RNRA, the RDB and the REMA. MINIRENA was until 2017 the ministry in charge of the mining sector (Mines and Geology), as well as four other sectors (Lands, Water, Forestry, and Environment) on which it developed sectoral policies and legislation, oversaw institutions resulting from the global framework, but also coordinated and supervised activities taking place within those departments and units. Having those departments under the same ministry offered opportunity for efficient coordination among various aspects of natural resources. Yet, the former Ministry of Natural Resources was disbanded in 2017, followed by the creation of the RMPGB, considered as a ministry alone that reports directly to President's office. It is in charge of overseeing matters related to mining, petroleum and gas. Another significant change resulting from the dissolution of the MINIRENA was the creation of two other: the Ministry of Environment and the Ministry of Lands and Forestry. In addition, the former Ministry of Natural Resources and officials of RNRA were arrested in early 2017 over alleged mismanagement, including 'favouritism, falsification of documents and usurpation of powers' (Xinhua 2017)

For the specific mining sector, the ministry attributions included promoting mining and quarrying activities on the ground as well as their follow-up and evaluation. Under the minister, the board of directors' coordinator, each direction was responsible for a specific sector. The Office of the Director General that came under the board of directors was concerned with legal affairs, public relations and communication. Under the Office of the Director General came the specific departments, namely the Mines and Geology department that manages four units.

- *The Mine Regulation and Inspection Unit was* concerned with the monitoring and enforcement of the legal framework adopted in the mining sector. It included inspections, minerals traceability, and certification processes. In that regard, the ICGLR Mineral Certification Unit created in 2011 to combat smuggling activities keeps records of all traceability information (logbooks, tags, and mine site inspection booklets) as well as certificates granted.
- *Mining Cadastre and Licencing Unit* helped in the efficient management of permits and even provided a spatial view into the mining cadastre data by using Flexi-Cadastre. In doing so it improved stakeholder communications, reduced confusion and corruption, and therefore improved transparency in the mining sector.
- *The Petroleum Exploration Unit* is responsible for exploration, evaluation and monitoring of the survey operations that were related to hydrocarbon potential.
- *Geological Surveying and Exploration Unit* was vested with a mandate of geological mapping and assessing mineral resources.

Besides the ministry (MINIRENA), some specialised agencies such as the RMPGB, RDB and the REMA operate in the field of mining.

RNRA: up to March 2017, it was the sole authority responsible for the natural resources in Rwanda and was responsible for supervision, monitoring, and insuring the implementation of issues relating to the promotion and protection of natural resources which is composed of land, water, forests, mines and geology... Since then those missions were split and distributed to three bodies namely the Rwanda Mines, Petroleum, and Gas Board (RMPGB), the Rwanda Lands Authority, and the Rwanda Water and Forest Authority. Although the last two institutions have some links with the mining sector, it is the first one that is directly qualified for matters related to mining, petroleum and gas. A new Mines, Gas and Petroleum Board was established in February 2017 to coordinate government efforts in these sectors as illustrated in the Figure 5.

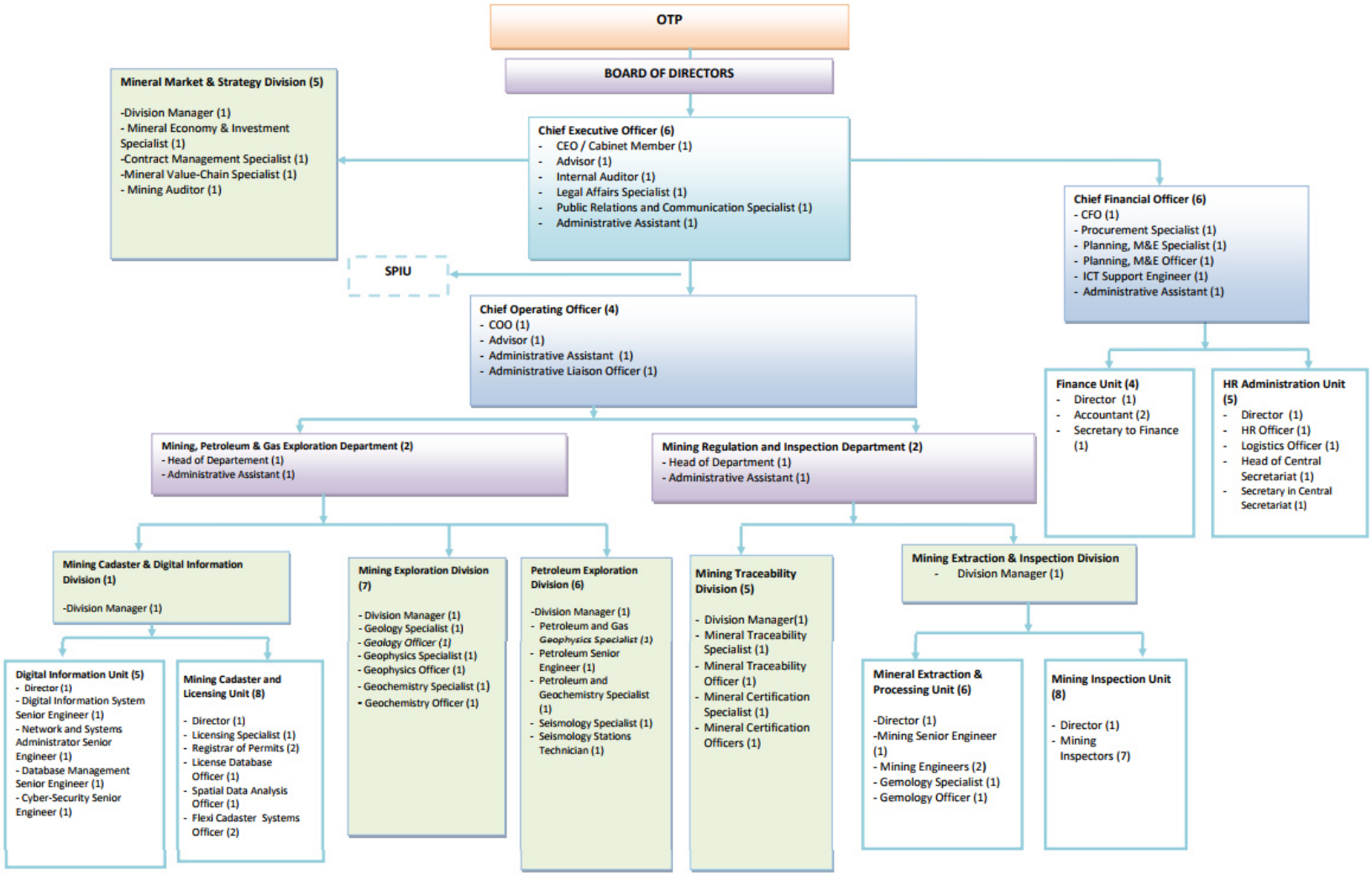

Figure 5: Organisational chart for Rwanda Mines, Petroleum, and Gas Board (Official Gazette nº 33 bis of 14/08/2017)

Through its five specific units (Geological Survey, RMPGH Business Support Services, Mining Cadastre and Licenses, Legal, and Mine Inspection), the RMPGB executes its missions which include exploration, licensing, inspection, regulation of the sector, as well as reputational challenges associated with conflict minerals to very basic domestic issues of infrastructure and capacity. It is headed by a CEO and holds the mandate to improve mining operations and implementation of the national mining policies and strategies (IGF 2017).

Provinces, districts, sectors, cells, and villages can often abide decentralised units of the government, but their size and importance are related to needs and challenges on the ground.

RDB

This service is concerned with improving the living conditions of Rwandan society as a whole through the mining sector. Among its missions, the support of sustainable economic growth, and the promotion of prosperity are prominent.

REMA

It is established to act as the institution that implements environmental laws and policies. As such, it has a lot to do with the mining sector, which is also associated with environmental concerns (IGF 2017).

A number of ministries and governmental agencies have significant influence on the mining sector in the way they participate in the strategy put in place. Among these ministries are the MINECOFIN (Finance and Economic Planning) through the Rwanda Revenue Authority concerned with the mobilisation of state revenues; the MINICOM (Trade and Industry) issuing mineral trading licenses for mineral dealers; the MINEDUC (Education and Training) thanks to the Workforce Development Authority overseeing among others the vocational training, entrepreneurship development; and the Ministry of Gender and Family Promotion (MIGEPROF) implementing the national gender agenda which includes supervising the National Women's Council. Other ministerial departments such as Health of Local Government, East African Community are involved as well giving their specificities. Nevertheless, the coordination among various responsible authorities remains challenging, as well as the specific lack of integration between two specific mining institutions (MINIRENA and RDB) causing disruptions in the administration of the sector.

5.2 Private sector and civil society

The private sector is made up of several critical players like mining operators, trade unions, and a variety of professional associations that obtain mining concessions of greater or lesser size and develop them, either through complementary geological research or by mining itself. In doing so, some of these actors organize themselves to make the best out of their work through various initiatives.

Mining companies and cooperatives are all strictly dependent on ASM workforces to produce or collect 3T minerals. A list of main active companies in the 3T sector is provided (cf. table 1). To secure their future supply some companies concluded off-take or joint venture agreements with cooperatives. In such a context, smaller and less formal cooperatives, usually technically deficient and less capitalised, faced challenges in meeting legal requirements associated to due diligence.

Nevertheless, the proper extractive work of many artisanal miners is organized by cooperatives or subcontracting operators in the field. The law governing cooperatives define four levels of cooperatives, the cooperative itself, the union, the federation and the confederation. A cooperative is the very basic level in the hierarchical organisation of cooperative. It is composed of seven persons who shall not

belong to the same nuclear family as stated in the cooperative law[31]. It can be dedicated to production and marketing, commercial and consumer services, and multipurpose cooperative organisations. It can be affiliated to a union and there is no provision for a dual belonging. A cooperative can become directly a member of federation only when it has no possibility to transit through union. The union is a group formed of three or more cooperatives as well as a federation is made up of three or more unions, while a confederation is formed of three or more federations. The confederation is the highest level of organisation of cooperative. The NCCR established in 2010 is the result of 09 federations joining together to represent cooperatives at national, regional and international levels; advocate and lobby for cooperatives, build capacities of cooperatives and provide supervision and audit to cooperatives. The federation specialised on mining was registered on the 11.02.2015 in the district of Nyarugenge, though created sooner.

Supervised by the *FECOMIRWA*, the single mining federation existing in Rwanda was established in 2009 when four union cooperatives (UCOMIMU, ICOMIGABU, UCOMIRU, and RUMICO) considered as the founders of the Federation came together to form the umbrella cooperative organisation in the Rwanda's ASM. FECOMIRWA is the federation of all mining cooperatives in Rwanda and oversees and supervises mining cooperatives in the whole country, while also acting as a buyer, processor, and exporter of tantalite, cassiterite, and wolframite from the cooperatives and small-scale companies. In the cases of a cooperative (COMIKAGI) and a small mining company (Gifurwe Tungsten Mines), their production is currently sold to both FECOMIRWA and other processors and exporters (Barreto et al. 2018). Besides the federation, other mineral dealers and exporters are involved in the trade of minerals, but do not constitute a homogenous group, as their operational and financial capacities are hugely uneven.

A certain number of strong professional associations concerned with the improvement of working conditions are active in Rwanda. This is particularly the case of the RMA, the REWU and Women and Men Artisanal Miners Organisations. Rwanda Mining Association (RMA) brings together mining companies, cooperatives, and exporters with the aim of promoting and defending interests of its members through lobbying and advocacy. In the same way, the Rwanda Extractive Industry Workers Union (REWU), a trade union of mining and quarry workers, helps in organising, building capacity of its members and defending their rights. Created in 2014, it was quite instrumental in transforming the verbal contract into the actual written contract. Its annual report recommends specific improvements in the labour rights situation and is largely distributed among relevant targets such as ministries, agencies, and institutions such as MINIRENA, RNRA, NEMA, MIFOTRA, RMA, etc. In addition to these associations that act without any discrimination between genders, other associations acknowledged them and base their actions on these specificities. Women and Men Artisanal Miners Organisations raised gender concerns in the mining sector, in a context where one of the targets set by the government in its vision document is to reach 30% of women's employment in all sectors by 2020. As an illustration, WIAMO, by far the most active association, deals with mining and traceability and involves gender specificities in its discourse as well as impacts that affect women. It promotes dialogue at various levels of society and openly addresses the issue of women in the mining sector.

[31] Article 10: Number required Establishing a Primary Cooperative Organization. Of the law N° 50/2007 of 18/09/2007 determining the establishment, organization and functioning of cooperative organizations in Rwanda. Accessed online at http://www.minicom.gov.rw/fileadmin/minicom_publications/law_and_regurations/LA_LOI_SUR_LES_COOPERATIVES-2.pdf

5.3 Regional and international stakeholders

Some external partners support the development of the Rwandan mining sector: other neighbouring African states, sub-regional or continental institutions, and beyond the continent. Their role can be summarised in funding or providing advises and technical capacities to community-based organisations, private operators and the government.

ICGLR is an intergovernmental organisation made up of 12 States in the African Great Lakes Region and 7 co-opted members that resulted from the recognition that political instability and conflicts in these countries have a considerable regional dimension and thus require a concerted effort in order to promote sustainable peace and development. The 1994 Rwandan genocide is one of the most notable among the conflicts that clearly depicted the cross-border nature of its impacts. Headquartered in Bujumbura in May 2007, the ICGLR Executive Secretariat coordinates, facilitates, monitors and thereby ensures the implementation of the Pact in order to attain peace, security, political stability and development in the Great Lakes Region[32]. In 2010, with respect to natural resources that were partly fuelling conflicts in one of its members (DRC) with considerable regional implications, ICGLR adopted its Regional Initiative against the Illegal Exploitation of Natural Resources (RINR) as part of the "Lusaka Declaration of the ICGLR Special Summit to Fight Illegal Exploitation of Natural Resources in the Great Lakes Region". Rwanda clearly endorsed the regional initiative. For the implementation of six tools and four principles[33] of the RINR, the secretariat is dedicated among others to provide support to member states in order to guide ASM formalisation, establish and adopt the RCM, which was finalised in 2011 and became compulsory within all ICGLR member states. It aims at providing the regional framework for mineral certification and supply chain due diligence, by requiring both mine certification and the implementation of a traceability process for minerals. Across the value chain, minerals can be tracked through an ICGLR-run database with additional third-party verification. The Rwandese government went further and adopted it as a legal obligation in the set national regulations[34] and created an ICGLR Steering Committee (Schütte et al. 2015).

AMV – AMDC

African Union and the United Nations Economic Commission for Africa launched the AMV in 2009 as the overarching policy framework for the African mining sector. It intends to utilize Africa's mineral resources much more strategically than in the past as a foundation for realising the economic development and industrialisation, namely through optimising linkages between the minerals sector and the local economy. The promotion of such an inclusive development rests on nine pillars[35] (AMV 2009). The AMDC was established to support adoption and implementation of country and continental visions, and translate the vision into action plans. Rwanda is one of the 24 African countries that have been individually committed to aligning their national policies with AMV principles advocated by the AU.

[32] http://www.icglr.org/index.php/en/background

[33] The six tools of the RINR as stated on the ICGLR website: (I) Regional Certification Mechanism (II) Harmonisation of National Legislations, (III) Regional Database on Mineral Flows, (IV) Formalisation, (V) EITI Peer Learning Mechanism and (VI) Whistle-blowing Mechanism.

Four principles of the RINR: (1) Chain of custody tracking from mine site to export, (2) Regional tracking of mineral flows, (3) Regular independent third-party audits, (4) Independent mineral chain auditor (IMCA).

[34] MINIRENA regulation No. 02/2012 of 28 March 2012, stating that after 15 December 2012 "no one is allowed to export Designated Minerals from Rwanda unless a duly authorized government agent has inspected the mineral shipment and issued an ICGLR Certificate" (art 2).

[35] (1) mineral revenues and mineral rents management, (2) geologic and mining information systems, (3) building human and institutional capacities, (4) ASM, (5) minerals sector governance, (6) research and development, (7) environmental and social issues, (8) linkages and diversification, and (9) mobilising mining and infrastructure development.

Accordingly, SDMIR project (2017 – 2020) tackles each of these pillars in the case of Rwanda, while it provides an additional framework for M&E and related reporting thanks to foreign funds (Barreto et al. 2018).

EU

The European Union's agenda is to achieve a 'smart, sustainable and inclusive growth' at the horizon 2020. The raw materials strategy, titled *Raw Materials Initiative – meeting our critical needs for growth and jobs in Europe*, launched in 2008, outlines the Union's policy response to the growing challenge of a sustainable raw materials supply. As the African continent is one of the supply sources, the EU also intends to use its development policies for securing a sustainable supply of raw materials from the continent (van Teeffelen 2012). In recent years, the strategy was translated in the Rwanda mineral sector by several operations. One of the critical commitments of the EU is to support and foster the due diligence mechanism envisaged by the future European Regulation as accompanying measures envisaged by the EU and its member States. The EU intervention can be either directly to the country or indirectly transiting through a third-party, which can be a regional organisation, the country as an affiliate, European private sector or any international institutions and usually consists of funding. This support includes in Rwanda incentivising measures for the European SMEs to comply with the provisions of the regulation, 3 million euro funding for three years (2014-2016) to support the ICGLR in the RINR's implementation and additional funds for a three years extension, The EU-UN Partnership on Land, Natural Resources and Conflict Prevention with a 1.5 million euro contribution and some 4 million euro envisaged funding for the 2017-2020, the allocation of 20 million euro that was intended to be allocated to the promotion of responsible mineral sourcing from conflict-affected and high-risk areas, which include Rwanda, as well as further support for monitoring cross-border activity economic, commercial and social activity between Burundi, the eastern DRC and Rwanda (EurAc 2017).

Some EU member states are individually involved in the Rwandan mining sector, namely Germany, Netherlands, and United Kingdom. For the German interventions, GIZ and BGR are respectively the political and technical arms of the government in its support to ICGLR that it happens to be the main supporter. GIZ supported a number of ICGLR initiatives including the ICGLR Guidelines on Mainstreaming Gender in the Minerals Sector, which incorporates gender issues in its natural resources sector policies.

Technical support in the mining sector was provided by BGR as in the case of the National Research Centre for Information Technology (GMD) through training of government officers related to mine inspection and provision of direct facilitation. It also conducted fieldwork in association with their 3T fingerprinting efforts as well as supported the setting of mine standards; mine planning, and expected improvements in the ASM status. In addition, BGR provided training on improved mine development practices in cooperation with GMD, including environmental audit practices. Another European MS contribution comes from the Dutch government through the DMFA that provided some direct support to the ICGLR for fulfilling the minerals traceability policy. The United Kingdom is the third European country involved in Rwanda. Through DFID, it supports the SDMIR, formerly known as the SSAMIR, which aims at creating a business-enabling environment for increased private sector investment in mining in Rwanda where growth is sustainable, both economically and environmentally. The project is being implemented by a consortium led by the Cardno Emerging Markets (UK), Ltd. (Barreto et al. 2018).

Jointly commissioned by BMZ, BGR and GIZ provide support to the ICGLR including to the secretariat, associated regional bodies as well as national stakeholders in member states such as Rwanda. It ran a two components' module from 2011 to 2015. One was the introduction of the AFP method in the Great Lakes Region and the second one was the implementation of the RCM and the formalisation of Artisanal

and small-scale mining in Rwanda and Burundi within the Regional Initiative against the illegal Exploitation of Natural Resources.

The World Bank mainly contributed to the major 2014 assessment of mining's contribution to Rwanda's national development through the Africa Governance Initiative.

UN Women offered training on gender and extractives, will likely take more significant actions with regard to the gender issue in the ASM in the coming years.

BSP is a social-impact company that was founded in 2013 to support responsible supply chains. It works commercially and developmentally with the participation and financial support from organisations that share a similar value proposition[36]. The first agreement with the DRC Government to launch traceability systems signed in 2014 resulted the following year in a test of the traceability system in Numbi, DRC. It expanded in Rwanda and launches the BSP's first tantalum supply chain in 2016 followed in 2017 by its first tungsten supply chain. In September, it signed a strategic partnership agreement with Carnegie Mellon University CMU in Kigali.

PACT is a US NGO that is the main implementing partner of iTSCi in the GLR that ensures the liaison between the ITRI Headquarters in London and the GMD and mine operators in Rwanda and contributes to the training of the Tag Managers hired and paid with the fee levies on cassiterite (200 US$/tonne) and wolframite (300 US$/tonne of coltan) exports by the GMD. It is deep rooted in the region where it oversees scheme implementation on more than 800 ASM sites via decentralised (regional) officers and coordination with government and other sector stakeholders. With support from DMFA, It is currently carrying out the Scaling Up Minerals Traceability Project, focused primarily on DRC, but with some activities in Rwanda, Burundi, and Uganda in collaboration with GRF with the support of the Dutch government.

PAC has changed its name to IMPACT in October 2017 to more accurately reflect its work on natural resource management in areas where security and human rights are at risk[37]. It is nevertheless still active at the regional level where it provides analysis of certification, traceability, and due diligence as it applies to conflict-prone minerals. In Rwanda, it has examined women's livelihoods and barriers to women's empowerment in the artisanal mining sector in the country—and the region. Its initiatives are mainly funded by the Canadian-government and include technical support, training, and guidance to the ICGLR Secretariat and Member States, civil society, as well as several related dialogues and forums.

To summarise, multiple stakeholders are involved in the mining sector that the frame is set and the private sector's operations monitored by the government with the support of regional and international players as illustrated by Figure 6.

[36] https://bettersourcing.io/about-us/

[37] https://impacttransform.org/en/partnership-africa-canada-pac-is-now-impact/

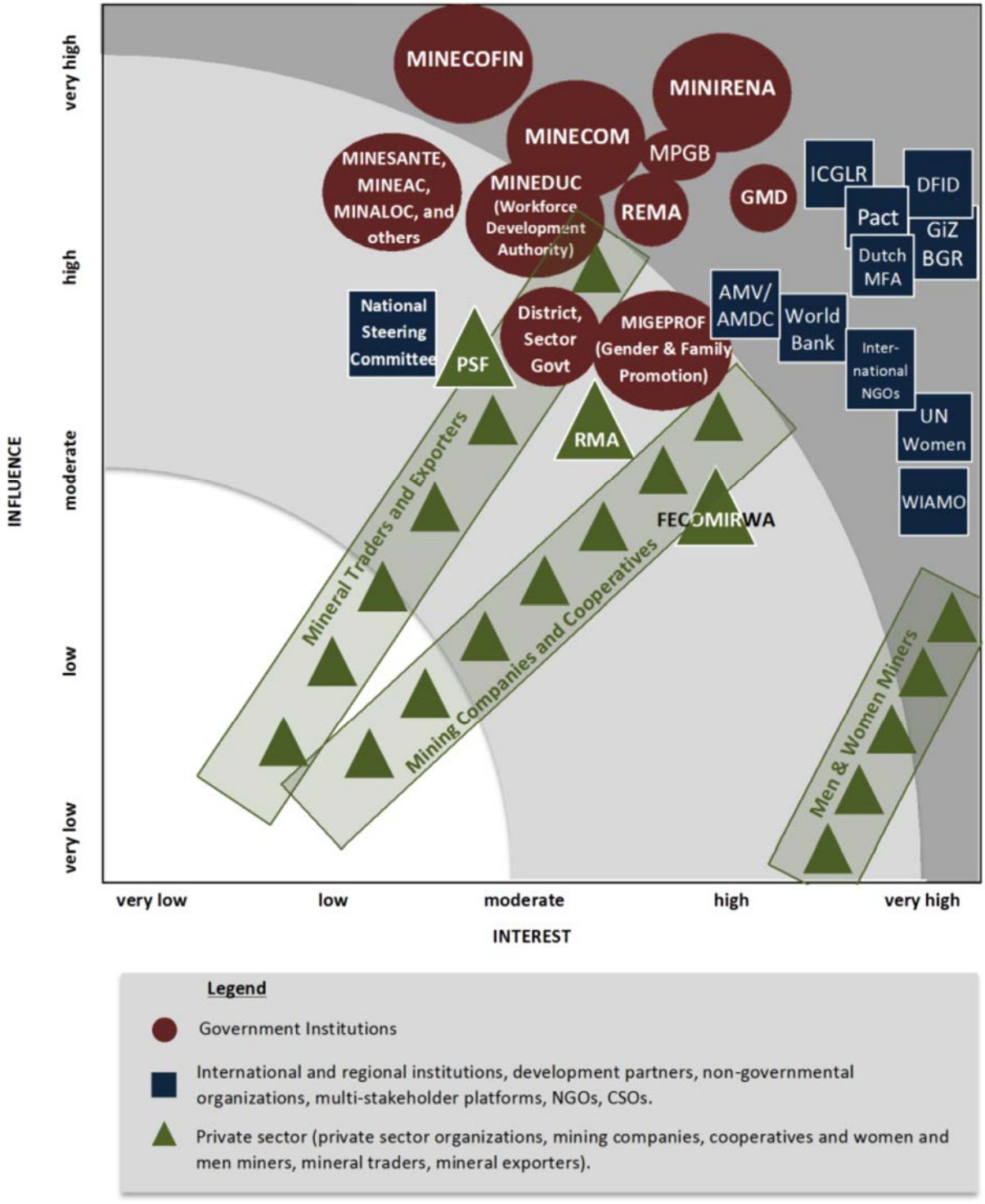

Figure 6: Overview of Rwandan stakeholders in the mining sector (Barreto et al. 2018)

Despite the number and variety of players involved in the Rwanda's mining sector, roles are rather well distributed among them. Jurisdictional conflicts and overlapping roles have been progressively addressed by the governing apparatus through frequent reforms. However, the consensual and harmonious nature of the interventions in the sector could reveal an authoritarian management of the country, where no place is left as in the neighbouring DRC to the expression of discordant sounds. For example, NGOs that are often particularly active on the issue of conflict minerals such as Amnesty

International, Global Witness and the others are voiceless and have not published any sulphurous reports on Rwanda

There is also an instance involved in the coordination called NSC: a multi-stakeholder committee involving representatives of government, police, military, civil society organisations, the RMA, and FECOMIRWA. Its mission consists of monitoring, overseeing, and reporting on compliance with DDG, RCM, and related security issues.

6 Experiences with existing Due Diligence, certification and other systems related to responsible mining in DRC

Rwanda is one of the most significant coltan suppliers accounting for almost a third of the primary tantalum supply in 2012. Combined with other countries falling under the Dodd-Frank Act due diligence reporting requirements (DRC and adjoining countries), the region contributes to more than half of the global primary tantalum supply. In contrast to those numbers, Rwanda's global contribution of global cassiterite and wolframite is negligible. Most of Rwanda's 3T mineral exports are processed by smelters and processors active in the RMAP that is supported by downstream industries in order to comply with due diligence principles for their products containing conflict minerals (3T's and gold). Since 2013, it became much more difficult for non-iTSCi minerals originating from the GLR to access the international market (Schütte et al. 2015). In terms of mineral volumes, cassiterite is the most significant export at national scale and has traditionally represented the highest value as well. However, since 2012 coltan has become the most valuable national mineral export and the most profitable mineral for mining operators on *a per unit* base as well.

Despite these resources, those of the DRC have always exerted a certain attraction on the Rwandan actors. Indeed, since the partial liberalization of artisanal mineral trading in both DRC and Rwanda in the late 1960s, the more or less legal exchanges, but of low amplitude were carried out from the DRC to Rwanda in particular. This deregulated phenomenon took on considerable importance during the Second Congo War (1998-2001), when Rwanda-controlled armed forces became involved, exerting a real influence on a portion of Congolese territory. This is where criminal networks linked to pro-Rwandan armed groups in the eastern DRC have often resorted to smuggling conflict-related 3T minerals from the DRC into Rwanda where these minerals were then officially exported. Certainly since 2011, this phenomenon is in decline due to, among other reasons, large-scale migration of Congolese artisanal miners from the 3T into the gold sector which had the effect of mechanically lowering the intensity of artisanal 3T mining in the eastern DRC (Barreto et al. 2018).

The Congo Wars showed the non-negligible role played by the mineral resources, especially in the funding of armed groups. Several UN reports investigated the issue and even identified critical players involved in this illegal trade. In 2005, for efficiently tackling the illegal mining and trade of minerals in the ICGLR, the traceability scheme for all relevant natural resources sourced from the DRC, including the 3T and gold, was one of the solutions envisaged in order to stop the mineral smuggling and related ethical concerns. The mineral certification in Rwanda dated back to 2010 when the Rwanda Natural Resources Authority, GMD and the German BGR agreed to undertake a technical cooperation program that was intended to lead to the adoption of mineral best practices and transparency improvement within the sector as well as supporting the competitiveness of the Rwandan mineral sector. The first step was a joint program called "Pilot Project for Building Best Practice in Rwandan Mineral Production" on certain mine sites with the objective of bringing them at the level of internationally accepted norms and standards through the instrument of CTC.

In eastern Congo, the majority of Congolese artisanal miners are now active in gold extraction. This makes it the new attraction for militias and DRC army groups, especially since gold is less targeted than the 3T in the framework of progressive institutionalization of supply chain due diligence measures to manage conflicts in the 3T sector[38].

[38] https://www.bgr.bund.de/EN/Themen/Min_rohstoffe/CTC/Mineral-Certification-Rwanda/CTC_Rwanda_node_en.html

Rwanda has always been involved in a number of initiatives to ensure that the ores produced in the country comply with, inter alia, the RINR under the umbrella of the ICGLR, iTSCi scheme and standards set by OECD with regards to the implementation of due diligence in mineral supply chains. In that context, many international partners are supporting it in its efforts to bring its mining sector into compliance (compare sections 5.2 and 5.3).

6.1 Certification

Certification of conflict minerals refers to a thorough review of compliance with standards for sustainable mining of 3T minerals that can be performed at mine sites, export points, and smelters. In Rwanda, the regional mechanism RCM is the main certification scheme that operates nowadays. However, the BGR had initiated similar projects with some governments in the sub-region, including Congo and Rwanda. The two BGR's initiatives aimed at transparency and responsibility in the trading chains of metal ores linked to financing conflicts: the development of a geochemical fingerprint for 3T ores and a concept for a chain of assurance system CTC (Franken et al. 2012). They are now integrated into the RCM regional mechanism.

6.1.1 CTC

Commissioned by the German Government, the *CTC in Mineral Production Pilot Project* was initiated concerning the feasibility of a certification system for selected raw materials (3T). The CTC concept was one of the first attempts to apply the mineral certification strategy in Central Africa. It was developed in 2009, prior to the DFA, In the context of the Great Lakes Region, certified production areas and certified trading chains would act as islands of good governance avoiding disorganisation, untraceable, and possibly illegal or conflict material.

The CTC project took place from 2008 to 2011 (Figure 7). During that period it developed a set of certification standards appropriate for ASM in the African context. Twenty standards based on OECD guidelines were grouped into five principle areas of concern: "origin and transparency of mineral flows and associated payments; working conditions; security and human rights; community consultation and gender relations; and the environment". The standards were applied by baseline audits to four volunteer mineral producers in Rwanda. The results of these audits were then used to refine both the standards and the auditing procedure, and to suggest areas where company performance should be improved. With its participation in the CTC pilot the *Rwandan Geology and Mines Authority* (former OGMR, nowadays RMPGH) and other Rwandan government authorities developed greater capacities for regulating Rwanda's mineral sector. Thus, the CTC standards and auditing procedures provide a template for certification schemes geared to ASM mineral production, as being part of the RINR.

The CTC concept was first tested in Rwanda between 2008 and 2011 with the participation on a voluntary base of upstream and downstream stakeholders, and contributed to refine and improve the CTC concept. It was perceived as an opportunity to achieve responsible mining, before other schemes came in. Involved mining companies were to purchase 3T minerals from local artisanal miners on the model described in the GTM case study (subcontractor working on company's concession). Five Rwandan mineral producers volunteered to participate in the project and underwent independent third-party baseline and compliance audits, of which three were found to comply with all 21 CTC standard criteria defined to receive CTC certificates of compliance, valid for a period of three years. Certificates were issued in Kigali in March 2011 by the RBS during an international conference on due diligence and mineral certification. After the CTC-Pilot Project has ended, no further CTC-related activities were developed, but the outcomes largely informed the Congolese experience. Rwanda's cooperation with

BGR still continues under the framework of a regional cooperation program of the ICGLR (RCM and ASM formalization).

6.1.2 AFP

The development of this method started since 2007 and aimed at constraining the origin of 3T mineral concentrates based on the statistical evaluation and comparison of geochemical and mineralogical concentrate samples. It was intended to compare some specimen taken along the supply chain with reference samples stored in a comprehensive database of mine site characteristics to verify their (stated) origin. Rwanda was associated from the beginning when it was still a stand-alone research project. Since 2011, the AFP method is now integrated into the regional German cooperation framework with the ICGLR. BGR is providing logistical and technical support in the implementation of a country-wide sampling program and establishing a rock petrographic laboratory at GMD. More than 500 reference samples from Rwandan mine sites have been collected and referenced by employees that RNRA/GMD individually accredited[39].

Although AFP is classified here as a certification scheme, it is not an initiative per se, but rather an optional tool to deter fraudsters. It could be therefore used by interested parties (e.g., companies or auditors) to substantiate 3T mineral risk assessments, as part of the implementation of the RCM. (Eslava 2018).

6.1.3 RCM

It is one of the six tools of the RINR endorsed in December 2010 by the ICGLR heads of state, and technically developed by international consultants in order to challenge predatory and illicit practices that ultimately financed rebel groups with mineral revenues. It belongs to a larger regional strategy to fight against the Illegal Exploitation of Natural Resources outlining actions to be taken by Member States and therefore translates the Protocol into concrete actions[40].

It aligned itself with the OECD DDG and provides a regional frame for implementing due diligence in the supply chains of conflict minerals. The ICGLR an inter-governmental organization of the countries in the African Great Lakes Region established a legally binding instrument the Pact on Security, Stability and Development for the Great Lakes Region, signed by the eleven Heads of States. The Pact was signed by the eleven Heads of States in Nairobi on December 15th 2006[41] and includes 10 Protocols and 4 programmes of action with 33 priority projects.. It entered into force in June 2008. It was amended in November 2012 to integrate the Republic of South Sudan as the twelve core Member States of the Conference[42].

[39] https://www.bgr.bund.de/EN/Themen/Min_rohstoffe/CTC/Mineral-Certification-Rwanda/AFP/AFP_node_en.html

[40] http://www.icglr.org/index.php/en/rinr

[41] Republic of Angola, Republic of Burundi, Central African Republic, Republic of the Congo, Democratic Republic of the Congo, Republic of Kenya, Republic of Rwanda, Republic of the Sudan, United Republic of Tanzania, Republic of Uganda, and the Republic of Zambia;

[42] http://www.icglr.org/images/Pact%20ICGLR%20Amended%2020122.pdf

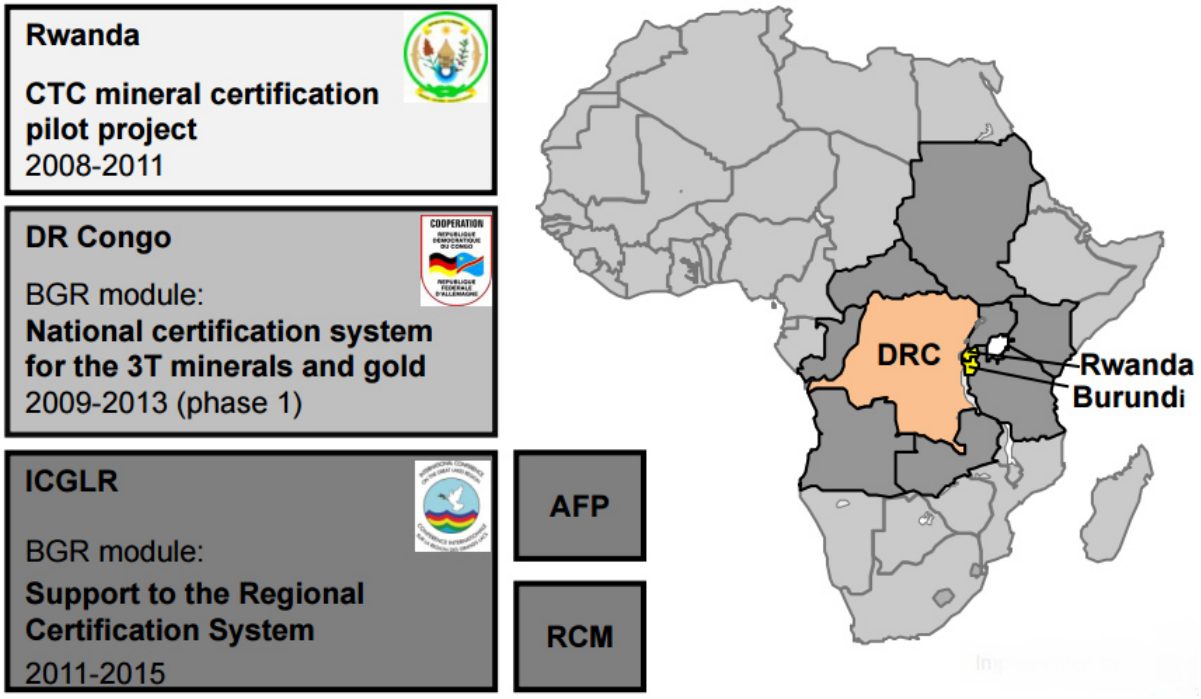

Figure 7: National and regional certification schemes implemented in Rwanda. (BGR 2015)

Within the RCM certification initiative, the exporters' application process is reviewed by the competent Rwandan authorities to check whether (a) the documentation provided by the exporter is complete, (b) the origin of the minerals is not from a red flag mine site, and (c) it is compliant with the ICGLR Chain of Custody standards that will serve tracking of every step of the mineral shipment. Established in 2013, an export certification unit issues ICGLR certificates, even though the tax authorities continue to issue a Certificate of Origin that is not related to the ICGLR certificate (Schütte et al. 2015). Already in 2013, three supply chains of minerals reached the status of "Green Flag" sites granted by the International Conference of the Great Lakes region (ICGLR) Regional Certification Mechanism (RCM). The Mine Site Status of "Green Flag" is "[…] one that is registered and described in a Member State's National Mine Site Database that has been inspected at least once within the preceding 12 month period, and has been found to be in compliance with all the requirements and conditions of Section 3 and this appendix" (ICGLR 2011). The supply chains including the Rutongo concession[43], the Nyakabingo wolframite mine[44], and the Gifurwe concession[45] were aligned with the OECD Due Diligence Guidelines on conflict minerals, and with a wider set of ICGLR requirements on environmental issues, working conditions and human rights. In the same way, they adopted the ITSCI mineral tracking system and the Rutongo Mines were even committed on parts of its concession in the Met Trak tracking system, as a pilot project.

In 2015, Rwanda had 246 validated artisanal mining sites, all classified as "green" having fulfilled the conditions such as the absence of armed or military groups, respect of human rights, absence of child labour, etc. (B&S Europe 2015). These government inspections are cross-referenced with independent third-party audits provided by an accredited ICGLR auditor.

Nevertheless, the RCM can be a more powerful tool if gaps such as the lack of regional synergy in the RCM implementation, the lack of management capacity and efficiency in national and regional

[43] It is mined by Rutongo Mines Ltd., the Rwanda's largest cassiterite producer that resulted from a joint-venture between the government of Rwanda and Tinco, a private British company.

[44] The concession is exploited by another Tinco subsidiary, Eurotrade S.a.r.l.

[45] The Gifurwe concession is mined by Wolfram Mining and Processing, a subsidiary of a Swiss company.

institutions, budget constraints, and some cases, ownership deficits are filled with more determination. The duplication of some steps of mineral sourcing schemes is another concern to address what can already contribute to reduce costs involved in a certification process. From the foregoing, it follows that the effectiveness of this tool is in question because the RINR has not so far been decoupling mining and violence in the region. The lack of convergence of actions undertaken by state and private actors is one of the main explanations.

6.1.4 RMAP/ CFSP[46]

It is an equivalent third-party audit program. The RMAP operates at the level of smelters, and not on mining sites. The process uses a reporting tool developed by the RMI/ CFSI[47] and data gathered through the RMAP, to achieve control and transparency over conflict minerals supply chain and identify the risk that products may contain conflict minerals directly or indirectly financing or benefiting armed groups in the DRC or any adjoining country[48]. The Phoenix Metal Ltd., formerly based in Kigali, was the only tin smelter in Rwanda with a capacity to process 15 tonnes of tin daily. It went through a first audit and the second and final audit scheduled in July 2017 that would have led to the award of a conflict-free smelter certification was postponed. Because it was still in process for securing the RMAP, the smelter only held a provisional certificate to trade in minerals, meaning that Rwanda continued selling raw ore and lost higher forex earnings that the country would have earned from exporting the mineral in value-added form. Despite orders to supply the ingots directly to aeroplane manufacturers and electronic device makers, they could not export the tin ingots without conflict-free smelter certification[49].

6.2 Traceability (iTSCi)

Rwanda government fully adopted the main traceability system iTSCi and became the first GLR country to undertake large-scale implementation, even before the CFSP/ RMAP came into force in April 2011 as well as the RCM in 2012. The Rwandan traceability chain implies that minerals are traced according to the iTSCi Scheme from mines to smelters. At the Rwandan level, traceability operations are mainly performed through the bag and tag system. In late 2010, the iTSCi Scheme was jointly managed by GoR and iTSCi/PACT, and the latter owning permanent offices in Rwanda, is undertaking operations on the ground so far.

Each partner plays a specific role. The government through the GMD tagging agents is in charge of tagging bags of minerals coming from around 500 tagging sites across the country. In 2013, 95 tagging agents were involved in the process. Any suspected anomalies in the supply chain are reported and jointly investigated by the RNRA/GMD and the iTSCi/PACT representatives in Kigali. The number of incidents was to be increased to 200 in the following years. Though the governmental management of its staff was quite successful in following up tagging operations with a hundred personnel, it was already becoming much more challenging when the number doubled (MINIRENA 2013). The government passed a regulation in 2011 so that the mineral traceability becomes mandatory, namely the iTSCi (Schütte et al. 2015). The iTSCi traceability scheme moved from its initial restricted focus on the internal mineral value chain including the ‘bag and tag’ system going in hand with the accompanying documentation, to a more comprehensive due diligence sourcing scheme adding to the former model,

[46] CFSP is the former name of the nowadays RMAP

[47] CFSI changed its name to RMI

[48] http://www.responsiblemineralsinitiative.org/media/Low%20Risk%20Program%20-%20Public%20Consultation.pdf

[49] http://www.theeastafrican.co.ke/business/Rwanda-tin-smelter-audit-postponed-Phoenix-Metals/2560-3351614-y570moz/index.html

an on-going risk management as well as third party audits (Schütte et al. 2015). In 2015, according to iTSCi-PACT, Rwanda had 815 mines that had implemented the iTSCi system, of which only 442 were in operation.

Nowadays, all existing legal mines and exporters are covered by RMAP implemented by PACT thanks to a joint implementation agreement between ITRI and the GoR. Several RMAP and iTSCi members control a substantial share of GLR's market offtake of 3T minerals. The main consequence is that operations taking place in the country have an unrestricted market access since the enactment of Dodd-Frank Act. In several countries increasing interest is being shown for this traceability scheme, especially because it helps in opening up international markets. As an illustration, traceable 3T exports from the DRC, Rwanda, and Burundi, for instance, increased from around 300 tonnes in 2010 to 19,500 tonnes in 2014 (OECD 2017).

The iTSCi role consists of supervising frequently the work undertaken by tagging agents. The traceability scheme also includes collecting reported incidents that arise in case of any suspected anomalies in the supply chain followed by a joint investigation team (RNRA/GMD and the iTSCi/PACT) based in Kigali. Incidents reported between 2011-March 2013 have been closed to a 65% rate. In addition, for managing reported high-level incidents, an independent tripartite committee composed by representatives from RNRA/GMD, industry and civil society and NGO was put in place in 2013. Independent auditors from the Channel Research evaluate the chain of custody/risk assessment twice a year as well as mining companies' compliance to the OECD due diligence guidance is audited.

ITRI does not apply the same mechanism in all the countries in the region involved in the traceability process. Thus, while the ITRI procedure requires the certification of mining sites in Congo, it does not make it an obligation in Rwanda where there is no armed conflict on its territory, and presumably, mining sites are meeting the environmental, social or human rights criteria. In this perspective, the origin and traceability of certain minerals is a fundamental requirement in the DRC, while in Rwanda it is not applied with the same rigor. What then appears to be a discriminatory application of its standards leads the FEC to charge ITRI of applying a double standard policy among countries within the Great Lakes Region.

6.3 Due Diligence

Mining in Central Africa has been associated with violent conflicts, mistreatment of artisanal miners, illegal trading and the diversion of state revenues. Rwanda also had concerns regarding market access. While the country was not afflicted with armed conflict within its own borders after the turn of the millennium events in the region still affected the country. UN expert reports considered the role played by Rwandan-based companies in the transportation, processing and export of minerals from dubious or conflict sources inside the DRC. Some of these minerals were simply being transported across Rwanda to ports in East Africa. Other shipments were being purchased, processed and re-exported by companies based in Rwanda. Further confusing is the issue of a substantial portion of mineral ores originating in the DRC and then upgraded in Rwanda is, upon export, declared by Rwandan officials to have been of Rwandan origin (see analysis made on smuggling in section 3.4).

6.3.1 Due Diligence in Rwandan mining sector

The due diligence is a decision process on the part of an international group of stakeholders which consists of making sure while acquiring mineral products that mineral supply chains originating from conflict-affected and high-risk areas are compliant with the reference guidance developed and coordinated by the OECD. As Rwanda belongs to the area that a special attention should be given to

when supplying in minerals in order to guarantee they are conflict-free, international buyers should be at least indirectly committed to human rights' promotion and fighting against mineral conflict.

Traceability and certification initiatives both contribute to the due diligence process by enabling buyers to ensure that these ores have neither been used to finance conflicts nor, more broadly, to violate human rights in the countries of production. With the objective to comply with due diligence conditions set by the 2010 Dodd-Frank Wall Street Reform and Consumer Protection Act, Section 1502 on conflict minerals, several measures are taken to enforce a sustainable development of the mining sector and undermine illegal exploitation and trade of its products. This includes a verification and description of all produced minerals. In December 2010 the iTSCi, a certification scheme for domestically produced 3T-minerals, was implemented by the Rwandan government and the ITRI screening the end-user requirements set by the Dodd-Frank Act (DFA) and the RMAP (e.g. indicating conflict minerals that could be misused for financing illegal or military purposes). The Rwandan Mining Association covers all existing legal mines and exporters by that scheme. As part of the RINR a regional certification mechanism implemented by the 12 participating countries of the 2010 ICGLR checks the compliance of Rwandan minerals with regional requirements for their supply chain and export. There is, however, a lack of harmonisation between the two certification schemes which makes them cost inefficient as both are sometimes applied for one and the same mining operator while their administration is expensive. Additionally, Rwanda finally intends to implement the EITI-Initiative in the years to come (IGF 2017). The resulting costs of taxes and due diligence management (e.g. mine inspections) arise at export level of the mineral supply chain. Exporters can pass those costs to mining companies by requiring a treatment charge, if there is a shift of the costs onto the mining workers, however, is generally not clear.

6.3.2 Critical reflection on DD in Rwanda

This section focuses on the main criticisms that can be made about DD as it is practiced in Rwanda. These include the lack of fairness in the sharing of costs among actors involved across the 3T supply chain, the unsuitable duplication of initiatives contributing to the expression of DD, and the variable geometry application of certain tools such as iTSCi in the GLR.

The costs associated with the traceability system are a major concern in Rwanda, especially since costs are beard by the local producers. The system is not ethically correct and therefore calls for specific efforts, especially in terms of the reduction of traceability costs, which are now entirely borne by producers.

The Rwandan elite share this concern. So while acknowledging the merits of the DFA that boosted the mineral sector and restored the credibility of the country by cancelling suspicions on the value chain of minerals in his country, the Minister for Natural Resources, Vincent Biruta, raises however the issue of costs deemed prohibitive. Due diligence costs are significantly high and represent 4% of the value of minerals produced in a statement made by the Minister, thus recording 1% increase if one refers to the 2013-2014 level (Cook & Mitchell 2014). In 2015, US$3.2 million was spent on due diligence and Rwanda tungsten miners paid US$12,000 for each container in due diligence costs. These costs are not justified in the case of Rwanda according to the minister. M. Biruta states that "*For us, knowing where minerals originate from or to ascertain whether they were smuggled is very important — and we always do it for ourselves as the government*"[50]. Those international mechanisms should take into account the individual situation of countries so as not to negatively impact the development of the mining sector.

[50] http://www.theeastafrican.co.ke/news/Trump-law-conflict-minerals-Rwanda-Congo/2558-3820102-822rajz/index.html

If the costs involved in the RCM processes that overlap with the iTSCi traceability scheme are joined because mine inspections, whistleblowing/incident reporting, governance and risk assessments, database management and third party audits are duplicated, these costs would be reduced, which would not solve the moral aspect involved in the question. The due diligence benefits producers, exporters and smelters alike. At all stages of the 3T value chain, due diligence compliance costs players should be more equitably distributed among the supply chain so that actors should contribute pro rata to the gross margins they make.

More broadly, since the certification and traceability systems provide elements for conducting an efficient due diligence policy, the weaknesses of these mechanisms should be tackled together both at national and regional levels. The major weaknesses of the ICGLR are the lack of harmonization of ITRI procedures in all member states; the tough economic competition between states to attract investors; cross-border smuggling of minerals, lack of enforcement power, etc. but of all, the most decisive is the lack of binding powers over the member states to impose a homogeneous functioning of the IRRN tools, nevertheless, it is subject to political influence. For example, the level of progress in the implementation of the six pillars of RINR in three producing countries (Burundi, DRC and Rwanda) and in three transit countries (Uganda, Kenya and Tanzania), all members of the ICGLR, reveals a significant imbalance among them. However, as far as Rwanda is concerned, the harmonization and alignment of mining legislation with the RINR is already effective, and it is not observed the interference of politicians and military leaders in the mining sector to draw the prebends of their position of authority as is the case in DRC (Schütte et al. 2015, Musila 2017, Barreto et al. 2018).

Despite all the benefits that due diligence measures guarantee to the government and local communities, the initiative to implement them is largely still driven by exogenous forces. The UN has been instrumental from the beginning in making it an international concern. Similarly, funding and various technical supports encouraged the countries of the GLR to take some steps in the action, especially in Rwanda with the pilot projects. The adoption and, above all, the entry into force of the DFA in the USA have accelerated the implementation of DD measures, including in Rwanda. Although Rwanda is best exemplified in the efforts to improve the implementation of those patterns, it remains that current discussions in the US on the relevance of the continuation of the DFA could still affect this particularly voluntarist African country.

7 Hurdles and risks for projects to foster responsible mining in Rwanda

7.1 The risk of repealing the DFA by the United States Government

The Dodd-Frank Act, passed in the US in 2010 with the aim of reducing revenue flows to militia groups requires, among other things, that companies disclose their use of conflict minerals (tantalum, tin, tungsten and gold) sourced from Congo and adjacent countries. At its launch, it led to the outright boycott of Congolese exports before a series of initiatives put in place for showing shipments are conflict-free. Since then, the benefits of implementing the DFA have been obvious, although efforts still need to be made to improve implementation in the ICGLR, particularly in Rwanda.

The international context is gradually moving towards adoption of similar requirements. It is the case of China that developed its Due Diligence Guidelines for Responsible[51] Mineral Supply Chains in December 2015. The EU as well adopted its conflict minerals regulation on January 24th, 2017. It is in this context that the President Trump's intention to repeal Section 1502 of the DFA, based on high administrative costs and negative impacts for communities in the DRC[52] was revealed on February 8th, 2017. In spite of the number of its ardent supports originating from academia, mainstream international NGOs, mining, technology, and industry sectors, the project continues its course in the American instances. It is obvious that withdrawing this law will have devastating consequences in the GLR, namely on human rights, peace and security, socio-economic benefits, etc.

7.2 Environmental Impacts

As mentioned earlier, the Rwandan mining sector is rapidly growing making important contributions to the government's revenue, luring foreign investors to Rwanda and creating jobs in rural areas. However, installation of new mines as well as closing and abandonment of old mines can have negative consequences. Bad mining practices originating from the 20th Century in combination with the further expansion of the mining industry cause major environmental and social impacts. Excavation, deforestation and the construction of access roads during the exploration of a new mine is followed by underground mining with pollution of groundwater. In the phase of closure air pollution may be caused by dust that is emitted when the waste is being disposed. Furthermore, pollution of gear oils that have been used in the mine is a common problem. Mining operations can influence the conditions of a country in many ways. The physical environment including soil quality (e.g. a change in soil profiles, erosion, sedimentation, generally degradation of ecosystems), air quality or the quality of surface and ground water can be negatively affected. How much of the environment in Rwanda has already been impacted by mining activities was investigated several times (Haidula et al. 2011, Lehmann et al. 2016, Gabinema 2016, IGF 2017). Examinations on samples of soil, air and water near different mines have been carried out (Office of the Auditor General of State Finances 2015).

Rwanda is characterised by a diverse ecosystem comprising numerous species of endemic mammals, birds, reptiles and amphibians. Forests, savannahs, a large network of water bodies as well as cropland and grazing areas are part of Rwanda's landscape. Nevertheless, the biggest share of land is used for agricultural purposes. The population of Rwanda is growing at about 2.4% per year, which, considering the already high population density will be challenging for nature in the future. 83% of the population lives in rural areas, but urbanisation is increasing at about 4.5% per year.

[51] http://mneguidelines.oecd.org/chinese-due-diligence-guidelines-for-responsible-mineral-supply-chains.htm

[52] https://www.theguardian.com/us-news/2017/feb/08/trump-administration-order-conflict-mineral-regulations

During exploitation during colonial times and also after independence from colonialism, the mining activities left waste dumps and degraded land behind. Problems occur especially in the agricultural sector since farms are mostly located in proximity to mining areas and their respective waste deposits. In most mining areas wastewater is being released into rivers and therefore into the agricultural system. In addition to that, studies examined the amount of impact of toxic wastewater affecting people's health. For that purpose a field study was carried out in 2011 in cooperation with the BGR and the OGMR for ASM in Rwanda's main mining areas. Especially dangerous for the release of toxic substances are dumps of mine tailings and the waste released from processing plants. A common toxic substance is arsenic, which may bio-accumulate and contaminate water used for drinking or irrigation. High concentrations of arsenic were found in soil and sediment samples of streams next to mines in Masoro/Rutongo (near Kigali), Rutsiro (Western Province), Gifurwe (Northern Province) and Rwinkwavu (Eastern Province). The highest concentration (533 mg/kg) was found in farm soils close to the Gifurwe mines. This value exceeds the East African Standards for Drinking Water. Except for the Rwinkwavu site, other mines showed no downstream impacts of high arsenic contents. A reason for that could be high rainfall diluting the contamination. Furthermore, the processing of ores requires a lot of water. The study of 2011 showed that effluent waters carry only small amounts of contaminants but large amounts of fine sediment material. As a result, rivers turn to a beige-brown colour and transport the fine material over long distances.

Figure 7 shows the most significant impacts Rwanda's mining activities have on the environment. Widespread excavations of a growing mining industry come at a price of transformations of the geomorphology, vegetation is removed and natural habitat for plant and animal species gets lost. New access roads result in a division of landsides reducing natural habitat for flora and fauna as well. Due to the use of hydraulic methods most of the loose sediment was transported into nearby valleys. Until 1985 18,000 t of cassiterite had been produced at the mining site of Gatumba while approximately 50 million t of rock had been moved which led to the backfill of several valleys and changed their stream gradients. Instability of slopes based on rapid relocation of excavated material can cause landslides and thus poses risks to residents of the affected regions.

Rwanda's mining sector is expected to triple by 2020 compared to its 2017's level according to the deputy director-general for Geology and Mining at the ministry interviewed by Xinhua[53]. Hence, it is all the more important to improve environmental policies keeping negative impacts as low as possible. So far, Rwanda has made significant strides concerning this matter. Stimulated by the privatisation of the mining sector national policies have been updated and the appointment of a Minister for Mines brought significant importance to a well overhauled mining industry. Nowadays, before new projects get authorised, environmental impacts need to be assessed by REMA. REMA is also responsible for the inspection of current projects and the rehabilitation of abandoned mines. EDPRSII is working on a way to implement "green mining" in Rwanda by means of more efficient mining technologies and a reduced waste production. The goal of the national environmental and social standards developed by Ministry of Natural Resources Rwanda (MINIRENA) was for all mines to have efficient water use und waste management by 2017.

7.3 Social Impacts

Social conflicts have been steadily linked to Rwanda's mining history. After the peak of mineral production in 1977 with 2,239 t of cassiterite and 836 t of wolframite, nationalisation of the sector resulted in mismanagement and declining production. The events of 1994 intensified the bad conditions. Insurrection and war in the DRC had an influence on the whole region of Central Africa and has been a

[53] http://www.xinhuanet.com/english/2017-01/21/c_136002631.htm

consequence of weak governance, lack of security and transparency in the mining sector, corruption and smuggling. The lack of security led to the shutdown of large-scale mines. The expansion of ASM producers made regulation and supervision difficult. In consequence of lower mining revenues the government was not able to pay officials, which promoted illegal payments to miners or traders as well as smuggling.

The already mentioned due diligence measures have proven to be useful instruments in order to avoid these illegal actions in the mining sector albeit not being widely-known among mine workers and usually only understood by the team leaders. To develop certification standards in Rwanda's mining sector the CTC project included improvements in working conditions, security and human rights, as well as in gender relations and environment. Yet, field investigations demonstrated several issues on ASM companies. Due to the rapid expansion of the mining industry, mining often competes with agricultural land use (Figure 7), especially due to the population growth and the high percentage of people living in rural areas.

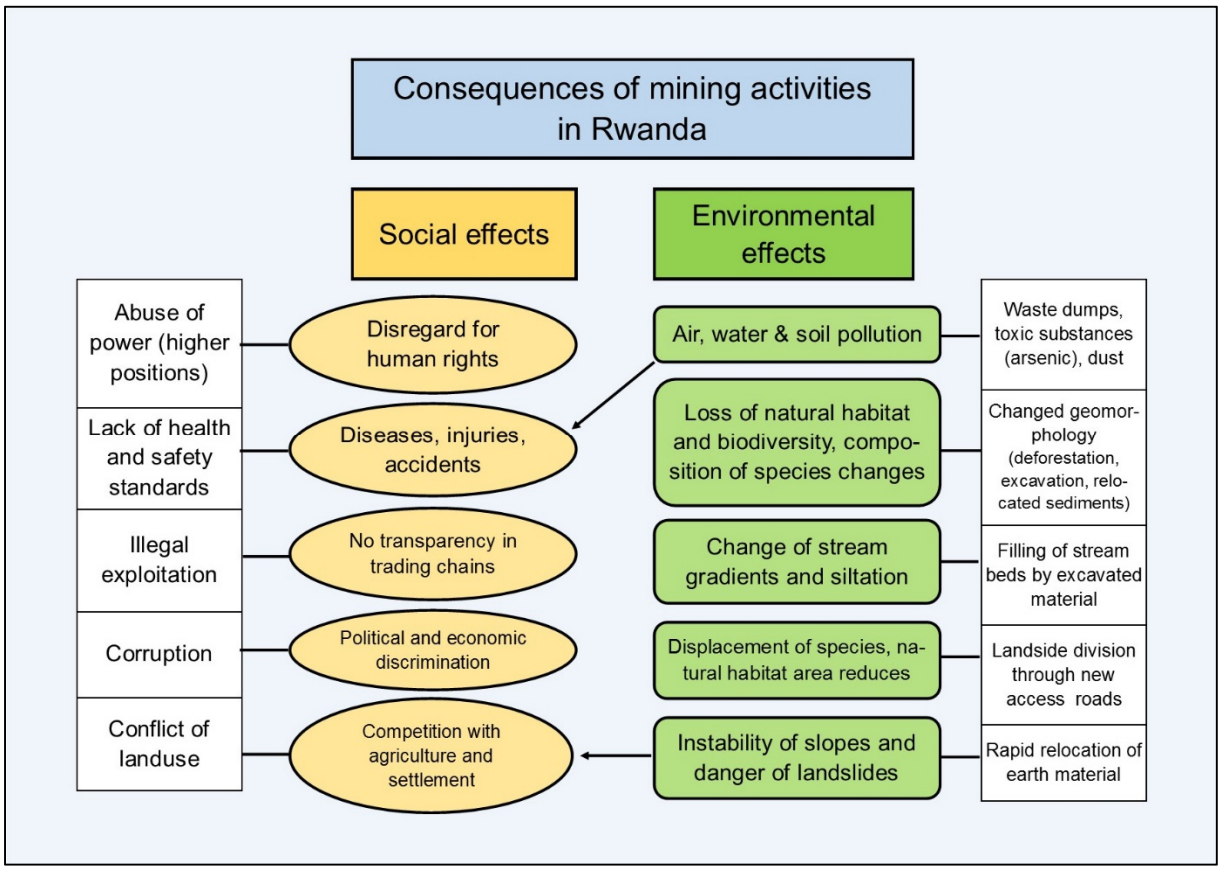

Figure 7: Major consequences of mining activities in Rwanda

Monthly production of pre-concentrates per mineworker varies between 0 and 117 kg. Among other factors, this quantity depends mostly on the degree of mechanisation being used for the resource extraction, like jackhammers for mining in hard rock and equipment for efficient mineral processing. Good equipment, however, is missing in several mines. A lack of health and safety standards for mining workers is therefore common. Insufficient wooden columns as a support for undercutted pit walls or missing respiratory protection against diseases caused by dust in the mine shafts are frequent examples for that. This issue is worsened by a rudimentary knowledge of safe mining practices among the miners themselves as a result of little safety information and training. There is also a lack of accident reporting

and health insurance for employees earning wages that don't qualify for the Pay-as-you-earn-Tax (PAYE).

Another issue is the abuse of power by subcontractors. Some keep a share of the worker's salary or demand sexual favours from women as a requirement for the right to work in the mine. In addition to that, some Rwandan mining companies may have tendencies to engage in bribery despite the government officially fighting corruption without tolerance. To achieve a better price for the extracted ore, subcontractors sometimes sell the ore directly to independent traders. By doing so, they are stealing the company's property and violate CTC rules, such as traceability of mineral flows. In particular illegal exploitation and trans-bordering trade of minerals originating from the DRC can trigger social conflicts. Investigations have shown that the majority of mining employees are male. The shortage of work place facilities for women and the general image of mining as a male domain keep females from applying for jobs in that field although female workers could be useful skilled personnel in accounting or mineral sorting.

8 Recommendations for the to enhance sustainability of mining in Rwanda

Although Rwanda has made many reforms in the mining sector, the development of the sector requires the application of these as well as the continuity of appropriate reforms with the support of it partners.

TO RWANDA'S GOVERNMENT

Improving the knowledge of geological and mineral resources is one of the major levers to likely attract foreign investors. Yes, the GoR provides a reasonable amount of data on the whole country through a free access to geological mapping to the 1:100,000 scale. However, in areas with high mineral potential, the current geological information is not enough and it is therefore required more detailed geological information, because investments in geological research are not of interest to mining companies, especially when the country has identified no world class deposits so far. As long as the proven reserves do not encourage entrepreneurs to take investment risks in the sector, this sector will continue to remain artisanal and will not capture the expected capital.

Professionalizing the mining sector and in particular the ASM, while pursuing the industrialization objective. The Rwandan government is fixing on the industrialization of its mining sector, which is moreover perfectly legitimate with regard to the expected benefits in terms of FDI, taxes and royalties. However, if this industrialization happened, it would reduce substantially the number of workforce engaged in the artisanal and semi-artisanal mines. This does not necessarily mean that these lost jobs will be offset by the benefits the government has spun off. On the contrary, it could lead to the socio-economic exclusion of old workers and multiply the adverse effects associated with industrial mining.

The government will have to recalibrate its ambition of mining industrialization by making it a component of a dual system developing concomitantly with the ASM. Only large deposits would potentially be devoted to industrial exploitation while the others would be protected and allocated to nationals or even local residents following discriminatory financial criteria. In this sense, the formalization of the ASM should be amplified, but above all, professionalization should become the rule in all mine sites. In doing so, this dual system will continue to generate profits for the country while reducing the risk of funds repatriation.

Ensuring the energy independence of the country is the guarantee of investment in the retention of mining value in Rwanda. The current situation causes loss of by-product tantalum in tin slags as well as employment and the development of specialist service providers to support a new smelting and refining sector. Past experiences led both by the governmental and private actors have shown areas of action where improvements are expected, namely regarding technical and management skills in the development of a smelting project. Those challenges were already addressed with the involvement of Phoenix Metal Ltd. Nevertheless, Phoenix's experience shows that the investor's interest in one segment of the 3T value chain is not enough on its own as long as other parts of the economy do not work together towards providing acceptable conditions for launching heavy, energy-intensive, industry. The Government continually develops liberal policies in order to transform Rwanda into a trade and services hub. However, the government's desire to make Rwanda a sub-regional hub in the processing and export of concentrates from other countries is highly dependent on a reliable power supply.

Decentralizing ore concentration through offering miners to perform the first transformation themselves will reduce the number of intermediaries in the supply chain, between the producer and the smelters.

Strengthening the environmental protection in Rwanda that requires sustainable measures against the action of certain harmful chemical agents. With the continued growth of mining titles issued by government authorities, more spaces will be gradually facing environmental damages and thus underground and superficial water resources will be impacted as well as the potential for available arable lands in an agricultural and densely populated country will be reduced. All this paves the way for social conflicts.

Formally seizing the promoters of the mechanisms which contribute to the application of the due diligence. The aim here is to reach certain fairness in the way financial burdens are equitably distributed among different stakeholders involved in the supply chain in order to avoid continuing to bear the costs alone. It could also seek support from its traditional partners, including the EU and its Member States, in this operation. One of Rwanda's main complaints about due diligence concerns the costs borne by Rwandan actors alone, and yet they are not the only beneficiaries.

To CSO

Raising public awareness on rights, corporate and social responsibility, accountability and conflict sensitivity in the mining sector. A more active involvement of the SC in the Rwandan mining sector should help strengthening the foundations of the development of the mining sector and strengthening the promotion of the country's image abroad. Civil society, including the international one, is almost voiceless in Rwanda. There are few reports and forums that it does on the mining value chain to show and understand who loses and who reaps huge benefits at different stages. This leaves the impression of insufficient freedom of expression on the part of the government, or of complacency on the part of civil society organizations. This situation is contrary to the prevailing trend in the GLR, including a proliferation of actors in the DRC mining sector.

To EU

Promoting and reinforcing the ban against conflict minerals in the GLR through a three-step involvement:

- The EU agenda should be followed with regard to due diligence, particularly with regard to the EU law that is to come into force in 2021. In addition, the EU should use different instances and fora to lobby for the maintenance of the DFA.
- The US administration's plans to repeal the DFA. Although it is not a perfect regulation, namely through negative impacts observed on the environment as well as on communities during the implementation, it has nevertheless allowed to record positive outcomes over its 6 years of implementation. There is a high potential for social conflicts to arise from the cancellation of the due diligence requirements in the GLR. EU should lobby for the continuity of the DFA.
- The EU should support Rwanda in maintaining the due diligence and traceability system because of its inherent value to the country. It is however difficult to predict the future of such a device in the mining supply chain in the absence of any legal constraint on the markets.

Supporting government efforts for making Rwanda a credible and regional mining services hub for ICGLR countries (mining Services of ore from other countries) in terms of mining refining, and especially for DRC currently affected by a political and social crisis compromising peace and security in the mining producing areas of the country.

Fighting against minerals smuggling by providing support to taxes harmonisation at the regional level. The difference in tax regimes in the GLR countries provides incentives for mineral smuggling.

Adopting a Community tax code would make some of these transactions redundant. However, to achieve this will require substantial technical and financial resources, without neglecting the political will of member states. The EU contribution could be decisive for this purpose.

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STRADE Country case studies:

Democratic Republic of the Congo (DRC)

Jürgen Runge & Diderot Nguepjouo
Zentrum für interdisziplinäre Afrikaforschung (ZIAF)
www.ziaf.de

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List of Abbreviations and Acronyms

3T:	Tin, Tungsten and Tantalum
3TG:	Tin, Tungsten, Tantalum and Gold
ADFL:	Alliance of Democratic Forces for the Liberation of Congo – Alliance of Democratic Forces for the Liberation of Congo
AFP:	Analytical Fingerprint
AMV:	Africa Mining Vision
ASADHO:	African Association for the Defense of Human Rights
ASM:	Artisanal and Small-scale Mining
BGR:	German Federal Institute for Geosciences and Natural Resources – Bundesanstalt für Geowissenschaften und Rohstoffe
BSP:	Better Sourcing Programme
CAD:	Comité d'Aide au Développement
CAMI:	Mining Cadastre
CBRMT:	Capacity Building for a Responsible Minerals Trade
CCCMC:	Chinese Chamber of Commerce for Metals, Minerals & Chemicals Importers &Exporters
CEEC:	Centre d'Evaluation, d'Expertise et de Certification – Centre for Evaluation, Appraisal and Certification of precious and semi-precious mineral substances
CFSI:	Conflict-Free Sourcing Initiative
CFSP:	Conflict-Free Smelter Program
CFTI:	Conflict-free Tin Initiative
CMR:	Conflict Minerals Regulation
CNL:	Conseil National de Libération – National Liberation Council
CSO:	Civil Society Organisation
CSR:	Corporate Social Responsibility
CTC:	Certified Trading Chains Initiative
CTCPM:	Cellule Technique de Coordination et de Planification des activités Minières – The Technical Unit for the Coordination and Planning of Mining Activities
DBSA:	Development Bank of Southern Africa
DD:	Due Diligence
DDG:	Due Diligence Guidance
DFA:	Dodd-Frank Wall Street Reform and Consumer Act Section 1502
DfID:	Department for International Development
DGDA:	Direction Générale des Douanes et Accises
DGI:	Direction Générale des Impôts
DGRAD:	Direction Générale des Recettes Administratives, participations, judiciaires et Domaniales
DOJ:	US Department of Justice
DRC:	Democratic Republic of the Congo
DRKAT:	Direction Provinciale des Recettes du Katanga
EICC:	Electronics Industry Citizenship
EITI:	Extractive Industry Transparency Initiative
ENRC:	Eurasian Natural Resources Corporation
EPRM:	European Partnership for Responsible Minerals
EU:	European Union
FARDC:	Forces Armées de la République Démocratique du Congo – Armed Forces of the Democratic Republic of the Congo
FCPA:	Foreign Corrupt Practices Act

FDC:	Forces de défense du Congo
GATT-RN:	Groupe d'Appui à la Traçabilité et à la Transparence dans la Gestion des Ressources Naturelles
GCP:	Groupe de Coordination des Partenaires – Donor Coordination Group
GEC:	Global Enterprises Corporate
GECAMINES:	La Générale des Carrières et des Mines – Congolese commodity trading and mining company
GESI:	Global e-Sustainability Initiative
GIZ:	Deutsche Gesellschaft für Internationale Zusammenarbeit – German Development Agency
ICGLR:	International Conference on the Great Lakes Region
ICIJ:	International Consortium of Investigative Journalists
IDI:	International Diamond Industries
IOM:	International Organisation for Migration
IPIS:	International Peace Information Service
ITOA:	Initiative de Traçabilité de l'Or d'Exploitation Artisanale – Traceability Initiative for Artisanal Gold
ITRI:	International Tin Research Institute
iTSCi:	ITRI Tin Supply Chain Initiative
JVA:	Joint Venture Agreement
KCC:	Kamoto Copper Company
KML:	Katanga Mining Limited
KPCS:	Kimberley Process Certification Scheme
MAM:	Maison d'Achat Modèle – Trading House Model
MFA:	Ministry of Foreign Affairs of the Netherlands
MIBA:	Société Minière de Bakwanga
MMR:	Mining Mineral Resources
MONUSCO:	United Nations Organization Stabilization Mission
MUMI:	Mutanda Mining SARL
OECD DDG:	OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-. Affected and High-Risk Areas
OECD:	Organisation for Economic Cooperation and Development
OGP:	Observatoire Gouvernance et Paix
OSC:	Ontario Securities Commission
PAC:	Partnership Africa-Canada
PPA:	Public-Private Alliance for Responsible Minerals Trade
PWYP:	Publish What You
RAGS:	Responsible Artisanal Gold Solutions Forum
RMAP:	Responsible Minerals Assurance Process
RMI:	Responsible Minerals Initiative
SAESSCAM:	Service d'Assistance et d'Encadrement du Small Scale Mining – Supervision and Assistance Service for Small Scale Mining
SAM:	Save Act Mine
SARW:	Southern African Resource Watch
SEAMIC:	Southern and Eastern African Mineral Centre
SEC:	US Securities and Exchange Commission
SfH:	Solutions for Hope
SICOMINES:	Sino-Congolaise des Mines
SMKK:	Société Minière de Kabolela et de Kipese
STRADE:	Strategic Dialogue on Sustainable Raw Materials for Europe
UMHK:	Union Minière du Haut-Katanga – Mining Union of Upper Katanga
UNDP:	United Nations Development Programme

UNEP:	United Nations Environment Programme
UNITA:	União Nacional para a Independência Total de Angola – The National Union for the Total Independence of Angola
USAID:	United States Agency for International Development
USGS:	United States Geological Survey
WBG:	The World Bank Group
ZEA:	Zones d'Exploitation Artisanale – Artisanal Mining Zones

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Executive Summary

The Belgian geologist Jules Cornet (1865-1926) conducted geological surveys in Congo and more particularly in Katanga where he discovered the immense wealth to the point of saying in 1892 that the region was a "geological scandal". The DRC is indeed endowed with vast natural resource wealth including cobalt, copper, niobium, tantalum, petroleum, industrial and gem diamonds, gold, silver, zinc, manganese, tin, uranium, coal, hydropower, timber, of which mineral resources are mainly concentrated in the eastern part of the country. The eastern Congo has been torn apart by armed conflict for several decades. Local and foreign militias are fighting for control of areas rich in natural resources. This country sends out the paradoxical image of a poor country because of its abundance in natural resources.

This report was prepared in the framework of the STRADE project implemented by a consortium of seven partners, funded by the Horizon 2020 Programme of the European Union, that brings together practical experience, legislation, best practice technologies and know-how. The current project addresses the long-term security and sustainability of the European raw-material supply from European and non-European countries. After having provided technical information on specific issues in policy briefs, country reports aim to deliver evidence and detailed information on selected countries (Rwanda and DRC).

The purpose of the DRC country report is to provide detailed information about the ongoing developments in the mining sector DRC, analyse them in order to make some recommendations. To do that, the report starts with an inventory of the sector integrating the reserves, the production, the actors, as well as the policies and legal framework for the mining sector and issues of particular importance for the development of the sector in DRC. The Glencore's case study, as a show case, delivers some evidence to understand strategies large scale companies use to defend and promote their own interests within the resource sector, in particular that of the international investors in the Congolese mining sector. The chain of stakeholders integrating the institutional and private actors is then graded before the presentation and the analysis of Due Diligence (DD) in operation in DRC. Finally, some recommendations aimed at improving sustainability in the Congolese mining sector are provided to the categories of major players.

This report starts with the presentation of the mining sector including the current state of reserves, production, leading stakeholders in the Congolese mining value chain, as well as the socio-economic impact it has so far on people and the economy of the country.

Subsequently it reviews the policy and legal framework for the mining sector which governs the extraction, processing, transport, marketing, export, and DD of minerals in the Congo. DRC adopted a liberal economic orientation with the 2002 mining code, inspired by the World Bank study and funded with IMF support, advocated the withdrawal of government from the productive sectors of the economy to confine themselves to the roles of regulator and promoter of the mining sector, and critically affects government intervention within the sector. After revision of contracts, which already represented a turning point in the positioning of local government in relation to the liberalisation, DRC launched in 2012 the mining code revision, though many provisions in the former law were never implemented. The new Mining Code, adopted at the end of January 2018 by the Parliament, was finally promulgated on 09.03.2018. It introduces an increase from 2 to 10% of the royalty on "strategic metals" which a decree of the Prime Minister is likely to make the list of which cobalt and copper will be part of, but also the removal of a clause which ensured the stability of the terms of the contracts over a period of ten years. Another novelty is the regular renegotiation of contracts and the participation of at least 10% of Congolese citizens in the share capital of mining companies.

As far as policy is concerned, the Ministry of Mines has adopted several planning documents including the roadmap for the period 2010 – 2015, the Priority Actions Program (PAP) and a Medium Term Expenditure Framework (MTEF) 2012 – 2016, as well as a roadmap 2012 – 2016 for the Ministry of Mines. Similarly in 2016, a process of consultation was initiated for the validation of the Strategic Plan for the Development of the Mining Sector for the period 2016 – 2021, which was supported by the World Bank through the PROMINES Project dedicated to support DRC's mining sector.

Some other issues of particular importance for the development of the sector in DRC are also discussed. Peace and political appeasement, security threat by armed groups, criminal networks, formalization of ASM, and the governance for supporting sourcing of minerals from conflicts.

The case study focuses on Glencore's activities in DRC's mining sector. Despite the importance (capital, investment) of the Swiss firm in the country, it nevertheless helps to understand that formalisation does not preclude any involvement in irregular practices, while further highlighting the necessity to implement a DD extended to governance for avoiding certain practices. It reveals that DD philosophy needs to be complemented with other initiatives in order to effectively guarantee a sustainable mining sector. The Glencore case study highlights the role played by some multinational mining companies and illustrates the importance of the DD measures.

The political regime instituted by the DR Congo constitution promulgated on February 18, 2006 has established a semi-presidential republic, with a separation of powers between the executive, legislative and judicial and a distribution of prerogatives between the central government and the provinces. The new constitution of 2011 has not affected that aspect. In reality, the presidency still interferes in the government activities. While the Ministry of Mines plays a vital role in the Congolese mining sector, other ministries are equally important. But beyond the activity of the government, it is that of the presidency of the republic that is the most influential in the sector.

Several state actors play an important role in the sector and, as such, are among the leading players in the Congolese mining sector. Non-state actors, especially the local communities and private sector, regional and international stakeholders carried out mining activities at various levels, while complying or not with the CMR.

The concept of 'due diligence' is reflected by the OECD DDG process through which any company involved in supply chains should ensure not to resort to minerals that have financed armed groups or supported abuses. This methodology is adopted by several DD initiatives, including conflict minerals regulations of which the Dodd-Frank Wall Street Reform and Consumer Act Section 1502 is currently the most significant. With very little exceptions (KCPS, CTC and RCM) that pre-existed to OECD, mapping, certification and traceability (iTSCi, BSP, Just Gold, ITOA) mechanisms are philosophically inspired by the OECD guidance.

Finally, a reflection is made on the need to extend such initiatives to make them more effective in the future economic and political sustainability of DRC. Yet the main problem in DRC is the lack of capacity in managing opposed forces both inside as outside the country to implement sustainability in the mining sector. In such a context, the supply of raw materials becomes more challenging. The contagion of mining products always is even indirectly affected by the crises and conflicts which are prolonged in the mining regions. Initiatives of separation or purification of mineral supplies from the DRC certainly have an undeniable moral value for buyers not wishing to meddle with the financing of guerrillas in the DRC, however, they do not attack root causes of the crisis which calls for a longer and dedicated involvement in developing suitable solutions (regionally on eastern borders, and strengthening resource governance).

Introduction

With a surface area covering over half of the EU and slightly less than one-fourth the size of the US, the DRC is the largest country in sub-Saharan Africa, and only owns 37 km of coastline (enclaved territory). The transport network is limited with 4,007 km of railways and 153,497 km of roads, of which less than 2% are paved. It shares a total of 10,481 km of land boundaries with 9 countries including Angola, Burundi, Central African Republic, Republic of the Congo, Rwanda, South Sudan, Tanzania, Uganda, Zambia[1], all members of the ICGLR, an inter-governmental organization promoting sustainable peace and development through a concerted and permanent search for suitable solutions.

The DRC is also endowed with vast natural resource wealth including cobalt, copper, niobium, tantalum, petroleum, industrial and gem diamonds, gold, silver, zinc, manganese, tin, uranium, coal, hydropower, timber, of which mineral resources are mainly concentrated in the eastern part of the country. East Congo has been torn apart by armed conflict for several decades. Local and foreign militias are fighting for control of areas rich in natural resources. In January 2018 for example, nearly 7,000 Congolese fled fighting between the army and rebels in the province of South Kivu, in eastern DRC, were received in Burundi in three days[2], whereas conflicts have more generally forced about 2.3 million people to become internally displaced or refugees in the DRC, and 323,000 Congolese living in refugee camps outside the country[3], including children among the victims, and occasioned physical, sexual and psychological abuse. These recurring conflicts, with their disastrous consequences, add to the country's poverty, with 77.1% of the population living below the international poverty line in purchasing power parity terms (UNDP 2016).

This country sends out the paradoxical image (resource curse) of a country being poor because of its abundance in natural resources. The efforts so far undertaken by its leaders to transform this potential into a source of growth and development are still insufficient. Yet these resources are at the centre of many issues including the supply of certain resources, of which it often holds a significant proportion of known reserves (cobalt, diamonds, etc.). They have often allowed the stakeholders of the Congolese crises to finance their war efforts on the one hand, and continue to remain the object of international greed on the other. Thus, in order to accompany the Congolese government in setting up an effective supply chain system, several initiatives aiming to break the link between minerals and the financing of conflicts and other human rights violations have been launched since the early 2000s. The Dodd-Frank Wall Street Reform and Consumer Act Section 1502 launched by the USA in 2012 is one of the most efficient schemes that significantly boosted the fight against conflict minerals in DRC and adjoining countries.

The purpose of this country report is to provide detailed information about the ongoing developments in the mining sector in DRC, to analyse them in order to make some recommendations to various actors. The report starts with an inventory of the sector integrating the reserves, the production, the stakeholders, as well as the policies and legal framework for the mining sector and issues of particular importance for the development of the sector in DRC. The Glencore case study delivers some evidence to understand the game of the players, in particular that of the international investors in the Congolese mining sector. The chain of stakeholders integrating the institutional and private actors is then graded before the presentation and the analysis of the Due Diligence in operation in DRC. Finally, some recommendations aimed at improving future sustainability in the Congolese mining sector are provided to the categories of major players.

[1] https://www.cia.gov/library/publications/the-world-factbook/geos/cg.html

[2] http://www.jeuneafrique.com/522692/politique/affrontements-en-rdc-7-000-congolais-fuient-au-burundi-en-trois-jours/

[3] http://www.banquemondiale.org/fr/country/drc/overview

1. Current Situation of Mining in DRC

DRC is the second largest African country with 2,344,858 km² after Algeria, and has the reputation of being a country with abundant natural resources, where mines occupy a prominent position. Objects of continuous research campaigns and extraction projects during the colonial period, these resources arouse the interest from various actors. Artisanal operations practiced by local people are part of the industrial mining activity in Congo dated back to more than one hundred years. The diversity of ores including some strategic and often among the rarest minerals, has often been cited as one of the reasons for the crises occurring in this country.

1.1. Brief historical background to mining in DRC

The Belgian geologist Jules Cornet (1865-1929) conducted geological surveys in Congo and more particularly in Katanga where he discovered the immense wealth to the point of saying in 1892 that the region was a "geological scandal" (Drohan 2010, Courade 2017). Among other mineral resources discovered, copper and uranium were the most important in volumes. A Belgian colonial company, the "Union Minière du Haut-Katanga" (The Mining Union of Upper Katanga – UMHK), was created in 1906 to extract copper until it was nationalized in 1967. As from 1921, the uranium discovered at Shinkolobwe in 1915 entered into its regular exploitation and the UMHK even built up one year later its first refinery for uranium ore. It started selling uranium oxide to research institutes including the US army Manhattan project, where a consignment of 1500 tons was sold, and later served for the atomic bomb used in Nagasaki and Hiroshima during the World War II.

After the independence, the country went through multiple social and political instabilities, bloody wars that still continue today. Of importance is the episode where Mobutu ceased the power in 1966 and exerted his control until 1996. Several armed groups tried several times to overthrow the president, or tried to take control over a relatively small area of the country's territory. The episode of the political crises in a longstanding governing system ended up with the First Congo War (1996-1997) that overthrew the former president Mobutu Sese Seko (1965-1997). Laurent Désirée Kabila, leader of a rebellion movement known as the AFDL, proclaimed himself as the president of the republic (1997-2001), but immediately faced another wave of rebellion that led to the Congo War II (The Great African War). Assassinated in 2001, his son Joseph Kabila took over power since then, and still leads the DRC today. Despite these repeated political instabilities, the mining potential has been continuously explored and exploited. Part of the workforce in the mining sector is engaged by mining companies.

1.2. Commodities and reserves

The abovementioned vicissitudes can be partly attributed to the abundance of raw materials, and especially its mineral endowments. According to Mupepele Monti, the geology of the DRC is rich with more than 1,100 mineral substances, 22 of which are economically mineable, of which the most important feed the main mining sectors of the country namely the copper sector, precious and semi-precious substances, tin, rare metals, ferrous metals, nickel-chromium and non-metallic minerals (2012). Indeed, the country abides some of world-class mineral resources such as cobalt, copper and uranium in the former Katanga province (1971-1997 in Shaba), substantial diamonds reserves in former Orientale province, Kasai Occidental and Kasai Oriental, most being alluvial and kimberlitic deposit types, tantalum in the Kasai Occidental and Kasai Oriental, tin spread across the former Orientale and Katanga provinces, Maniema and the two Kivu provinces; and gold in the Maniema and the two Kivu provinces, and the former Orientale province.

The 2017's Mineral Commodity Summaries provide some interesting figures on mineral reserves. Cobalt reserves are estimated at 3,400,000 metric tons, and represent 49% of world known reserves in 2016, while with 150 million carats of diamonds, it accounts for 20% of world reserves. DRC holds other significant reserves such as 20,000 metric tons of copper with 3% of the world share and 110,000 metric tons of tin (2% of world reserves). The other mineral reserves reputed significant as well as tantalum and gold are nevertheless unknown according to this source (USGS 2017). Those reserves are largely located along the eastern parts of the country as illustrated on the Fig.1.

Figure 1: Mineral resources in DRC (Sterbik 2015)

Large-scale industrial production is well developed and is concentrated mainly in Katanga, South Kivu, Maniema and Orientale Province (Figure 1 and Table 1).

Table 1: Reserves and production of main minerals in DRC

Minerals	Shares in the world mineral reserves (%)	Reserves	Mining production
Cobalt	49	3,400,000	90,319.41 tons***
Copper	3	20,000 million m tons	1.14 million tons***
Diamonds	20	150 million carats	18.9 million carats***

Gold	xx	nd	30,663.84 kg**
Tantalum	xx	nd	2,102 tons*
Tin	2	110,000 metric tons	11,824.34 tons*
Wolframite	xx	nd	251.69 tons***

Source: ITIE 2017, PROMINES 2017, USGS 2017 & CTCPM 2018
*2014, **2016, ***2017

In addition to the estimation of assessed reserves, the country's mining production is also worth of interest: DRC produce more than 90,000 metric tons of cobalt, 1.14 million metric tons of copper, almost 19 million carats of industrial diamonds, 2,102 metric tons of tantalum, and 11,824.34 metric tons of tin. Estimates of gold are comprised between 20,000 and 30,000 kilograms per year. More than 98% of gold exports from artisanal production were undeclared, which represents between US$ 383 million and US$ 409 million of illegally exported gold (ITIE 2015, USGS 2017). Without providing any precise proportion, other mineral resources also revoke national calculations, often transiting illegally via neighbouring countries to access the global commodities market and therefore are partly beyond the control of the State and tax revenues do not contribute significantly to public finances.

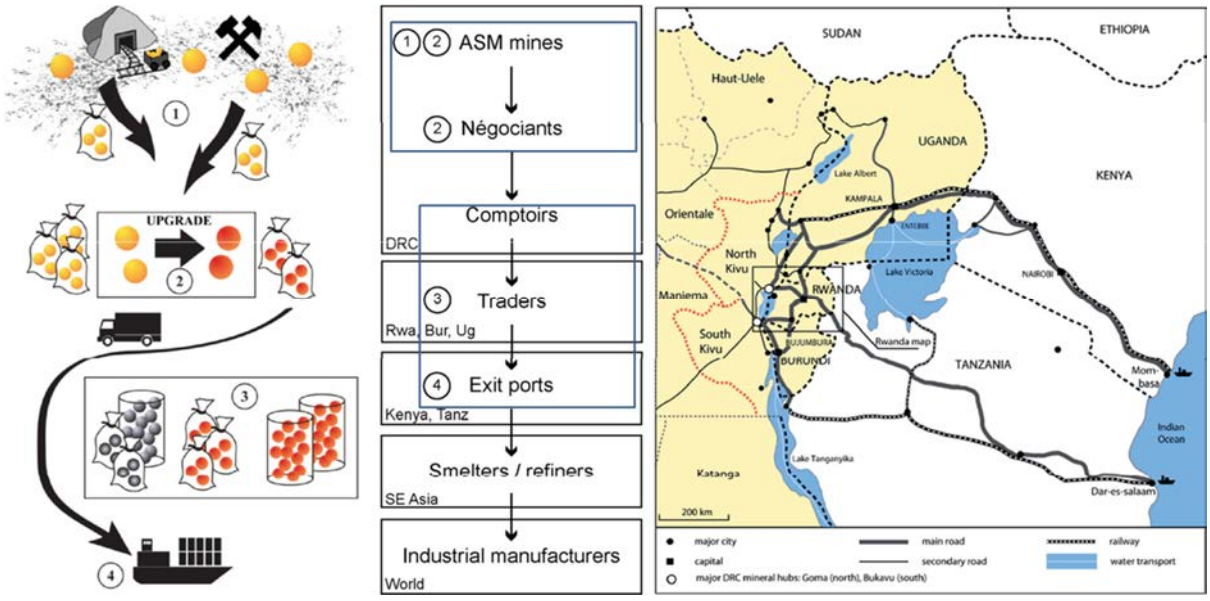

Figure 2: The conflict minerals issue: 3T and Gold (Sterbik 2015)

The mining production is led by artisanal miners as well as some mining companies. Artisanal mining concerns the provinces of Kasaï Oriental, Kasai Occidental, Katanga, Maniema, North Kivu, South Kivu, and Province Orientale. Thus diamond, niobium, tantalum, tin, and tungsten are mostly mined by artisanal miners, as are other resources such as cobalt and gold, where they continue to play a significant role. Some companies even sourced concentrate from artisanal miners. It is namely the case of MMR that purchased cassiterite, columbite-tantalite, and wolframite from artisanal miners (USGS 2017).

The resulting product is "mostly" smuggled through countries bordering the DRC, and thus beyond the control of the state (ITIE 2017). The cartographic representation of mineral occurrences in DRC provides more details on resources location as shown in the Figure 1. It is difficult to find credible figures on the

Congolese mining sector, and specifically on the number of artisanal miners, available figures are estimates with considerable disparities from one source to another. The BGR estimates were up to 2 million persons directly involved in ASM, and approximately 18% of the Congolese population depends directly or indirectly on it (BGR 2017) while the USGS estimated that more than 800,000 artisanal miners were employed specifically in diamond mining in Congo in 2014 (USGS 2017). According to World Bank estimates, the number of diggers varied between 500,000 and 2 million. 450,000 artisanal miners are involved in the diamond production, while 400,000 people produce respectively copper and gold (World Bank 2014). In addition, according to the 2014 CTCPM report, the country counted 715,643 artisanal mining operators in 2014. What these figures reveal is at least the importance of the segment of the population engaged in this activity. In 2005 it was estimated that over 80% of the Congolese mining production derived from ASM.

Even though the industrial mining has nowadays a bigger share of the country's mining production, ASM still constitutes an important source of income for the local population, to the point that 18% of the Congolese population likely depend on ASM of diamonds, 3TG and other minerals. The DRC Chamber of Commerce estimates that the formal mining sector provides about 350,000 jobs with a total of about 1,875-million Congolese dependants on the industrial mining sector (US Export 2017).

As shown in the Figure 2, from the artisan miners to smelters, there are a number of intermediaries that collect, buy, concentrate and resell the minerals until they reach seaports exit in Dar es Salaam (Tanzania) or Mombasa (Kenya) on their journey to south-east Asian smelters and refiners (China, India, Malaysia). After further processing, the product is sold to global industrial manufacturers.

1.3. Congolese mining titles in 2015

The mining code of 2002 distinguishes 7 types of mining rights giving access to the Congolese mining sector. In December 2015, the status of the register of holders of mining and quarry rights included 2519 mining titles distributed as follows:

Table 2: Mining rights in DRC

Type of right	Quantity in 2015
Research Permit	1,487
Mining License	476
Discharge Exploitation License	13
Small-scale Mining License	131
Quarry Products Research Authorization	158
Permanent Quarrying Authorization	244
Temporary Quarrying Authorization	10
Total	**2,519**

ITIE 2017:45

Mining rights should not be confused with companies as a single mining company can hold more than one mining license and even different types of rights in its port-folio depending on how it positions itself across the mineral value chain. Nearly 500 mining licenses have been awarded to mining operators,

plus just over one hundred and thirty others valid on the Small-scale Mining. Moreover, nearly three times these permits (1,500) are under geological surveys and may soon be turned into exploitation permits. The sector is buzzing with the participation of world-class mining companies.

1.4. Selected mining companies

The mining sector has often migrated from the hands of private actors to those of government actors and vice-versa. Nowadays, the Congolese government has extensively privatized its assets, but still holds significant shares in several mining projects. That is to say mining companies operating in DRC are of hybrid nature, with some exception of 100% state-owned and private enterprises.

1.4.1. State-owned companies

Need clarification: A state enterprise is understood according to the law setting the rules for the organization and management of the State Portfolio[4] as *"any enterprise […] in which the State or any other legal person governed by public law holds the absolute majority or totality of the share capital"*. In addition, the law also acknowledges any company in which the State or any other legal entity of public law owns the entire share capital or a shareholding as incorporated in the State Portfolio Company. Accordingly, the Congolese state-owned enterprises are presented (Table 3):

[4] Law No. 08/010 of July 07, 2008 laying down the rules for the organization and management of the State Portfolio (Article 2)

Table 3: State-owned Enterprises (State Portfolio Companies) in the Mining Sector

Company	% of State shares	Other shareholders	Minerals	Location
FRONTIER SPRL	5	95 (ENRC CONGO BV)	Copper	Lubumbashi
KAMOA Copper SA (AFRICAN MINERALS BARBADOS) – AMBL	5	94 (KAMOA Holding SA) 1 (IVANHOE Mines Barbabos Ltd)	Copper	Katanga
KGL SOMITURI	5	71,25 (La Société Kilo Goldmines Inc.) 14,14 (La Société Deltago International Ltd.) 5,04 (La Société Suez Holding Ltd) Investors of Congolese nationality	Gold	North-Kivu
METALKOL	5	20 (GECAMINES) 5 (SIMCO) 55 (High Wind Properties LTD) 5 (Pareas Limited 5 (Interim Holding Limited) 5 (Blue Narcissus Limited)		Lubumbashi
SEK	5	60 (Congo Mnerals Sarl) 35 (Balcon Investments)	Copper	Katanga

*SACIM[5]	50	50 (AFECC)	Diamonds	Kasai-Oriental
***MIBA**	80	20 (SIBEKA)	Diamonds	Kasai
***COMINIERE[6],[7]**	90	10 (INSS)	Tin, Tantalum, Niobium, Wolfram, Lithium	North Katanga
SAKIMA, ex-SOMONKI[8]	99,94	0.06 (GECAMINES)	Tin, lithium	Bisie
***GECAMINES**	100	-	Copper, Cobalt and Zinc	Katanga
***SCMK/Mn[9]**	100	-	Manganese	Lubumbashi
***SODIMICO[10]**	100	-	Copper	Haut-Katanga
***SOKIMO[11]**	100	-	Gold	Orientale, Maniema, Katanga, Bas-Congo, Equateur, Kivu

Source: ITIE 2017
*State enterprises

[5] Today, the diamonds have come from Société Anhui Congo d'Investissement Minier (SACIM), a joint venture between China's Anhui Foreign Economic Construction Group and the Congolese state, which last year was responsible for about 85 percent of the industrial diamond output in the country.(http://www.slate.com/articles/news_and_politics/roads/2017/04/in_the_democratic_republic_of_congo_artisanal_mining_is_a_remnant_of_the.html)

[6] La congolaise de l'exploitation minière, COMINIÈRE SA, is a private company in which 90% of the share capital is state-owned by the Democratic Republic of Congo ("DRC"), and 10% is owned by L'Institut National de Sécurité Sociale du Congo, DRC's largest Social Security and Pension fundhttp://cominiere.cd/

[7] http://www.marketwired.com/press-release/tantalex-cominiere-sa-signs-mou-development-world-class-manono-kitotolo-lithium-project-cse-ttx-2233721.htm

[8] La Société Aurifère du Kivu et du Maniema "SAKIMA" en sigle, est créée en 1997 par le Décret N° 0035 du 6 mai 1997 (http://www.sakima.cd/index.php?option=com_content&view=article&id=1&Itemid=12).

[9] Société Commerciale la Minière de Kisenge Manganèse «SCMKMn» (http://congomines.org/system/attachments/assets/000/000/396/original/JO-2010-StatutsEntrepriseKisengeManganese.pdf?1430928678)

[10] Sodimico (Société de développement industriel et minier du Congo) is a state-owned mining company in the Democratic Republic of the Congo (DRC), a smaller parastatal called Sodimico took over several mining properties from the Union Miniere du Katanga in 1967, was a subsidiary of the giant state-owned Gécamine Europa Publications Limited (2002)

[11] Société des Mines d'Or de Kilo-Moto (SOKIMO) began mining in 1966, a state-owned gold company http://www.aga-reports.com/11/pdf/drc.pdf

DRC holds 08 mining companies, where it owns the majority of the direct shareholdings. These state-owned enterprises include GECAMINES, SODIMICO, SOKIMO, SCMK/Mn wholly-owned by DRC, while it owns the majority of shares in SAKIMA (99%), COMINIERE (90%), MIBA (80%) and SACIM (50%). Most of these companies possess various forms of licenses that they cannot exploit because of their lack of capacity. Some of these exploitation permits are "invaded" by artisanal miners. In order to reverse this trend, some of those state-owned companies have recourse to joint-venture agreements to enable the development and exploitation of these mineral resources.

Besides these companies, DRC also holds minority shares in 44 mining companies, of which 39 are joint ventures. Joint ventures are companies created between private companies and in partnership with a state enterprise. The most famous case is GECAMINES. With the nationalization conducted by the Mobutu regime in 1967, UMHK became GECAMINES and continued the exploration, research, mining and processing of mineral deposits including copper, cobalt, tin, gold, uranium, zinc, etc. Historically, GECAMINES is the biggest state-controlled enterprise in DRC, which fully operated industrial mining until 1997 when privatization started. The company has remained crucial to Congolese finance. At its peak in the 1980s, it contributed 43 per cent of the country's budget revenues, and it still produced almost 500,000 tonnes of copper a year (EurAc 2017). In 1989, GECAMINES provided 85% of DR Congo's export earnings (against 60% provided by the UMHK in 1960), and 42% of public revenues, making it by far the most important company in the country. In the 1990s, GECAMINES financial situation took a blow, adversely affected by several issues, including the ageing of infrastructure and equipment, closure of Kamoto Mine in 1990, and ethnic riots in Shaba. On advice from the World Bank in 2010, the Congolese government transformed GECAMINES into a commercial operation, in which the state owns 100% of shares (Global Witness 2017). GECAMINES contributed around US$ 15 million in taxes to the government out of a reported income from mining of US$ 265 million in 2014 (ITIE 2015). In 2015, it paid just US$ 21.8 million out of reported revenues of US$ 249.5 million. In 2015, 23 contracts of joint-venture enterprises were concluded between GECAMINES and private companies through assigning them part or all of rights owned in old mining projects and mineral processing units. Over the past ten years, one of the most significant agreement GECAMINES signed is the one with a consortium of Chinese companies to create a commercial partnership called SICOMINES. It is a cooperation project linking the Government of the DRC represented by GECAMINES with a share capital of 32% on the one hand, and China represented by the Group of Chinese companies (68%), financed by EXIM BANK, through the CREC and SINHOHYDRO companies, on the other hand for a period of 25 years. This cooperation project has 02 components, namely the realization of infrastructure in the DRC (max. US$ 3 billion) and the development of a mining project (about US$ 3.2 billion), which were intended to be reimbursed on the future profits of SICOMINES. Until the end of the repayments, the SICOMINES benefits from complete tax exemptions (ITIE 2017). SICOMINES was expected to start producing from July 2016 with a capacity of 250,000 tonnes of copper per year; however, it had to reduce to 105,000 that year due to energy problems. The number of jobs was 475 including 319 Congolese and 156 expatriates.

Aside of GECAMINES, the mining company of Kilo-Moto, SOKIMO, has done the same for its concessions Mongwalu, D7 Kanga and surrounding companies with partner companies such as Randgold Resources, AngloGold Ashanti, as well as many others who are still in full execution (OMC 2017). SOKIMO holds 06 joint venture agreements with private companies, such as Giro Goldfields Sarl (35%), MGM/AGK[12]: (13.78%), SMB[13] (35%), Mineral Invest International Congo (35%), MIZAKO[14] (20%) and Kibali Goldmines SA (10%). The latter for example partnered with RANDGOLD and

[12] Mongbwalu Gold Mines SA/Ashanti Goldfields Kilo

[13] Société Minière de Moku-Beverendi

[14] Mwana Africa Congo Gold, MACG SARL

ANGLOGOLD. Other partly state-owned companies are much more modest with only one contract. It is the case of MIBA, incorporated in 1961 under the ashes of La Société Minière du Beceka, far less important than the formers. The share capital of the company dedicated specifically to diamond mining is 80% owned by the Congolese State and 20% owned by SIBEKA, anonymous company under Belgian law. It also has exclusive rights of research in the two provinces of Kasai Oriental and Occidental[15].

1.4.2. Private mining investors

A more hybrid list of mining companies operating in the Congo was set up by the EITI in its latest DRC Report identifying 117 mining companies in the Congo whose total payment reported by the financial authorities is over US$ 200,000, but also all State Portfolio companies, all JV companies with these public enterprises as well as that all the companies included in the scope of conciliation 2014 even if their declarations would be below the threshold of materiality. In addition, 340 other mining companies whose total payment is below the materiality threshold of US$ 200,000 were also reported in the report (ITIE 2017). As state-owned companies have been discussed in table 4 excludes them and ranks the top 10 private companies according to the amount of their capital. Those mining companies are involved in prospecting and operational mining activities in DRC (Table 4).

[15] http://www.mibardc.net/miba/historique.html

Table 4: Main mining companies in DRC according to their capital

Company	Amount of capital (US$ million)	Minerals	Country of origin	Location in DRC
CNMC Huachin Mabende Mining SA	10	Copper	China	Lubumbashi
Compagnie minière de Kambove (COMIKA)	10	Copper	China	Kambove
KIBALI Goldmines SA	10	Gold	South-Africa/USA	Kinshasa-Gombe
Kipushi Corporation SA (KICO)	10	Copper	Canada	Katanga
Mutanda Mining SARL (MUMI)	10	Copper & cobalt	Switzerland	Lubumbashi
RUBAMIN SARL	10	Copper	India	Katanga
SODIFOR SARL	10	Copper	DRC	Lubumbashi
Ruashi Mining SAS (RUMI)	12	Copper & cobalt	China	Rwashi
Mongbwalu Gold Mines SA / Ashanti Goldfields Kilo (MGM/AGK)	18	Gold	United Kingdom	Kinshasa-Gombe
Mining and Processing Congo (ALPHAMINBISIE)	20.7		Canada	Goma
Congo Jin Ju Cheng Company Sarl (CJCMC)	30	Copper	China	Likasi
Tenke Fungurume Mining SA (TFM)	65.1	Copper & cobalt	Canada/USA	Lubumbashi
Phelps Dodge Congo Sarl (PDC)	70.5	Copper & cobalt	USA	Lubumbashi
Kamoto Copper Company SA (KCC)	100	Copper & cobalt	Switzerland	Kolwezi
La Sino-Congolaise des Mines SA (SICOMINES)	100	Copper	China	Lubumbashi
Congo International Mining Corporation (CIMCO)	2,790	Copper	China	Kambove

Source: ITIE 2017

These 16 companies own the highest capital – equal to or higher than US$ 10 million – in the Congolese mining sector. The richest originates from China (CIMCO) followed by the Chinese SICOMINES and the Swiss KCC. The “poorest” in table 4 also came from China (COMIKA and CNMC). But in general, private operators are African, Western and Asian that operate within the Congolese mining sector. Among the most important Western home countries of active companies, Canada, Australia, USA, United Kingdom

and Switzerland can be mentioned. Asian companies come from China in partnership with Japan. African companies originated from Morocco and South Africa.

1.4.3. Privatisation

The private companies currently operating in DRC made their entry into the country – including the minerals sector plagued by a culture of secrecy, informal deals and allegations of corruption – following privatizations promoted by the World Bank and the other Bretton Woods institutions. The terms of these transactions appeared to be particularly unfavourable to the Congolese government as state companies were systematically undervaluing their assets. It lost a lot of money whilst foreign investors, most of them registered in offshore centres, were making commensurate profits.

In a sample of 5 major projects privatized between 2010 and 2012, the DRC lost at least US$ 1.36 billion in revenues from the under-pricing of mining assets that were sold to offshore companies, according to the distribution summarized in table 5:

Table 5: Five concession deals and assets traded in DRC (2010-2012)

The concession deals and assets traded	Buyers	Price paid to the DRC (US$ million)	Onward sale	Estimated commercial value, or paid by final buyer (US$ million)	Estimated loss (US$ million)
Kolwezi ***Gécamines' 70% share*** **(2010)**	Highwind Group/British Virgin Islands	63.5	From Highwind and Straker to ENRC (2012)	685.75	622.25
SMKK ***Gécamines' 50% share*** **(2010)**	Emerald Star/British Virgin Islands	15	From Emerald Star to ENRC (2010)	75	60
Sodifor ***Sodimico's 100%*** **(2010-2011)**	Fortune Ahead Ltd/Hong Kong (70%) Sandro Resources Ltd and Garetto Holdings Ltd/British Virgin Islands (30%)	60	Acquisition and resale by the DRC government to ENRC (2012)	103	43
Kansuki ***Gécamines' 25% residual stake*** **(2011)**	Biko Invest Corp/British Virgin Islands	17	Not sold on	133	116
Mutanda ***Gécamines' 20% residual stake*** **(2011)**	Rowny Assets Ltd/British Virgin Islands	120	Not sold on	633.6	513.6
TOTAL		275.5		1,630	1,355

Adapted from APP 2013: 101

On average, assets were sold at one-sixth of their estimated commercial market value to offshore companies for US$ 275 million following a series of complex deals involving the state-owned mining company, GECAMINES, offshore companies and major transnational corporations, including Glencore and ENRC. The Glencore's case study (see chapter 4) provides further details on transactions undertaken during the period, namely the role played by an Israeli intermediary that decisively made those arrangements possible.

They later secure very high profits from the onward sale of concession rights, with a 512% an average rate of return across the five deals. In 2012, total losses from the five deals were amounted to almost double the combined annual budget for health and education.

1.5. The socio-economic impact of the DRC's mining sector

Mining plays a crucial role in DRC's economy as shown through its contribution to the job creation (cf. section 1.2). Besides the employment, the mining sector provides additional benefits to the country, namely export earnings, FDI, taxes and royalties. It also contributes 22% to GDP, 28% to government revenue and 11% to employment (ITIE 2017).

1.5.1. Employment

In addition to the estimated 2 million persons directly involved in the artisanal mining sector (cf. section 1.2), the industrial extractive sector contributed contributed 23.97%, or 12,929 workers[16] in the overall employment created in the DRC in 2015 with 10,086 national employees and 2,843 foreigners (ITIE 2017).

1.5.2. Export earnings

In addition, the DRC's extractive industry sector represents almost the totality of the country exports (95%). According to a WTO study (OMC 2017), high import and export taxes, combined with levies and different controls, contribute to reducing the competitiveness of mining industries in general and those of Congolese precious metals (diamond and gold) in particular. These measures do encourage the illegal export (smuggling) of these products; or are likely to discourage investment in this sector.

1.5.3. FDI

The Democratic Republic of the Congo is the seventh largest recipient of ODA in the world, although it succeeds to attract substantial FDI. DRC's FDI inward stock has maintained an uptrend between 2000 and 2016. From its level of US$ 617 million in 2000, it grew to US$ 9,368 million in 2010 and to US$ 21,187 million in 2016. Nevertheless, even despite growing interest from Chinese firms in the Congolese mineral sector, FDI is recently declining due to low commodity prices that have dampened economic prospects in many Sub-Saharan African countries. In 2016, aggregate FDI flows fell for the fourth consecutive year to US$ 1.2 billion (-28%), significantly below its 2012 peak of more than US$ 3 billion, as the country attracted only investments into its mineral sector (UNCTAD 2017).

1.5.4. Taxes and royalties

The mining and petroleum sector generated US$ 1,724 million in 2015, of which 68.3% (US$ 1,178 million) was its direct contribution to the Treasury. As such, the extractive sector is the first contributor to the state budget. The solid mines alone contributes US$ 968 million (US$ 947 million from mining companies and US$ 21.2 million from mining EPE), or 82 percent of extractive sector budget revenues (ITIE 2017).

1.5.5. Weak success in converting mineral resources into further profits

There are nevertheless areas of decisive improvement such as the attractiveness of DRC to investors and implementation of best practices in the mining sector. Thus the Investment Attractiveness Index got

[16] These figures refer both to mining and hydrocarbons

improved to the 29th position in 2016 from the 75th position in 2011. Its ranking relative to the mining sector is even more glowing. The Best Practices Mineral Potential Index ranked the country 7th in 2016 from the 26th position it occupied a year before (Jackson & Green 2017). Despite the blooming results in the mineral sector, many reports still decry the overall governance of the Congolese government, and the instability dissuades certain mining operators from Canada and Australia.

Despite these remarkable macroeconomic data, governance indicators reveal a rather weak performance, though continually improving. According to the Fraser Institute as far as the policy perception index was concerned, DR Congo moved up to the 70th rank over 104 countries in 2016 from a position of 107th in 2013. A reverse trend was observed by Transparency International ranking system[17], the country's Corruption Perceptions Index placed it at the 161th rank over 180 survey countries in 2017, while it was 156th in 2016 from the list of 176 countries.

At the level of Africa, the Mo Ibrahim Foundation gauged the overall governance in the 2016 report. DR Congo is ranked 46th among the 54 African states covered in the report. This composite Index involves 95 indicators distributed in four main dimensions of governance, namely Safety & Rule of Law (49th), Participation & Human Rights (42nd), Sustainable Economic Opportunity (47th) and Human Development (42nd). Though it slightly improved its score in 2015 (+2.7) from the one of 2005, it has not evolved enough from the African average and the ten-year country trend remains almost always regularly ranked among the last ten countries (Mo Ibrahim Foundation 2016).

Bountiful mineral endowments deliver an unsatisfactory economic impact, and as a consequence, a less positive contribution to social life. Concretely, the poor governance prevents Congolese to really benefit from mining windfalls. As an illustration, and according to investigations conducted by Global Witness, more than US$ 750 million of mining revenues were paid by companies to state bodies in the DRC between 2013 and 2015 into a dysfunctional state-owned mining company and opaque national tax agencies (Global Witness 2017).

For improving the mining sector management, multilateral partners (World Bank, MONUSCO[18], etc.) as well as bilateral donors (Germany, Belgium, UK, USA, etc.) provide funding to the DRC government. Even in the mining region, basic infrastructure is still largely limited. The Human Development Index ranked DRC at 176th position over 188 countries in 2015 (UNDP 2016) with a very slight improvement in its ranking over a year (2014). It nevertheless remains in the group of low human development with a percentage living below national poverty line spotted at 63.6% and at 77.1% of the population living below the international poverty line (in purchasing power parity terms) i.e. US$ 1.90 a day (UNDP 2016).

Despite the financial resources in circulation, the expected effects of the mining sector are still not felt by a large proportion of local populations. Governmental initiatives have been taken to improve profits for the country. It has put in place the policy and legal framework.

[17] https://www.transparency.org/research/cpi

[18] The UN provides funding for MONUSCO to undertake various missions in the field of securing the country and include controlling activities of rebel groups and through their mandate to protect the civilian population in Eastern Congo also contribute to an improved mining sector management

2. Policy and Legal Framework for the Mining Sector

Although various dysfunctionalities are numerous within the mining sector, the DR Congo nevertheless designed and implemented a policy and legal framework over the past 20 years in a context of political and social unrest which delivered poor outcomes. One of the significant tools has been the Mining Act[19] and its implementing decree[20] providing modalities for application of the law, as well as subsequent specific regulations complementing the legal framework[21].

2.1. The legal framework

Before the Mining Code of July 11, 2002 entered into force, DRC has experienced four major pieces of legislation that supervised the country's mining activities. There was namely the Royal Decree of June 8, 1888; the Royal Decree of December 16, 1910; the Ordinance-Law No. 67-231 of May 11, 1967; the Ordinance-Law No. 81/013 of 2 April 1981 on General Legislation on Mining and Hydrocarbons (Mazalto 2010). In general terms, in the aftermath of independence, DRC experienced an unsteady mining philosophy moving from a nationalistic approach to a more investor-friendly regulatory framework, as from 2002 onwards.

In 2002, the DRC established a legal framework replacing the nationalistic law adopted during the period of nationalisation in 1967. The scope of the Mining Code covers exploration (prospecting and research), exploitation, processing, transport and marketing of mineral substances classified as mines or quarry products as well as the artisanal mining of mineral substances and marketing (ITIE 2017). The 2002 mining code strikes a relatively reasonable balance between the interests of the state and the private sector — for example, permitting foreign companies to operate without a local partner but giving the state a 5% free carry[22]. As in most of mining countries in Africa, this law inspired by the World Bank and funded with IMF support, advocated the withdrawal of government from the productive sectors of the economy to confine themselves to the roles of regulator and promoter of the mining sector (Campbell 2009). In such a configuration, the productive sectors were reserved for foreign private investors to be lured, sometimes at the cost of significant incentives. The arguments for convincing foreign investors to come to exploit the mineral resources of the countries included measures favouring the free enterprise, the repatriation of profits, tax exemptions, among other things. In accordance with the World Bank approach, the Congolese mining code was aimed to encourage mining operators to invest in the DRC (Mazalto 2008). As a consequence, though it favoured large foreign firm investments, the excessive liberalization severely weakened the state, reducing its capacity to cope with its social responsibilities, which was largely detrimental to the local economy.

As apprehended by the 2002 law, ASM covers both Artisanal Mining and Small Scale Mining. The former is reserved for natural persons of Congolese nationality holding a small-scale artisan card to work exclusively in a dedicated Artisanal Exploitation Zone while the latter concerns a person who engages in a small and permanent operation, requiring a minimum of fixed installations using semi-industrial or industrial processes, after the detection of a deposit. In the ASM subsector, effects of such liberalisation were remarkable. SAESSCAM was far from fulfilling its many essential objectives, namely: cleaning up the artisanal sector through financial and technical assistance and through the supervision of artisanal

[19] Law No. 007/2002 of July 11, 2002 on the Mining Code, République Démocratique du Congo, Journal Officiel – Numéro spécial du 15 juillet 2002.

[20] Decree No. 038/2003 of March 26, 2003 on mining regulations

[21] Several ministerial orders including those concerned with issues of traceability, certification and due diligence that have been taken by the government to improve the regulatory framework in place

[22] http://www.opml.co.uk/sites/default/files/DRC%20mining%20report%20-%20OPM%20-%20Final%20Eng.pdf.

miners in order to improve their productivity and wages and thereby to promote the implementation of integrated community development projects at a local level to channel the production of artisanal mining into official channels in order to combat fraud in mineral substances trade and maximise government revenues. Even with the 2002 law, the artisanal miners and *négociants* have had few incentives to comply with the legislation; partly because the Congolese government has not created proper conditions to enable them to comply. For example, the recognition of cooperatives and their authorisation to mine in the ZEA remain largely inadequate. One of the major obstacles to the formalisation of the sector is the "lack of opportunity for ASM miners, in the form of cooperatives, to acquire secure and exclusive title to land" (EurAc 2017: 11).

Artisan miners are therefore rarely holders of mining cards, especially since it does not seem to grant them some compensation such as better infrastructure, or technical support. Informality in the ZEA is tolerated by state services, especially since they are considered the most remote, poor and unsuited to industrial mining activity. If, however, one of these zones is solicited by a company, it can quickly be declassified in only 60 days and made available to it. Because the Congolese law acknowledges that mining rights have precedence over land rights, pervasive dispute over property rights between artisans and company owners is common. For all these reasons, it might be said that the government's willingness to formalize the ASM subsector is still not sufficient (IPIS 2012).

The development of mineral resources was entrusted to private investors and benefited from financial incentives and a commitment from the State and donors to secure investments enrooted in favourable mining regulations. The objectives of rationalizing the legal environment and institutionalizing the state would have required the use of trained civil servants, accompanied by a government with a "real" national policy. But the first years of the resumption of development programs were led by a transitional government with more than a true legitimate authority, which was the result of a political compromise between the various factions in conflict. In such a context, the primacy was granted to a rapid pacification of the whole territory. Any analysis that attributes almost exclusively the excesses of governance to a lack of political will or structural dysfunctions of the Congolese state seems too partial (Mazalto 2008).

The rising commodity prices added to huge profits made by large mining companies and reinforced the inability of liberalized mining regulations to address the country's development challenges. Clearly, the profitability of the mining project was emphasised to the detriment of the producing country's development, the development of the DR Congo was not ultimately pursued (Kubokoso Ndela 2008). In such a context, the requirement of "revisiting" has imposed itself on the government in order to include corrective measures and favourable policies. As early as 2007, the country began a process of tax, legal revision and environmental frameworks, as well as the mining contract regimes "to respond to new demands for the social regulation of private sector development, to accompany the rapid process of liberalisation that has opened up mineral-rich African economies to investment." (Campbell 2009: 253).

But the law did not deliver the expected efficiency within the sector, partly because it did not cope with the complexity of the Congolese situation, and because IFI did not provide necessary support to the government for implementation and enforcement of new laws, especially in a context of foreign investors' influx and multiple deficiencies in the ASM (Mazalto 2008).

In 2009, after more than two years of work on reopening, re-reading, renegotiation or even termination of numerous contracts and agreements signed by state-owned and mixed economy companies in the mining sector since 1996, the government published the results of the review of contracts between large mining companies and the Congolese state. Of the 57 contracts and 6 Conventions revisited, 37 and 3 Conventions were to be renegotiated while the 20 and 3 other Conventions were to be terminated, clearly indicating that no contract or agreement was deemed viable. This process allowed the Congolese

State to potentially collect more than US$ 315million as a bond ("Pas-de-porte" and royalties) before the start of operations[23] (Mba Talla 2010).

After the revision of the contracts, which already represented a turning point in the positioning of local government in relation to the deep liberal orientation of the mining code, the DRC launched in 2012 another process, that of the mining code revision, though many provisions in the former law were never implemented.

Two *Arrêtés* (orders) of 2012 on the certification issue tried to tackle recent developments aroused in the sector. The first establishing a new mineral certification mechanism as mandatory for all actors active in the 3T and gold sectors to adhere to the due diligence standards established by the OECD, and the second setting up procedures for the certification of mining sites of the gold and 3T industries. Those new concerns in the DRC's mining sector were previously incorporated into the national legal arsenal by the 2012 decrees.

The ongoing revisions aimed at directly merging into a law geared to the requirements of a modern mining sector. In addition the envisaged reforms also include increasing the state's free-carried and non-dilutable share in mining projects from 5% to 10% while the government's interest would grow at the same rate at the renewal of each mining permit. This upward trend is also applied to the corporate tax rate that would move from its present level of 30% to 35%, as well as the royalty rates on cobalt and copper moving from 2% to 3.5%. An additional super profits tax rate of 50% applied to a mining operation when the price of the relevant commodity was 25% or greater than the price forecasted in the feasibility study would be introduced. The reform also proposed the introduction of local content provisions, particularly relating to the reinforcement of local employment and ore processing requirements on the spot (Jeune Afrique 2017, EurAc 2017, USGS 2017). The CSO stepped in for fully supporting the governmental revision process, though with different motivations. Whereas the government was mainly interested in increasing financial windfalls resulting from mineral extraction, processing and trade, civil society was pushing for further governance provisions in the revised code.

After four years of procrastination, the government temporarily abandoned the revision of the mining code in February 2016[24] under strong pressure from large industrial sector businesses (VoA 2017, Global Witness 2017). Thanks to protestations from around 40 Congolese civil society organisations and other mining stakeholders, a statement from the president office was issued in March 2017 by announcing the commitment of the government to rapidly push through the new mining law and submitted the 2015 version of the bill to the parliament (EurAc 2017). After debate in the National Assembly during the June 2017 session, the bill was declared admissible and sent to committee for its enrichment[25]. According to, the publicly available version of the law on the internet website of the ministry in charge of Mines it is still the one of 2002[26] and might be an indication that the process is still underway.

Although this 2002 law was more detailed and specific to the mining sector, it remains unfortunately ineffective since the functioning of the implementing bodies is not always effective compared to

[23] https://www.radiookapi.net/emissions-2/dialogue-entre-congolais/2009/11/17/fin-du-processus-de-revisitation-des-contrats-miniers-en-rdc-selon-le-ministre-des-mines-ce-processus-va-rapporter-plus-de-trois-cent-millions-de-dollars-a-l-etat-congolais-avant-le-debut-de

[24] https://www.businesslive.co.za/bd/opinion/2017-02-07-african-mining-has-vision-and-map-for-growth--now-it-needs-investors

[25] https://www.radiookapi.net/2017/06/07/actualite/societe/rdc-la-revision-du-code-minier-en-discussion-au-parlement

[26] http://mines-rdc.cd/fr/documents/fr/fr/index.php

challenges raised in the sector. SAESSCAM is in this respect rather illustrative of the mismatch between the structures and the reality on the ground.

This new Mining Code, adopted at the end of January 2018 by the Parliament, was finally promulgated on 09.03.2018[27]. It introduces an increase from 2 to 10% of the royalty on "strategic metals", which a decree of the Prime Minister is likely to make the list of which cobalt and copper will be part, but also the removal of a clause which ensured the stability of the terms of the contracts over a period of ten years[28]. Another novelty is the regular renegotiation of contracts and the participation of at least 10% of Congolese citizens in the share capital of mining companies. As a result, the new key for allocating mining royalties assigns 50% to central government, 20% to provincial authorities, 15% to decentralized territorial entities and 15% to future Congolese generations[29]. The 15% deducted from the previous allocation comes from 10% deducted from the share returned to the State and 5% from the share of the provinces according to the Article 242 of the Mining Code. This new allocation for future generations is an innovation towards greater accountability, by saving a portion of mining revenues for future Congolese. Even though a similar experience initiated in Chad in the early 2000s was later repressed by the President of the Republic. Nevertheless, that cannot predict the future of this legal provision and others, especially as on the one hand international mining companies operating in Congo strongly opposed the new terms including raised taxes and royalties, and remove a ten years stability clause, and on the other the President Kabila's office agreed to deal with firms' concerns on a case-by-case basis.

Yet, dealings grew at the beginning of the year, especially those involving the seven CEOs of the mining giants of the DRC in early March 2018[30]. Their fears have not been sufficiently taken into account, the code having been promulgated as it stands; the mining companies including Randgold, Glencore and China Molybdenum have made proposals to the government and are waiting for an appointment with the Minister of Mines. They are also withdrawing from the FEC, which does not properly represent the interests of these companies.

2.2. National and international Policies implemented in DRC

At the policy level, DRC has so far elaborated no written policy document where an overall clearly defined vision for the development of the mining sector is presented. Nevertheless, the Ministry of Mines has adopted several planning documents including the roadmap for the period 2010 - 2015, the Priority Actions Program (PAP) and a Medium Term Expenditure Framework (MTEF) 2012 - 2016, a roadmap 2012-2016 for the Ministry of Mines[31]. Similarly in 2016, a process of consultation was initiated for the validation of the Strategic Plan for the Development of the Mining Sector for the period 2016 – 2021. It was supported by the World Bank through the PROMINES Project dedicated to the support of DRC's mining sector[32]. In addition to successive national plans, DRC initiated the process of alignment of its mining sector to the AMV, which is a continental tool for increasing socio-economic benefits from the mineral wealth. The 2009 AMV aims at strengthening horizontal and vertical economic linkages between the mining sector and national enterprises and other economic sectors, improving the quality of the business environment and reducing entry barriers and operating costs to achieve economies of scale

[27] http://www.dw.com/en/rdc-the-positions-of-new-miner-code-will-be- self-applied% C3% A9es / av-42979553

[28] http://www.dw.com/fr/code-minier-en-rdc-joseph-kabila-a-t-il-l%C3%A2ch%C3% A9-of-ballast / a-42895817

[29] http://www.dw.com/new) -code-mining-en-rdc-end-of-l% C3% A2ge-dor-for-multinational / g-43013807

[30] http://www.dw.com/fr/kabila-convoque-les-7-principaux -op% C3% A9rateurs-mining de rdc / a-42875333

[31] http://www.prominesrdc.cd/fr/Rapport/Rapport_Orga.pdf

[32] http://www.prominesrdc.cd/fr/Rapport/PLAN_STRATEGIQUE_final_R2.pdf

bringing along private sector confidence and participation[33]. Through this strategic instrument, Congolese government shows its will of correcting past weaknesses and therefore building a sustainable mining sector.

Besides this national framework, regional and global mechanisms for natural resource governance are being implemented in the DRC either as a result of government's adhesion to international initiatives or as the result of steps taken by foreign partners to contribute in enhancing the mining sector, namely by increasing transparency in the financial flows across the mining sector (PWYP, EITI) and the traceability of minerals (KP). As far as EITI is concerned, DRC's Candidate status was temporarily suspended between April 18, 2013 and July 2, 2014 because its 2010 country Report failed in meeting the EITI requirements. After addressing those concerns, the EITI Board designated the DRC (DRC) as EITI Compliant[34].

Other international initiatives for combatting conflict minerals such as the OECD DDG, the Dodd Frank Act, etc. are being implemented in DRC highlighted further in a later section.

In short, the country has legal and policy instruments to ensure the development of its mining sector. Even if they seem insufficient, they nevertheless allow framing operations on the ground. Moreover, despite all the potential offered by the sub-sector, the government has no sectoral policy for its long term development. The absence of a general policy specific to the mining sector, clearly indicating over the time, objectives, orientations and prospects of the Congolese government unavoidably results in short-sighted policy and actions. In addition, the implementation of the regulatory system regularly encounters difficulties related to lack of capacities for their monitoring and enforcement, which is struggling to use the mining sector as a launching pad for the country's actual development in the face of instability and misery. As with the timber sector, the positive escalation observed in the tariff structure of this sector is not likely to encourage processing for export.

However, it is important to accelerate the pace of ongoing reforms (adoption of a new legal and institutional framework) and to define a global vision in which the mining sector is inscribed, as well as objectives and a longer periodicity than the current plans cannot allow to realize.

[33] http://www.opml.co.uk/sites/default/files/DRC%20mining%20report%20-%20OPM%20-%20Final%20Eng.pdf.

[34] https://eiti.org/news/dr-congo-becomes-full-member-of-eiti-0

3. Issues of Particular Importance for the Development of the Sector in DRC

DRC is familiar with weak policies, including during Mobutu's tenure. This calamitous governance situation was further amplified during the two wars in Congo, during which both governmental militia and other dissident armed groups have used the country's mineral resources to maintain their fighters in pursuing their causes. Since then, the conduct of a governmental policy or the enforcement of the law with a national scope is a challenge that has never been addressed. Peace and security are therefore one of the major issues of the mining in DRC.

3.1. Peace and political appeasement

If the colonial period is a moment of significant violence, the recent history of the DRC is even more marked by instabilities and multifaceted conflicts that are so often related to exploitation or control of important natural resources and especially minerals. The first post-independence decade was a turbulent period marked by many coups, the Prime Minister Lumumba's extra-judiciary execution, rebellions or secessionist movements in southern Kasai and Katanga, and the revolutionary movement initiated by the CNL in the eastern DRC. Joseph Mobutu took over the power after a military coup that led to contain irredentist and rebellion movements mainly from Shaba in the east of the country. During his long rule of 32 years characterized by bad governance, he led the country with an iron fist and somehow maintained the integrity of the Congolese territory, though it then became a failed state unable to provide the salary of the army soldiers. It was in this moment of decline that the first Congo war (1996-1997) broke out and overthrew Mobutu. Enjoying much international support, including in the Great Lakes region (Uganda and Rwanda), Laurent Kabila, leader of the AFDL, defeated the regular army and proclaimed himself president of the DRC. The second Congo war started under the office of Laurent Kabila, and continued two more years after the first tenure of Joseph Kabila, the son of the former president. Though the war is officially ended, eastern DRC is still controlled by several armed groups, especially in the vicinity of Rwanda and Burundi (IPIS 2016).

Those groups remain a threat to the overall peace in the region and for the whole country. The assessment of effects of the political instability on the mining sector shows significant damages. The war caused great losses for the country, in particular because of the plundering of natural resources extracted with a loss but also of the consequent financial fallout which would have arisen from the normal activity of the multinational companies. The impact of the war is yet to be reversed despite the significant investment the government and its partners already made in this area. Despite the relative return of the state to the mining regions, effective control over mining activities remains insufficient. IPIS has identified 56% of mining sites directly affected by militia presence.

Peace and security are therefore crucial for consolidating as a priority as it improves the image of the country and its corollary that is the attractiveness of international investments. It also reduces the need for the certification, traceability and DD initiatives aimed at curbing the ethical problems posed by the import of mineral resources from war-torn countries. Peace and security are thus a decisive factor contributing to the increase in the flow of state benefits as well as their distribution once the various vectors of traffic have been contained. Despite instability dramatically affecting its mining sector, the DRC is still struggling to find a lasting solution that would avoid the frequent incursions of multiple rebel groups. Moreover Kabila’s will to grip onto the power through non democratic channels has increased the number of unsatisfied people. International Crisis Group published a report where it highlighted the dangerous trajectory taken by the DRC because of the political uncertainty and growing polarisation between government and opposition, combined with escalating violence in many provinces. It has urged

the European Union and its member states to denounce attempts by the DRC government to further delay the polls and offer technical electoral support to the Electoral Commission (ICG 2017). This posture of the president is potentially explosive and constitutes a serious threat to the precarious peace in the country.

3.2. Security threatened by armed groups and criminal networks

When peace is broken, security becomes a concerning issue. Despite the total mineral wealth estimated to tens of trillions of dollars by the US, the DRC has a high tolerance for risk and familiarity operating in complex or fragile environments. It is also described as marked by ongoing low intensity conflict in the east of the country, with a potential for political instability, where mine operators continue to invest in their operations in anticipation of improved market conditions and to maintain operational footholds in this lucrative environment[35].

In spite of these recurring instabilities, mining of mineral resources continued. Armed groups and criminal networks got involved in the extraction and the trade of mineral products. As documented by the IPIS research, the overall degree of militarization of the artisanal mining sector in eastern DR Congo is significant. When the presence of non-state armed groups and interfering FARDC presence are aggregated, it resulted that 56% of the mines recorded interference of at least one armed actor for all 1,615 mining sites visited since 2013. The major armed actor illegally benefitting from artisanal mining was the FARDC with 26% of presence associated to interference with mineral production and trade.

The 2015 phase was conducted on 775 mine sites where 100,300 artisanal workers were active on 3TG. In 53% of cases, at least of an armed actor was present. FARDC elements were interfering in 25 % of cases while a non-state armed actor was present in 18 % of all cases. The principal criminal activity recorded was the illegal taxation happening in 34% of all visited mines, i.e where 41% of the miners were at work. Other secondary activities included the monopoly of goods sold at the mining site, buying of minerals or digging by the armed actor, or forced labour for the armed actor occurred in 5-12% of cases (IPIS 2016).

The decrease in the armed groups' presence from 2013 to 2015 does not necessarily implies that the phenomena is declining because the armed presence is often also linked to a mine's productivity which fluctuates according to season, production phase of the mine and the discovery of new deposits.

In the 2017 report of the UN GoE, it was also observed that at least three different armed groups including the FDC-Guides, MAC and APCLS occupied areas around validated Mahanga 3T mining sites. With regard to gold operations, the Group acknowledged to be aware of cases involving FARDC elements and other armed actors in the exploitation and trade of gold across the Democratic Republic of the Congo (UN SC 2017).

Security is still a serious concern in the DRC, especially in the mineral-rich eastern regions, though not exclusively due to mineral resources, it impacts the global business environment and can therefore deter some investors.

3.3. Cross-border trafficking entities

Neighbouring countries played a significant role in the outburst and conduct of the crisis in Congo, as the invasion of eastern and south-eastern DRC in the Second Congo War (1998-2003) by Rwanda, Uganda, and Burundi attest (UN 2001). Natural resources were looted at a large scale (minerals,

[35] https://www.export.gov/article?id=Congo-Democratic-Republic-Mining-and-Minerals

agricultural products, timber, and livestock) at several locations in the eastern DRC (UN 2001). All that happened with the direct or indirect support of foreign companies (Montague 2002, Nellemann et al. 2010).

The contraband trading with neighbouring countries itself related to the higher purchase price, favourable tax conditions in other countries (Uganda, Burundi and Rwanda), as well as the collusion of some state agents. This deprives artisanal miners, the government and the local people of the profits they could have legitimately derived from the abundant extractive activity taking place in the country (supporting consumption of goods and services at local level, stimulates trade, and monetary circulation).

The cross-border smuggling of minerals between the DRC and Rwanda rests on networks active in Goma, Bukavu and Idjwi where Congolese authorities including military and customs receive money directly from traffickers to facilitate illicit transactions. As an illustration, some Congolese customs agents encourage traders to bring the minerals in Kibuye in Rwanda[36]. The Lake Kivu and its small islands as well as the mountainous areas are some zones of intensive smuggling activities. The shores of Lake Kivu in Goma are the entrance gates to Rwanda where "swimmers" push bags loaded with tires and heading towards Gisenyi, the neighbouring Rwandan city of Goma. Bags are reported to contain contraband ores produced in invalidated sites (Musila 2016). Congolese officials being complicit in minerals smuggling from Congo into Rwanda was also reported by the UN Group of Experts. In the same report, they mentioned incentives to develop smuggling networks in both Congo and Rwanda because minerals tagged in Rwanda can sell for more than untagged minerals sold from DRC (UNSC 2017).

3.4. Formalisation of ASM

The informal mining is the result of developments that have followed in the recent history of the DRC. Indeed, in the discovery and marketing of different minerals by the Belgians, control was almost absolute on the value chain. With the nationalization of mining projects, the state to ensure a serene continuity of operations, especially to manage the periods of fluctuations in the price of minerals. To try to resume normal exploitation, Mobutu liberalized the sector in 1982 (IPIS 2012). Several of these projects have turned around and closed around the 90s, giving free rein to local residents to engage in artisanal mining.

Moreover, armed groups are also involved at different levels, and are refractory to the presence of the State, what further accentuates the problem of exercising any legal control over these mining sites. Fighting forces—Congolese, Rwandan, Ugandan and foreign civilians entered the exploitation of natural resources during the two Congo wars seeking tirelessly to maintain or even extend their control over territory, resorting frequently to mass-scale looting of mineral assets. For the most part, foreign companies were forced to reduce the size of their activities. Their actions also targeted small artisanal mining operations where they robbed, and sometimes, shut down afterwards. The proceeds of their unregulated activities involving soldiers, locals organized by the military commanders and by foreign nationals allowed these rebel groups to supply the international corporations. Despite the peace agreement in 2003, they have not all been flushed out by regular armed forces, who themselves are still often involved in irregular practices at mine sites[37]. Their presence discourages farming activities regularly the object of looting perpetrated by these groups. Regular looting on mining sites, illegal taxation at roadblocks, trade and smuggle minerals are some ways used by these groups practice to profit from the Congolese ASM.

[36] http://www.resolv.org/site-ppa/files/2015/11/Rapport-interimaire-projet-SAM-PPA-version-anglaise.pdf

[37] http://ec.europa.eu/trade/policy/in-focus/conflict-minerals-regulation/regulation-explained/

During the 1999-2000 coltan boom period, the price reached a record US$ 350 per kilogram and increased the interest of many international and local actors who did not hesitate to attack even the most remote sites, lacking access roads and electrical installations.

The production of the 3TG in the eastern provinces of the DR Congo (North and South Kivu, Katanga, Maniema) is mainly achieved through informal and unregulated artisanal and small-scale mining activities, although industrial gold mining is on the rise in recent years. Informality is widespread in the production segment of the mining value chain, transportation and commercialisation of ores. The organisation of ASM as it is operating now is not efficient enough to curb illegal practices along the mining value chain. The inefficiency of government measures to formalize the sector is further exacerbated by the isolation of remote mining areas. Their access is difficult because of a lack of appropriate communication channels. The mixing of consignments is a reality that affects the credibility of existing traceability schemes. Various DD processes are still to provide expected outcomes.

The formalization of the ASM subsector, taken in isolation, will not be a panacea *per se*, especially in the Congolese context. Risks associated with it are related to 'dispossessing' artisanal miners to the advantage of local elites and large businesses, which would not significantly improve living standards of artisans. Therefore intensifying governance efforts can constitute an efficient complement to the ASM formalisation.

3.5. Governance for supporting responsible sourcing of minerals from conflicts

Thanks to initiatives such as EITI, the opacity that shrouded financial flows across the mining sector got improved. The discrepancies between the statements made by the government and companies have not progressively diminished as the reports were published, reflecting the lack of understanding of the functioning of this mechanism, coupled with its low ownership by the stakeholders involved in the production of the figures. As a result, the difference between the templates originally lodged by corporations and government's financial authorities varied from US$ 167.5 million in 2012 to US$ 392.5 million in 2015. Even after reconciliation, the result hardly improved, and the total unreconciled discrepancies amounted to US$ 9.5 million in 2012 and US$ 8.7 million in 2015 (ITIE 2014, 2017). There is still a long way to go in order to have a transparent mining sector. Several reports frequently challenge Congolese practices in the mining sector, which cost significant losses to the country finances.

Global Witness has exposed a significant loss due to manipulation undertaken outside of the DRC. Up to US$ 1.4 billion through a series of opaque mining deals with offshore companies was recorded since 2012. In addition, huge amounts are also going missing within Congo as a result of corruption and an inefficient tax system (Global Witness 2017). Various small governmental bodies received over US$ 170 million in tax payments and nearly US$ 400 million was paid directly to a provincial tax agency rather than to the national treasury, which is illegal. But the problem arises when tax collected is not returned to the state treasury. That tax agency has since been dissolved and replaced by four smaller agencies in a provincial reshuffle. Together, between 30 and 40% of total mining payments each year failed to reach Congo's treasury in 2013-2015; that's over US$ 1.3 billion of mining revenues.

The conflict of interest is another way oligarchs use to profit from the DRC mining sector. High rank elite misappropriated this money using their privileged position. The process of equity participation in mining companies is also an approach used by political and socio-economic elites. This is particularly the case analysed in detail by a report from the Congo Research Group of the New York University has documented Kabila's family interests in the DRC mining sector as illustrated on the map (Figure 3).

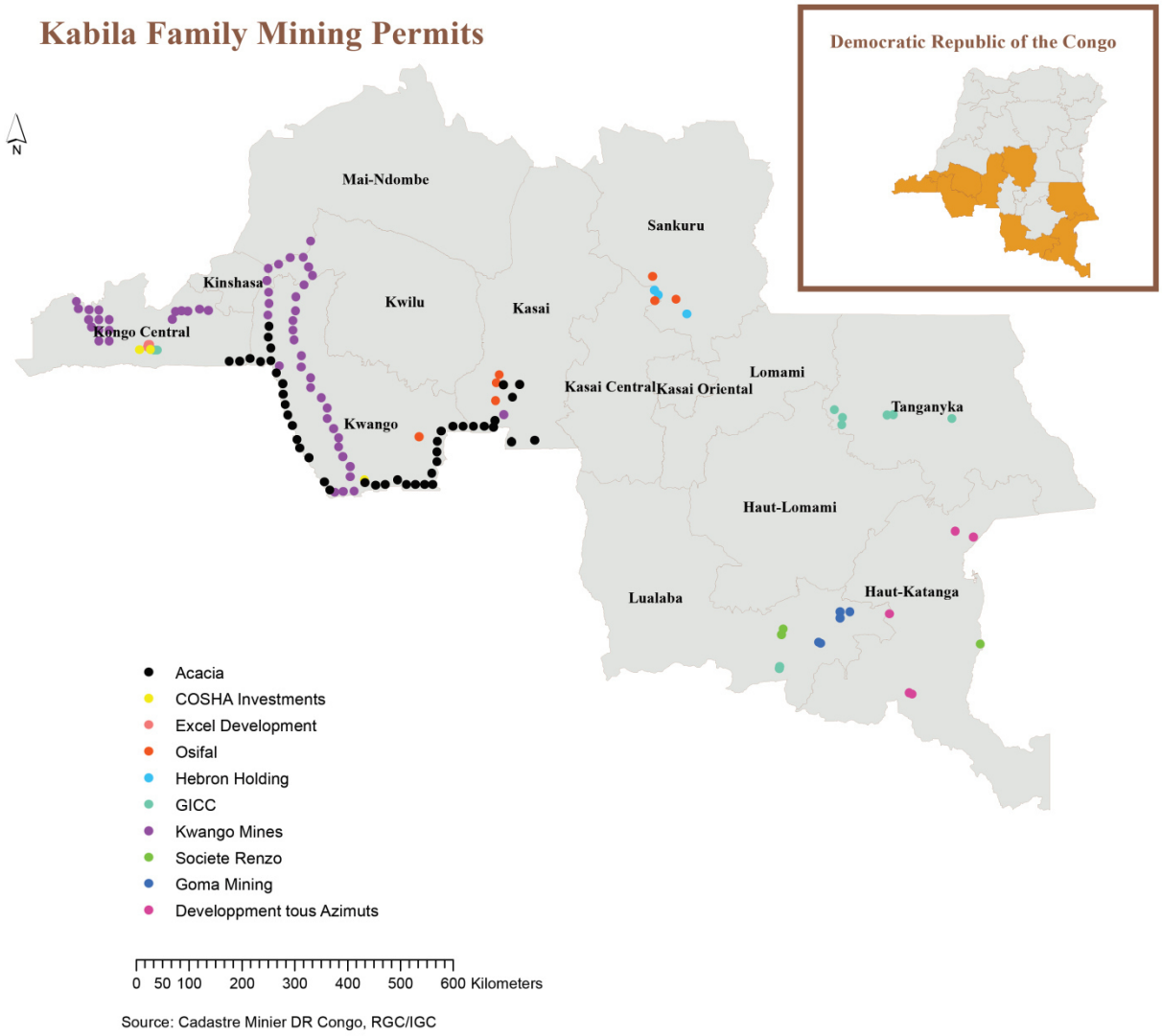

Figure 3: Mining permits partially or wholly owned by Kabila family members in the DRC mining sector (CRG 2017)

Assets held by the president of the republic and relatives are mainly located in the provinces controlled by the government (Kasai, Kwango, Kwango Central, and Kinshasa,). The Kabila family's holdings include over 100 mining permits for diamonds and gold[38], while the diamond permits stretch more than 450 miles across Congo's southwestern border with Angola[39].

In addition to these possessions in the mining sector, members of the Kabila family also have stakes in banks, farms, fuel distributors, airline operators, a road builder, hotels, a pharmaceutical supplier, travel agencies, boutiques and nightclubs[40]. The eastern provinces (Haut-Katanga, North and South Kivu, Tanganyka) are less covered by elite involvement in the mining business. Apart from the president of the republic, the member of parliament and twin sister of Congolese President, Jaynet Kabila, would have a significant share of these possessions in the mining sector and beyond, according to the

[38] http://www.businessinsider.com/r-congos-kabila-and-family-worth-millions-new-report-says-2017-7?IR=T

[39] https://www.bloomberg.com/news/features/2016-12-15/with-his-family-fortune-at-stake-congo-president-kabila-digs-in

[40] https://www.nyu.edu/about/news-publications/news/2017/july/dem--rep--of-congos-kabila---family-have-large-private-holdings-.html

revelations of the Panama Papers[41]. It is reported that Congo's Ministry of Mines has granted a company controlled by the president's sister, Jaynet Kabila, more mining permits than allowed under the country's mining code.

Besides the presidential family, other well-connected elites are also involved in the extraction and trade of Congolese mining resources (CRG 2017). The head of GECAMINES is one of those elite making private profits out of the DRC mining prospects. The state board concluded some problematic deals with Glencore that were questioned by the Paradise Papers (Global Witness 2017).

Although the mining potential is considerable and the financial flows abundant, the Congolese mining sector is facing many challenges, both internal and external. However, the governing apparatus has not yet been able to show any ability to use the sector as a vehicle for promoting growth and development at the service of the general interest. On the contrary, the Congolese oligarchy, which holds positions of power in the sector, has largely benefited from it. The more frank promotion of transparency, which exposes the reprehensible behaviour of Congolese decision-makers, could extend the circle of local beneficiaries. This approach should be complemented by intractable governance that punishes malfeasance without any weakness, thus driving the adoption of the republican behaviours.

[41] http://www.rfi.fr/afrique/20160409-rdc-proches-president-joseph-kabila-panama-papers-jaynet-dan-gertler

4. Case Study: Glencore

Glencore is one of the largest mining and commodity trading companies in the global mining market. From own sources, the firm mines 12 metals and minerals (copper, cobalt, ferrochrome, gold, lead, nickel, platinum, palladium, rhodium, silver, vanadium pentoxide, zinc) at various locations in the world. In 2017, the copper and nickel production amounted respectively to 1.3 million t and 109,100 t (Glencore 2018). Although of Swiss origin, its operations supply all major ore buyers in the world, including those in the EU. The European automotive industry absorbs a variety of metals and minerals. Nickel demand from the battery sector accelerated through 2017, with annual growth estimated at 30%, to which the company has contributed. It also holds projects in the EU, although they are not in the mining sector.

Glencore's case in the DRC mining sector, despite its importance (capital, investment), helps to understand that formalisation does not preclude any involvement in irregular practices, while further highlighting the necessity to implement a DD extended to governance for avoiding certain practices. It, therefore, reveals that DD philosophy needs to be complemented with other initiatives in order to effectively guarantee sustainable mining.

Glencore International AG is producing and trading more than 90 commodities with a presence in more than 50 countries with a turnover of US$ 152 billion. The company was founded in 1974 by controversial businessman Marc David Rich, very skilled in circumventing the US and United Nations embargoes respectively on Iran for selling oil to Ayatollah Khomeini and on the South African apartheid regime for oil business as well. Under the threat of more than 50 charges of the American court in 1983, including tax evasion of more than US$ 48 million and trade with the enemy, Marc Rich fled to Switzerland and set up his company headquarters in Zug. He benefited from the protection of Swiss government which refused his extradition to the US.

The company has been regularly charged with unlawful practices in the mining sector. This is the case, for example, with tax manipulations of which the Nigerian government accused it in 2004, of the violation of the embargo against Iraq in 2005, when the company paid over US$ 3 million in surcharges to Saddam Hussein in order to gain access to its oilfields[42]. The same applies to the seizure by the Bolivian government of one of its tin mines in 2007, as well as investigations for "illegal commercial activities" in Russia in 2008 (Peyer & Maillard 2011). From the same year on, it was regularly accused in many corruption cases in its operations in DR Congo.

4.1. Glencore presence in DRC

Unafraid to operate in jurisdictions where others fear to tread, Glencore is for example one of the biggest foreign firms in the DRC. Its activities range from copper and cobalt extraction to concentration activities. The company operates a large-scale copper-cobalt project with substantial high-grade mineral reserves and integrated metallurgical operations. The Glencore presence in the DRC dated back to 2008, when it acquired shares in MUMI and KML owned by the KCC.

The MUMI is an open-pit copper mine in the Katanga Province which was created in 2002. It also includes a dense media separation concentrator and a hydrometallurgical plant for crushing, screening, milling, pre-leaching, leaching, clarification and a Solvent Extraction/Electrowinning. It produces copper metal, cobalt hydroxide and copper cathode. It was acquired in 2008 after a process that was deemed contentious today. According to the 2015 EITI report, the MUMI project is held at 69% by Glencore through SAMREF OVERSEAS, a company listed on the London stock exchange, which is 100%

[42] http://www.businessweek.com/magazine/content/05_29/b3943080.htm

controlled by Glencore, and at 31% by Fleurette Mumi Holding, held by a trust for the benefit of Dan Gertler's family. On the 13 February 2017, Glencore announced on its website it purchases the Fleurette group's remaining 31% stake in Mutanda Mining Sarl[43]

But the most controversial project is the KML, listed on the Toronto Stock Exchange under the symbol KAT, where it owns 75% of shares, whilst state-owned mining companies in the DRC GECAMINES/SIMCO control 25% as detailed in Figure 4.

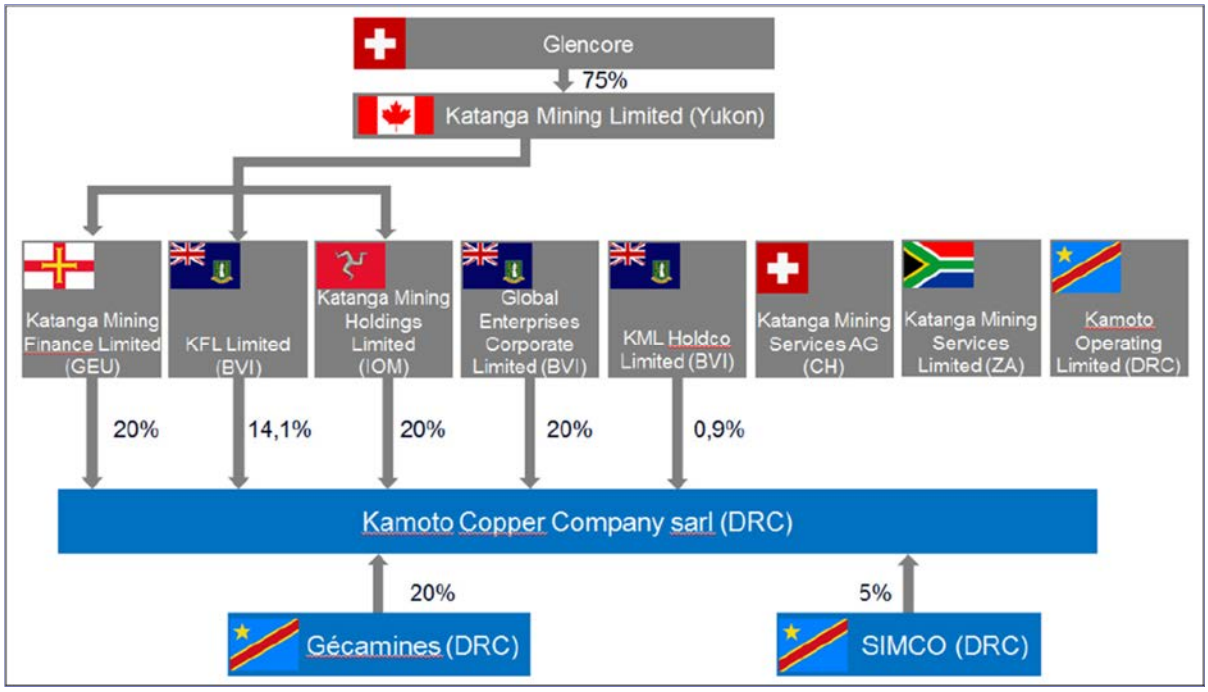

Figure 4: Ownership of Kamoto Copper Company (Dolega 2016)

Glencore also announced the 10.25%-increase of its stakes in the Katanga Shares, which is now approximately 86.33%[44]. The KML operates a large-scale copper-cobalt mine complex in the DRC through two joint ventures, KCC and DRC Copper and Cobalt Project (DCP). The Kamoto underground mine was wholly-owned and operated by GÉCAMINES as from 1969 on until the cessation of its activities in October 1990. 16 years later, a feasibility study confirmed the possibility of reopening at relatively low cost given its capacity. The Kamoto Project includes exploration and mining properties, the Kamoto concentrator, the Luilu metallurgical plant, the Kamoto underground mine and two copper/cobalt oxide open pit resources in the Kolwezi district of the DRC. The concentrator serves to crush, sift, grind and sort the material coming from the extraction, before separating the sludge and the residues from the ore. The hydrometallurgical plant is used for refining concentrated ores from the concentrator to cathodes (Peyer & Maillard 2011). In December 2007 following the completion of the initial phase of a four-phase refurbishment of the brownfield site, the KCC joint venture produced its first copper cathode. The KCC resumed with commercial production on June 1, 2008. The DRC Copper and Cobalt Project (DCP) was acquired through Katanga's merger with Nikanor in January 2008. DCP's assets include mining properties and various copper/cobalt oxide open pit resources, the largest of which is the Komoto Oliveira Virgule (KOV) pit. The KOV pit is not yet in commercial production. Both are working on adjacent properties to create a major single-site copper and cobalt operation. They

[43] http://www.glencore.com/media-and-insights/news/glencore-purchases-stakes-in-mutanda-and-katanga

[44] http://www.glencore.com/media-and-insights/news/glencore-purchases-stakes-in-mutanda-and-katanga

merged in July 2009 and are together engaged in the exploration, refurbishment and rehabilitation of the Kamoto/Dima mining complex (the Kamoto Project) and the KOV copper and cobalt mine, respectively in the DRC[45], as shown in Figure 5.

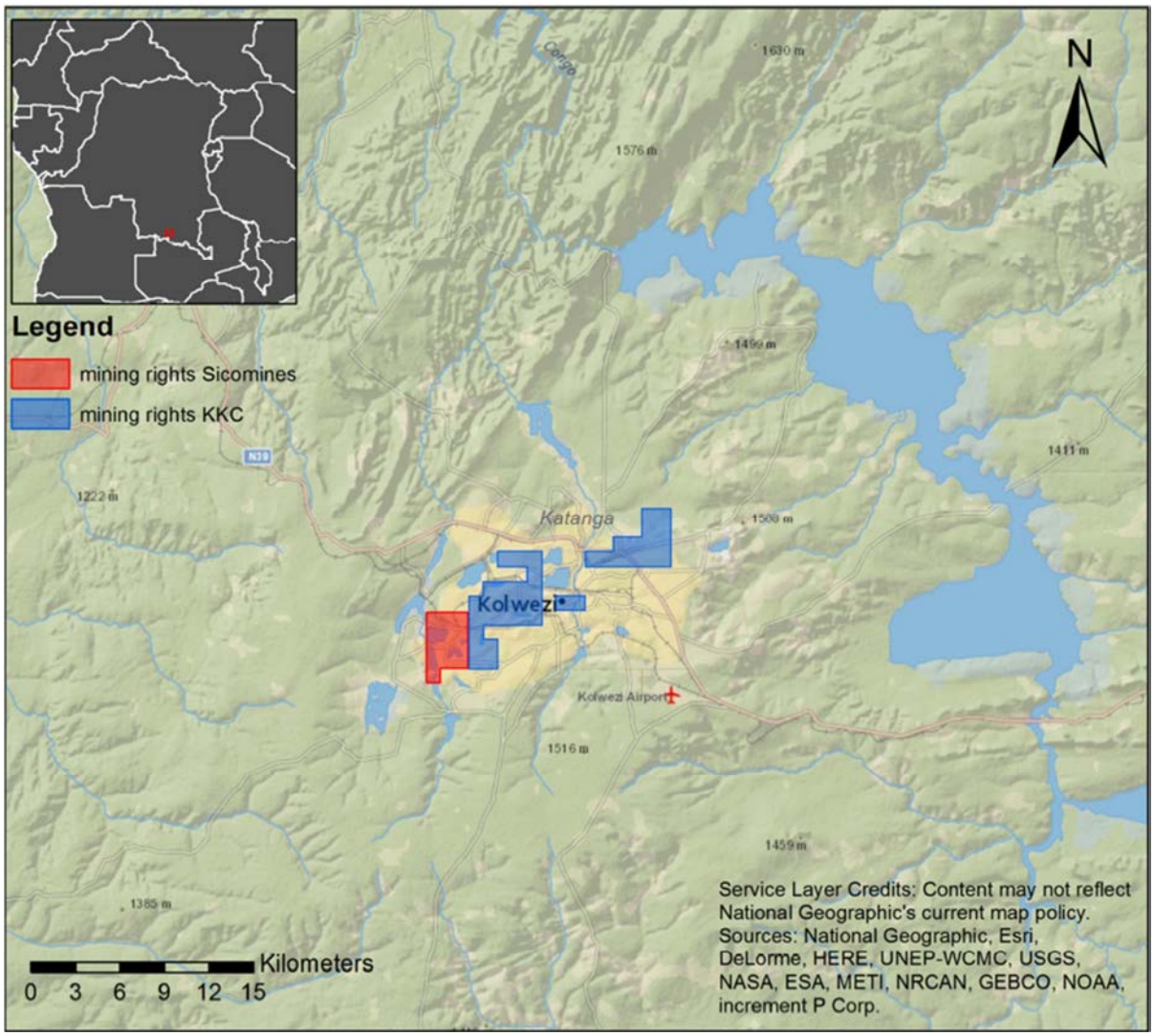

Figure 5: Location of Glencore's concessions besides those of SICOMINES (Dolega 2016)

The January 2008's merger with Nikanor PLC, whose adjacent concessions had previously been part of the same mine complex, has consolidated company's leadership position in the region and was expected to generate significant operating and financial synergies. The company claims a critical contribution to the DRC economy through its investment close to US$ 5 billion in its assets; which includes capital funding to address legacy issues and help regenerate the entire DRC mining industry. In addition, it provides around 17,000 employee and contractor jobs created, almost all held by DRC nationals[46].

4.2. Previous reports

Yet several reports question Glencore's dubious business practices in the Congolese mining sector, and precisely its collaboration with the Israeli businessman, Dan Gertler. The billionaire arrived in Congo in

[45] http://www.katangamining.com/operations/project-overview.aspx

[46] http://www.glencore.com/ask-glencore/democratic-republic-of-the-congo/

the aftermath of the coup perpetrated by Laurent Desirée Kabila. This was a period the government financed war through resources collected from minerals and mining industries in three distinct ways thanks namely to (a) the cash that resulted from the attribution of monopolies; (b) the direct and indirect uptake of funds from parastatals and other private companies; and (c) the creation of joint ventures between parastatals and foreign companies in countries allied with the DRC.

4.2.1. UN Report

Dan Gertler belongs to one of Israel's most famous diamond trading families. He arrived in the DRC in 1997 in search of a fresh fortune and made a deal with the Kabila clan in the amount of US$ 20 million, which the DRC president, Laurent-Désiré Kabila, then used to buy weapons for consolidating his newly acquired power. Nevertheless, in exchange, the government awarded him, through his company IDI, the monopoly over the DRC's juicy diamond trade (UN 2001). Gertler denied all allegations in the UN report. The president later ended the IDI's monopoly, which was catastrophic to the diamond trade in DRC.

4.2.2. US Department Of Justice

Gertler also appears prominently in the investigation report on Och-Ziff, one of the largest hedge funds in the world, managing a vast US$ 37 billion portfolio of assets. It was conducted by the US DOJ and the SEC in relation to the FCPA. It is particularly evidenced that as the Congolese partner of the hedge fund, he was decisive in the Och-Ziff's bribery scheme to consolidate DRC copper mines. He namely purchased shares in DRC mining companies on behalf of the fund, although the latter was aware that payments would be made to bribe high ranking Congolese officials, who would bring pressure to bear on rival companies, forcing them to relinquish their assets. In spite of this, the fund 'failed to implement and maintain controls to address known risks for corruption or misappropriation of company funds' Even more so, when such misuse surfaced, Och-Ziff 'conducted no review or audit to confirm or rebut the allegations, and thereafter advanced more than US$ 200 million to DRC Partner for additional transactions'. The DOJ's filing shows how, over a 10-year period, Och-Ziff's 'DRC Partner, together with others, paid more than one-hundred million U.S. dollars in bribes to DRC officials to obtain special access to and preferential prices for opportunities in the government-controlled mining sector' (RAID 2017).

Between March 2008 and February 2011, Och-Ziff entered into several DRC-related transactions with DRC Partners: (1) April 2008 DRC-focused mining company controlled by DRC Partner; (2) US$ 124 million convertible loan through a subsidiary company and AGC to a DRC Partner-controlled shell entity; and (3) has US$ 130 million margin loan (RAID 2017). For his reprehensible practices involving Dan Gertler, Och-Ziff was charged by the DOJ with conspiracy to violate the anti-bribery provisions of the FCPA on 29 September 2016.

4.2.3. Africa Progress Panel

The influential Swiss-based foundation, chaired in 2013 by former UN Secretary-General, Kofi Annan, was established to promote equitable and sustainable development for Africa. In its seminal report on equity in extractive industries, it discussed the paradox between the resource wealth and the human poverty in Africa and suggested that the commodity super-cycle should be used as an engine of growth, and improves the prospects of generations to come through efficient fiscal policy and increasing equitable public spending on infrastructure, health, education, water and sanitation. It also provided evidence for the poor state companies and concessions management in several African mining

countries. In the DRC, on five concession deals[47] between 2010 and 2012, investigations revealed that, estimated losses to the country were amounted to US$ 1.355 billion, which represents almost twice the nation's combined health and education budgets (APP 2013). Gertler categorically refuted the allegations in the 2013 report. In those deals, Gertler acted as intermediary and succeeded in winning cut-price mining licences and agreements. Glencore is involved in almost all the transactions that resulted in a significant loss for the DRC. It found root causes to such lost revenues to be associated with the opaque trading of mining concessions, epitomised by the DRC where the *"DRC's minerals sector has been plagued by a culture of secrecy, informal deals and allegations of corruption"* (APP 2013:55).

4.2.4. Panama Papers

On April 3, 2016, the ICIJ released results of an investigation made on 11.5 million leaked files from the offshore law firm, the Panamanian Mossack Fonseca. Some of these papers were related to Dan Gertler and indicated that from the GEC it formed in March 2005, he succeeded to form a joint copper and cobalt mining venture with GECAMINES, called Nikanor PLC. The holding company was incorporated in the Isle of Man as a joint venture contract between GECAMINES and a Canadian company First Quantum Minerals for the Kingamyambo Musonoi tailings copper project was revoked in 2010, and was sold to Highwinds Group, another offshore company owned by Gertler. Figure 6 shows the capital structure of the GECAMINES/Glencore's joint-venture in 2013 in which Gertler has played a critical role in order to help Glencore to finally secure the contract.

[47] The SMKK, Kolwezi project, Mutanda mine, Kansuki mine, and Sodifor.

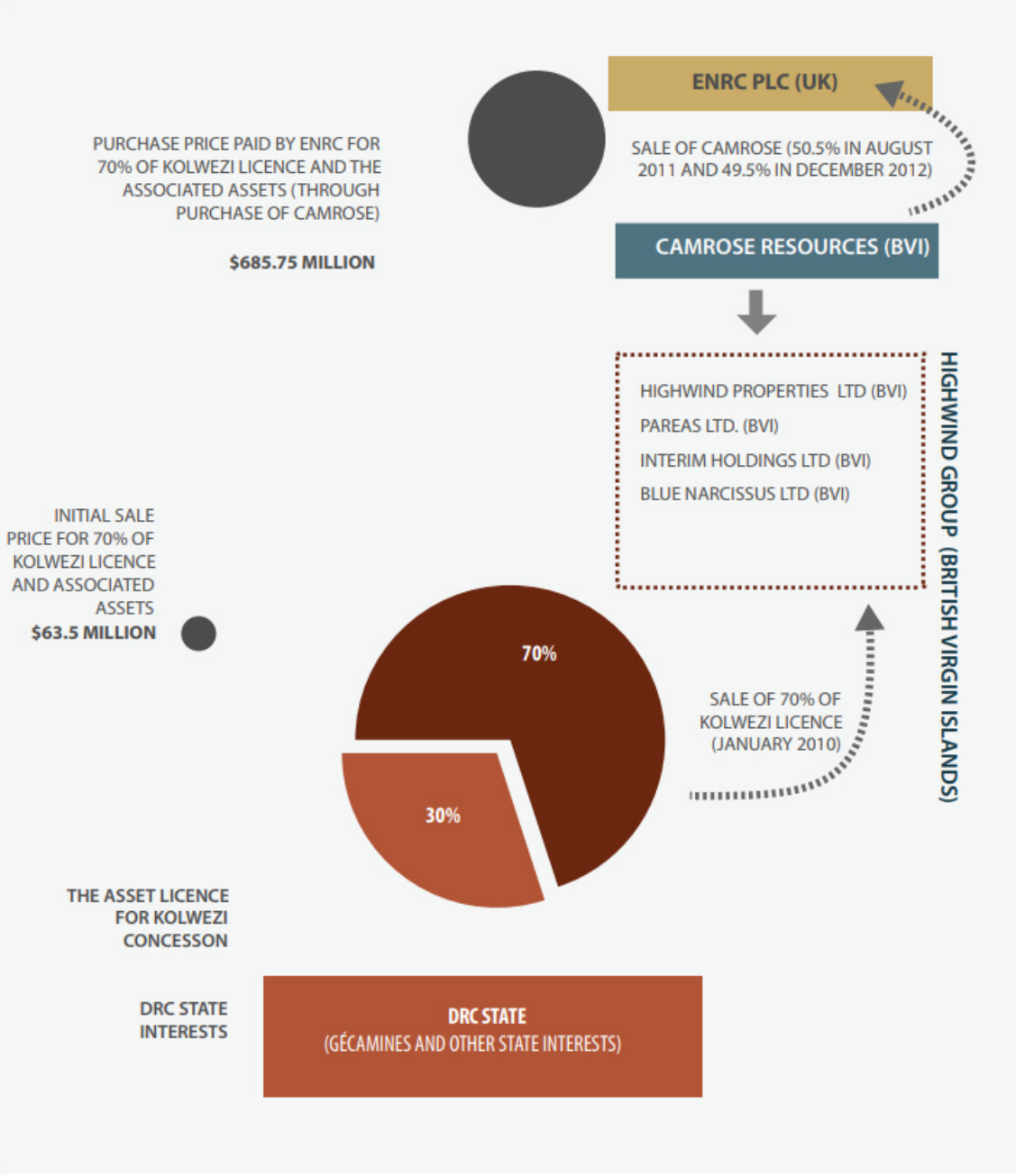

Figure 6: The capital structure of the Kolwezi Project (APP 2013:105)

After a lawsuit, *First Quantum* versus *Highwinds and Others*, subsequently recovered more than a billion dollars. Gertler of Dan Gertler Inc, who had ties to Joseph Kabila and his closest aide appears in more than 200 leaked documents. Despite the recommendation against it by the anti-corruption Lutundula Commission, the presidential decree ratified the agreement was issued.

The documents of firm Mossack Fonseca also revealed M. Gertler as owner of the two companies – registered in the British Virgin Islands, Caprikat and Foxwhelp –since 2010 holders of oil blocks on the Congolese part of Lake Albert. As soon as the two companies were recognized by the firm Mossack

Fonseca as being held by Gertler whom it described as *"a dealer in blood diamonds"*[48], it immediately stopped any collaboration with them.

It is the same who has been contracted on several occasions by Glencore in DRC. Gertler first won concessions to mine for diamonds in the DRC in the 90s. In 2001, a UN report alleged that he had arranged arms shipments to the central African country in return for winning a monopoly on the country's diamond trade. Gertler has strongly denied these allegations. In the end, he paid only US$ 3 million instead of US$ 20 million and never supplied military equipment. In 2009, Glencore, gave a secret US$ 45 million loan to Gertler's company after it enlisted him to secure a controversial mining agreement in the DRC in the KCC concessions[49]. In 2011, Reuters described in a Special report how Glencore and Dan Gertler have partnered in Nikanor from 2007 until its final merger with Katanga Mining[50]. Recent media reports state that Glencore has not only used regular means to operate in DRC. It has namely used on several occasions a sulphurous agent, and Dan Gertler benefited irregularly from some governmental favours. And they raise serious questions about the conduct of the commodities multinational Glencore and the mining billionaire in Africa. In February 2016, Glencore bought Gertler out of their shared assets in DRC for US$ 534 million, a move described as an attempt by the company to dissociate itself from Gertler.

4.3. Glencore in Paradise Papers

It runs the Katanga copper mine, at the centre of some of the documents revealed by in the Paradise Papers. More than 120,000 people and companies have been named in 13.4 million files following a massive data leak from an offshore law firm Appleby, called the 'Paradise Papers'. The documents have been obtained and reviewed by the German newspaper Süddeutsche Zeitung and more than 90 media partners across the globe under the banner of the ICIJ. They revealed the reality of the arcane world of offshore tax havens and global finance. More specifically on the Glencore case, they exposed that the way the Swiss firm was undertaking business in DRC was highly questionable[51]. Glencore contracted Appleby, one of the leading offshore investment firms, for handling transactions and management duties, and so was one of its biggest clients.

4.3.1. A problematic acquisition

The leaked documents shed more light on Glencore's dependence on the mining magnate Dan Gertler, a minority shareholder in Katanga, accused of using its closeness to the DRC president and bribes to win mining permits – Gertler has denied these allegations. This is how investigations purport to show that in 2008 the Katanga board gave Gertler an explicit mandate to negotiate with the DRC authorities to settle a disagreement about the size of royalties it was to pay the government. By 2009 Katanga was on its knees due to plummeting copper prices. Glencore, which then had an 8.5% stake, lent the company US$ 265 million, which could be converted into equity, giving it a majority holding. Some US$ 45 million of that loan, funnelled through Bermuda, financed a stake for Gertler – a deal first revealed in 2014. In 2013, around the time Glencore was finalising its US$ 46 billion merger with Xstrata, its fellow founding shareholder SwissMarine was arrested on charges relating to fraud, which were later

[48] http://www.rfi.fr/afrique/20160409-rdc-proches-president-joseph-kabila-panama-papers-jaynet-dan-gertler

[49] https://www.theguardian.com/business/2017/nov/05/the-inside-story-of-glencore-hidden-dealings-in-drc

[50] https://www.reuters.com/article/us-glencore/special-report-the-biggest-company-you-never-heard-of-idUSTRE71O1DC20110225?pageNumber=2

[51] http://www.telegraph.co.uk/business/2017/11/06/paradise-papers-put-glencores-secretive-business-spotlight/

dismissed, according to the Australian Financial Review. Documents further show that Glencore could have revoked the loan if Gertler failed to secure crucial agreements on mining licences and royalties.

Press reports have identified Gertler as the "Israeli businessman" who the US Securities and Exchange Commission alleged partnered with hedge fund Och-Ziff in a series of deals in the DRC. Based on investigations conducted by the OSC about KCC, US$ 100 million of payments that Katanga said in regulatory filings went to the DRC's state-backed mining company, appeared in fact to have ended up going to a company controlled by Gertler. The OSC declined to comment its decision on the request of the ICIJ investigators. In 2016, Och-Ziff paid a US$ 413 million fine to settle criminal and civil charges over paying bribes to African governments.

Glencore says the loan to Gertler was *"made on commercial terms negotiated at arm's length"*[52].

Gertler held just under 14% of Katanga before he was bought out by Glencore earlier this year. Glencore paid US$ 534 million to buy his stake in Katanga and another mine in the DRC[53].

4.3.2. Glencore's complicity in the funds evasion

As stipulated in the JVA, GECAMINES should levy royalties equate to 2.5% of turnover, and a signature bonus of US$ 140 million paid over several years. In the execution of this contract, GECAMINES as the 25% owner of KCC had signed away its rights to receive tens of millions of dollars of revenue from the KCC. It was made to a secretive shell company called Africa Horizons Investment Limited, based in the Cayman Islands, which ultimately belongs to Dan Gertler. Later it appeared in the EITI country report 2013 and 2014 that payments Glencore made to Gertler's company were reported as payments to GECAMINES. For its defence, Glencore stated it had acted in accordance with GECAMINES' instructions. On their parts, KCC and Gertler representatives alleged that GECAMINES' royalty rights were sold to Africa Horizons, which makes the transaction fully legal, even though none of them can provide any cost for that cession. However even if those royalty rights were adequately sold to Africa Horizons, the problem still persists, especially as soon as the EITI report acknowledges payments made to GECAMINES as beneficiary (Global Witness 2017).

In the 2015 EITI report, US$ 83.5 million in royalties and signature bonus payments in four transactions were paid to Gertler's company through a rather complicated channel. The sums were transferred from a KCC's bank account in Mauritius to an account in Gibraltar through a law firm (Hassans) frequently used by Gertler's companies for Africa Horizons. This time EITI asked GECAMINES what compensated the rights to the royalties Glencore directly paid to Africa Horizons and GECAMINES promised to publish its contract with Africa Horizons as soon as possible (Global Witness 2017).

4.3.3. A decisive intervention during the revision of Glencore's contract

When revising the mining contracts in DR Congo, the government demanded Glencore through its KML subsidiary to pay the sum of US$ 585 million in the form of "Pas-de-porte" and royalties. As the government seemed uncompromising on its request, Glencore used an intermediary deemed effective to change the mind of the Congolese government. That is why Dan Gertler, a friend of Congo's President Kabila and the president's mining adviser (Augustin Katumba Mwanke), stepped in and managed to negotiate this amount down to 1/4 of the initial amount (US$ 140 million). These secretive deals were struck with offshore companies which managed to get hold of mining licenses at knockdown prices. After

[52] https://www.icij.org/investigations/paradise-papers/glencore-responds-icijs-questions/

[53] https://www.bloomberg.com/news/articles/2017-02-13/glencore-said-to-agree-on-gertler-buyout-in-960-million-deal

first challenging the documents, the multinational finally resolved to pay US$ 400 million to the US court for settlement. In early 2017, after US revelations, Glencore bought Gertler's shares in the two Congolese mines in a US$ 1 billion buyout and therefore ending their decade-long partnership.

An US investigation into the Och-Ziff hedge fund unveiled documents in 2016 revealing that an American company was involved in corruptive practices in DRC. The privileged position of Gertler in DRC has served in several occasions and diverse mining players Mr Gertler, succeeded in depriving Congo DR from at least US$ 1.36 billion in five mining deals struck between 2010 and 2012.

4.4. Glencore's environmental impact on the mining region

Over the last decade of presence in the DRC's mining sector, besides corruptive practices which badly affected the country finance, additional negative impacts were recorded on the environment in the neighbouring communities living in the Katanga province.

4.4.1. Deforestation of Lower Kando Nature Reserve

The Basse-Kando Game and Nature Reserve is a 177 km² reserve partly occupied by the Mutanda Mining (MUMI) area where Glencore operates. Despite the Congolese Institute for Nature Conservation (ICCN), the conservation objectives failed to be implemented because strong mining operators succeeded to minimise the scope of this institution's action. Moreover, the ICCN also lacks basic means for its field operations in the region. In addition to deforestation caused by MUMI's operations, the concentration of the ore with sulfuric acid generates other problems on the environment. This is further exacerbated because of the nature conservation that is blocked by such Glencore's behaviours.

After having denied any responsibility for this situation and refusing to enter into an open and transparent dialogue with stake-holders, including the ICCN and the Ministry of the Environment for a certain time, it finally recognised the installations of MUMI.

As for the resulting environmental degradation, including deforestation, species extinction and pollution, they remain the exclusive heritage of the riparian communities whose traditional terroir it is, and on which they depend largely for their livelihoods.

4.4.2. Acid pollution in villages close to the factory

The environmental pollution has dramatic consequences for people who depend on nature for their daily needs (food, medicines, water for domestic use, etc.). While Glencore speaks of a minor leak of sludge that did not cause any casualties, local residents complain of the effects of pollution with sulfuric acid in rivers, fields and all elements of the river, as well as the entire ecosystem. Some animal and plant species have been faded out while others have become mummified. Moreover traces of lime are still visible on the spot as the testimony of the action taken by the company to annihilate the acid effects. The most explicit case is the pollution of the River Luilu, near the metallurgical plant. Though Glencore had invested in acid neutralisation systems and pipes to channel some of its effluent to an old quarry (Mupine), the hydro-metallurgical plant continued to discharge effluent that was highly contaminated with copper and cobalt into the River Luilu[54].

[54] https://www.swissinfo.ch/eng/congolese-copper_ngos-accuse-glencore-of-human-rights-violations/38800880

4.4.3. Offset/Compensation to people impacted by mining

The company has recently made compensation without ever referring to pollution. Some villagers were thus asked to leave the vicinity of the factory against a modest sum of money that the company paid to them.

4.4.4. Judicial police at KCC and MUMI

Glencore's relations with residents are strained. It resorts to the practice whereby its security staffs carry out the functions of judicial police at KCC and MUMI. Glencore appears to have adopted a military-style approach to protect its assets from incursions by artisanal miners, which heightens the risk of human rights violations. Glencore's approach is therefore open to abuse or the perception of abuse[55].

It is obvious that DD increases opportunities for conveying fairness in the mining sector, and is therefore a necessity in order to avoid unsustainable practices in the mining sector. Nevertheless, Glencore's story shows that DD alone cannot lead to sustainable mining and environmental protection in DRC. A company can perform well regarding the DD policy while being involved in unsustainable practices (financial, social, and environmental). The ultimate result of selling minerals that respect DD requirements would not be totally true when from the onset, tax avoidance, anonymous ownership, money laundry, etc. may have served to finance conflict minerals. Companies involved in the current efforts should clear their liabilities to make their involvement relevant to DD initiatives by repairing the damage to the countries where they mine.

Moreover, involving biggest corporations in the mining sector is not necessarily a guarantee against irregular behaviours. Certainly, a large part of such grievances happened in the past, even before the DD application in the MS. But at least it shows the opportunism that characterises private business entrepreneurs and the necessity to create a framework that contains/reduces such unlawful practices.

[55] https://www.swissinfo.ch/eng/congolese-copper_ngos-accuse-glencore-of-human-rights-violations/38800880

5. Map of the Main Players in the Mining and Metallurgical Sector in DRC

Many actors are involved in the development of the Congolese mining sector. As the focus has already been on private industrial players (investors), this section looks at the institutional structuring followed by information on the other no less important actors of the sector in order to have an overall configuration of the actors in the Congolese mineral sector along the segments of the value chain.

5.1. Institutional architecture

The structuring of the Congolese mining sector is based as much on an institutional base driven by state actors as on a multitude of non-state actors playing more or less decisive roles. Given the complexity of the institutional architecture involved in the mining sector, this chapter begins with a presentation of the state structure of the sector, and followed by other actors involved in the mineral value chain in DRC. Some observations emerging from this presentation will indicate ways for improving the structure of this sector.

While the Ministry of Mines plays a vital role in the Congolese mining sector, other ministries are equally important. But beyond the activity of the government, it is that of the presidency of the republic that is the most influential in the sector.

5.1.1. The Presidency of the Republic

The political regime instituted by the DR Congo constitution promulgated on February 18, 2006 has established a semi-presidential republic, with a separation of powers between the executive, legislative and judicial and a distribution of prerogatives between the central government and the provinces. The new constitution of 2011[56] has not affected that aspect. But in reality, the presidency still interferes in the government activities.

Thus, for example in the mining sector, the President of the Republic has the prerogatives to enact the mining regulations, classification, decommissioning, reclassification and reservation of mineral substances and zones as stated in Article 9 of the mining code. Similarly, the financial scandals involving the president of the republic (see chapter 3) also illustrate that the real power of decision is incumbent on the president. Investors must return to his good graces to conduct their activities in the country.

5.1.2. Government

The government is a major player in the mining sector. Through its sovereign roles – allocation of mining titles, flow monitoring, tax collector and user of mining revenues, promoter of the diversification of the economy, etc. but also of its equity investments in mining companies – that suppose a great responsibility on the part of the state. The government's mining policy is enforced by the ministry in charge of mines, but other ministries are also involved in the implementation of the policy.

5.1.2.1. Ministry of Mines

The institutional architecture of the Congolese mining sector is essentially based on the Ministry of Mines, which, for some issues, namely the granting of exploitation permits, must nevertheless refer to the Presidency of the Republic as referenced in the mining code. The ministry in charge of Mines is

[56] Law No. 11/002 of 20 January 2011 revising certain articles of the Constitution of the Democratic Republic of the Congo of 18 February 2006

responsible for implementing and enforcing the law within the mining sector, namely the granting, extension, withdrawal, and forfeiture of mining and quarry rights, the authorization of mineral exports in the raw state, the approval of the purchase counters (*Comptoirs d'achat*) of the products of the artisanal exploitation, the reservation of the deposits to be subjected to the call for tenders and the establishment of the zones of prohibition. In the artisanal subsector, the Minister is mainly involved in creating the ZEA, granting and withdrawing approvals to processing units, purchasing artisanal products.

The Ministry of Mines is organized at the central level by national services based in Kinshasa as well as deconcentrated services at the provincial level, which extend at the field level the responsibilities of the respective directorates at the central administration as illustrated in Figure 7.

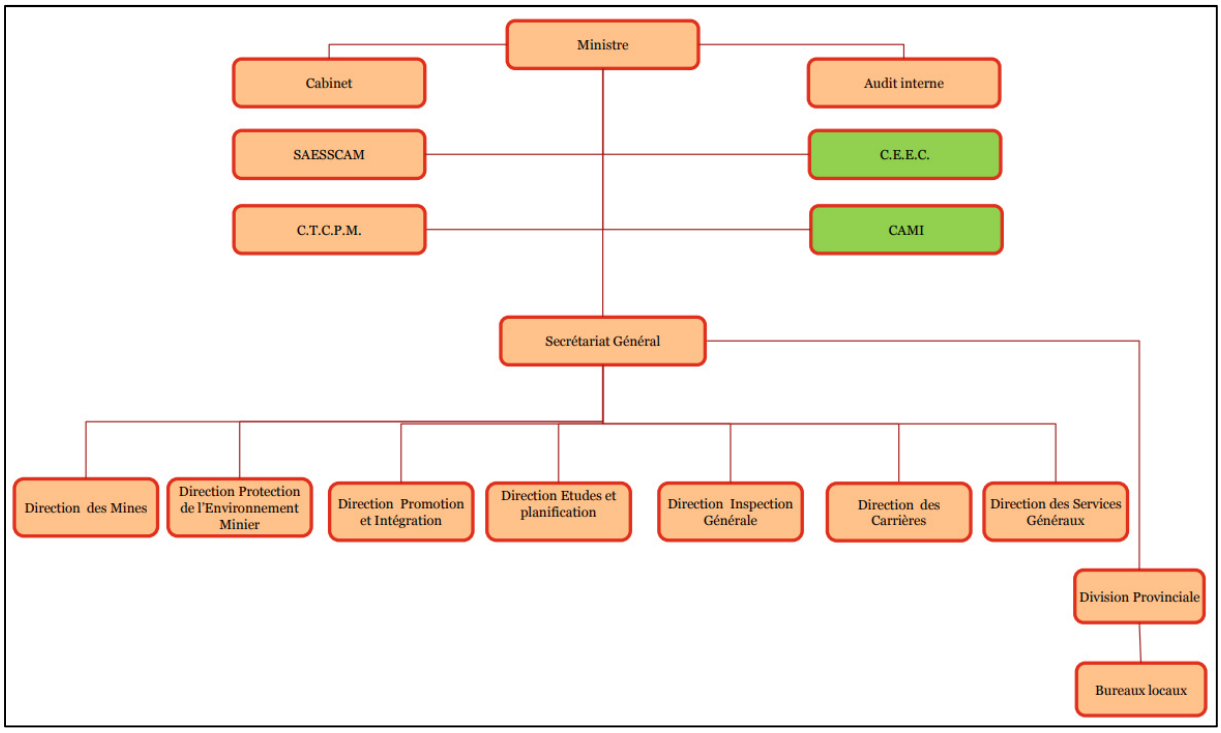

Figure 7: Organization chart of the Ministry of Mines (PROMINES 2013:22)

At the national level, some specialized directorates deal with specific missions. It is the case of the cadastre/land register, geology, mines, environment, coordination and certification. In the hierarchy of the mining administration, below the provincial divisions, there are also in the order of the urban offices, under which the district offices work as well as the mining antennas under the district offices.

5.1.2.2. Specialised services

SAESSCAM

The SAESSCAM[57] is a Public Service of a technical nature attached to the Ministry of Mines which has, inter alia, missions to clean up the artisanal mining sector and the small mine by providing assistance and supervision, with a view in particular to promoting the emergence of a Congolese middle class. It is also in charge of channelling the production of artisanal mining and small-scale mining to the official

[57] Presidential Decree n047-C / 2003 of March 28, 2003

marketing circuit to fight against the fraud of mineral substance and to maximize the revenues of the State.

CTCPM

The CTCPM is responsible for designing and adapting new techniques to improve artisanal mining. It also gathers all statistics on the production of artisanal mining, as well as compile and publish laws and regulations concerning the artisanal mining sector.

5.1.2.3. State owned establishments

CEEC

The CEEC[58] analyses, evaluates and certifies precious mineral substances, semi-precious mineral substances and coloured stones as well as precious and semi-precious metals and rare metals associated or not with major ferrous and non-ferrous metals in the DRC. The CEEC certifies the value, quantity and proper taxation of minerals prior to export. It provides technical support to *comptoirs*, traders and processors through the monitoring and control of mineral resources and financial flows. It is as well in charge of the fight against fraud. It implements and monitors the international program of the Kimberley Process, ICGLR Regional Certification Mechanism and was at the origin of the ITOA traceability scheme and contributes to it implementation.

CAMI

The Mining Cadastre registers applications for the granting, withdrawal, cancellation and forfeiture of mining rights and quarries, transfers, farm-out and mining sureties; cadastral instruction; certification of the minimum financial capacity of applicants for mining rights and research careers; the preservation of mining titles and quarries; and the regular maintenance of its registers and maps of mining fallouts according to a specific national cadastre open to public consultation covered in Article 12 of the Mining Code. In the artisanal mining, it is in charge of the registration of the ZEA in the national database; it also ensures that mining titles granted to mining companies do not encroach on ZEAs.

5.1.2.4. Directorates

The Directorate of Mines deals with the inspection and control of mining and quarrying activities in the areas of safety, hygiene, work practices, production, transportation, marketing and social issues. It is also responsible for compiling and publishing statistics and information on the production and marketing of mining and quarry products. The Directorate of Mines is the only authority to control and inspect industrial mining, small-scale mining and artisanal mining.

The Department responsible for the Protection of the Mining Environment elaborates and implements mining regulations with respect to the environmental protection in a larger sense, including in the artisanal mining. It is also responsible for the technical instruction of environmental assessment and management tools such as the Mitigation and Rehabilitation Program, the Environmental Management Plan and environmental audits, etc. submitted by applicants for mining and/or quarry rights.

The Geology Division is in charge of promoting the mining sector through basic geological research, compilation and publication of geological information, and the publication and dissemination of such information. It receives or claims the deposit of the control samples of any sample or batch of samples taken on the National Territory for analysis or test giving visa. It also opens and closes the ZEA.

[58] Decree n° 11/28 of June 07, 2011 fixing the statutes of a public establishment called Centre of Expertise, Evaluation and Certification of precious and semi-precious mineral substances, CEEC in acronym.

Provincial Mining Authorities

Head of Provincial Mines Division is concerned with the issuance of artisanal mining cards and the granting of search rights for quarry products and the exploitation of permanent or temporary quarries for commonly used building materials as consigned in Article 11 of the Mining Code. He monitors as well the compliance with the legal and regulatory texts in force in the realization of mining activities at the provincial level. Besides direct action, he also assists the provincial governor in fulfilling his missions. Within the provincial mines service, the 'Police des Mines' plays a critical role in the sector. With offices and staff, it oversees artisanal mining activity on the ground, which merely consists of guarding mining sites. Though the reality can be different on certain sites, the Mines Police is in principle the only Congolese security service with a presence at artisanal mining sites (EurAc 2017: 10).

5.1.2.5. Other Ministries

The Governor of Province is responsible for the issue of trading cards (*cartes de négociants*) of artisanal products according to the Article 11 of the Mining Code.

Ministry of the Portfolio

The State also participates in mining through companies whose administration and management of the State Portfolio is ensured by the Ministry of the Portfolio. Company Portfolio State (*Entreprise du Portefeuille de l'Etat*) is a company in which the state or any other legal person under public law holds an interest or the entire share capital. It controls 08 companies. These companies are Commercial Companies and the Group of Economic Interest, Private Legal Persons, and as such subject to commercial regulations and the common law tax system. GECAMINES, SOKIMO, SODIMICO, SCMK-Mn, COMINIERE, SAKIMA, MIBA and SACIM are some of these state companies. They have already been discussed above.

The bulk of the interventions outside the Ministry of Mines come under the Ministry of Finance, including treasury (**DGRAD/DRKAT**), taxes (**DGI**) and customs (**DGDA**). Collection and management of financial resources resulting from the mining sector are subject to the risk of misuse both at the local as at the national levels. To try to contain the losses and misappropriations, it was advocated by many actors on the ground for the introduction of a 'one-stop shop' in charge of collecting all taxes from the artisanal mining subsector (EurAc 2017).

Some other public entities in their areas of expertise are also involved in implementing the government's vision for sector development. It is the case of the **parliament** that initiates, votes and adopts laws and the **FARDC** that provides global security.

The DRC is governed by a semi presidential regime. This means that the president keeps the upper hand on the mining sector, and the government therefore depends on presidential instructions to conduct its daily actions. The opportunism of the leading governmental actors inclines them to concern themselves primarily with their direct interests as well as with that of the ruling apparatus that can go back to the presidency.

In addition to the sovereign role played by the State, other actors contribute to the extraction and concentration of ores as well as their marketing.

5.2. Other stakeholders involved in the DRC mining sector

Several actors presented in previous sections play an important role in the sector and, as such, are among the leading players in the Congolese mining sector. This section will quickly consider the

stakeholders already introduced above, and will offer more space to other non-state actors, especially the local communities and private sector, regional and international actors that are not yet covered.

5.2.1. Local communities

Mining usually takes place in remote rural areas. It can be located in or in the surroundings of villages. Local communities are therefore involved either by participating in the mining extraction and trade or by dealing with both negative and positive mining related impacts in their region. Diggers/*creuseurs*, mining cooperatives, traders/*négociants* and processing entities/*entités de traitement* and/or export house/*comptoir d'exportation* are the four categories of actors involved in the mineral supply chain (Figure 8).

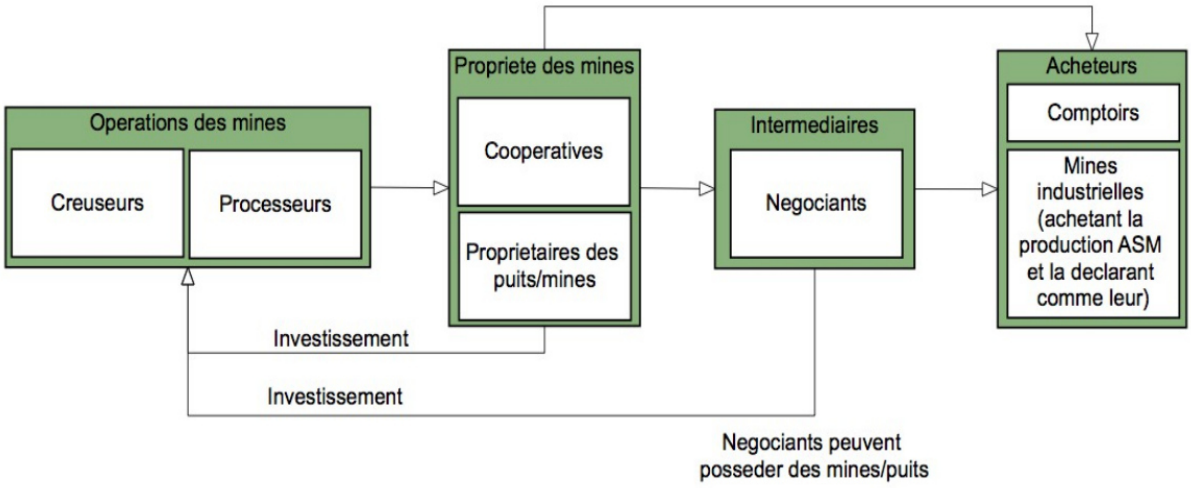

Figure 8: Actors involved in the ASM supply chain (ITIE 2015:21)

CREUSEURS

Gaining a legal access to the ASM activity requires the suitable artisanal mining authorizations. However, the reality is often different. In general terms, the cultural factor plays an important role in rural areas. Indeed, according to current practice, the conduct of traditional activities such as agriculture in particular, does not require any particular formality except the prior acquisition of a parcel of land when one does not own it customarily. To this customary principle is added the historical conditions of entry into activity on the mining licenses held by a failed state in the late 1980s[59] and the inefficiency of the system put in place to regulate this sub-sector (SAESSCAM)[60]. However, to access the market, the production of these craftsmen must comply with DDG standards, which in some cases forces them to acquire their card.

MINING COOPERATIVES

Artisanal miners are organized into cooperatives in order to be stronger, more legally recognised, while being subjected to cooperative regulations. 392 cooperatives were identified in 2014 (ITIE 2015), and some may exist solely on paper. In relation to the appraised value of 3T and gold, cooperatives contribute respectively the equivalent of 0.4% and 0.2% to the basket fund (EurAc 2017). Miner protests are a recurrent phenomenon which can result in mineral smuggling. Thus, the formation of cooperatives has sometimes heightened tensions between workers and operators of closed pipelines, because some

[59] See the section on informality in ASM for further details (Section 3.3)

[60] This topic is touched upon in section 2.2.

buyers and cooperatives wanted to buy minerals at fixed prices disregarding significant price fluctuations.

NÉGOCIANTS

Artisanal miners are required by the law to exclusively sell their production to *négociants*, *comptoirs d'exportation* or stock markets. The latter does not frequently happen and is not held by locals. There is a significant number transactions happening in the mining region and even in the neighbouring countries where part of the minerals produced in DRC can be smuggled. When the sales operations are carried out legally, the artisan miner goes to a *centres de négoces (*trading centre) where the production is exchanged against cash money. The trader/the buyer must be in possession of a *carte de négociant (trader's card),* issued by the Provincial Governor. Trading operations are supervised by State services (SAESSCAM and the Mines Division), which control operations, collect taxes, and issue official documents. 808 merchants were identified in 2013 and 771 merchants in 2014.

COMPTOIR D'EXPORTATION

The minerals thus collected by the *négociant* are in turn sold to a *comptoir d'exportation* officially approved by the authorities that are mostly based in the towns of Goma, Bukavu, Bunia, Butembo and Kalemie (EurAc 2017: 10). Export houses contribute 1.8 % of the export value, equivalent to US$ 180 per tonne of cassiterite and US$ 360 per tonne of coltan in North Kivu, for example.

For buyers and exporters, the citizenship criterion plays no role in the profession. However, the issuance of the professional card by the governor lies upon the presentation of a registration on the trade and credit registry.

5.2.2. Private entrepreneurs for the large scale mining

MINING OPERATORS[61]

Industrial mining operators are also legally involved in the trade of mineral products, and buy minerals from artisanal miners.

COMPTOIRS

The processing segment following the industrial extraction phase is reserved for the holders of authorizations while the purchase, sale and export of artisanal ores are subject to the holding of the authorization for opening of an approved *Comptoir*. These as well as processing units are authorized by the Minister in charge of mines. 22 *comptoirs* are identified in the DRC; among them is the Fair Congo, sarl with 99% of shares owned by US citizens with years of experience as impact investors. It is the first American owned company to be granted an export license for ASM gold in the country and the first and only exporter in the region to conform to the OECD DDG[62].

PROCESSING UNITS

While a *Comptoir* purchases artisanal mining substances from *négociants* or artisanal miners that will be resold locally or exported, a *processing unit* on its part carries out the mineral substance processing operations. The term *Comptoir* is used in connection with gold and diamond, just like *processing unit* is generally applied to 3T. In the eastern DRC, about 22 *comptoirs* and 42 processing units were active in 2014 (ITIE 2015).

[61] Section 1.4 provides additional information on mining operators in the DRC

[62] www.faircongo.com

ARMED GROUPS/TRAFFICKERS

Other civilian traffickers are also involved in commercial transactions. Armed groups for their part, seize, extract and market various minerals in the Eastern DRC.

5.2.3. Regional players

The DRC belongs to several regional organizations. But the most relevant is the ICGLR, which has been the scene of the Rwandan genocide (1994) and the Congo wars in the 1990s and early 2000s. It is now acknowledged that natural and especially mining resources have played a significant role in those conflicts. It is therefore an inter-governmental organization of the countries in the African GLR which resulted, in November 2004, from the necessity of its members to address the concerns of political instability and conflicts with a regional dimension and requiring the mutualisation of efforts. The ICGLR has endorsed the RINR[63] in December 2010 for challenging predatory and illicit practices that ultimately financed rebel groups with mineral revenues.

5.2.4. International partners

The Congolese mining sector depends on several donors or cooperation partners intervening at different aspects of the promotion of sustainability. These international actors include UN organizations, international financial institutions, bilateral donors, transnational actors such as development NGOs, junior and multinational mining companies, legal and illegal marketing networks. Since the last two have already been covered above, this section deals only with international NGOs, bilateral and multilateral partners active in the Congolese mining sector.

5.2.4.1. Bilateral and multilateral partners

Various partners such as the UNSC, IOM, OECD, WBG, USA, Canada, Australia, EU, Germany, Netherlands, UK have assisted the DRC government in the field of the governance promotion (good, or resource governance) in the mineral sector through bilateral or multilateral initiatives.

UNSC

The UN Security Council has adopted numerous resolutions including sanctions measures imposed by the UNSC[64] on the situation of conflict minerals in the DRC on the basis of the work of many rapporteurs. Each year, a news item on the DRC highlights among other things armed movements on the ground. The United Nations have also focused on peace keeping efforts and demilitarisation of 3TG mining sites.

IOM

It supports DRC in addressing many challenges related to migration with activities such as movement, emergency and post-conflict, migration health, migration and development, regulating migration, counter-trafficking[65]. It also undertakes the monitoring of human rights violations in remote mining areas by leading an independent data-gathering initiative that did not exist before a few years ago (Dranginis 2016). It currently runs projects in several mining provinces (South Kivu, North Kivu, Province Orientale, and Equateur).

[63] Further discussed in the section (6.5) related to certification schemes in the DRC

[64] http://dfat.gov.au/international-relations/security/sanctions/sanctions-regimes/congo/Pages/democratic-republic-of-the-congo.aspx

[65] https://www.iom.int/countries/democratic-republic-congo

OECD/ICGLR/UN

It maintains a technical partnership with the regional organisation, ICGLR, as well as with some of its individual member states to accompany the implementation of the due diligence guidelines (Musila 2016).

WBG

The World Bank Group assists the DRC in various fields including the mining sector where it provides a technical assistance grant for the governance to strengthen institutions and build capacity, EITI implementation, mining law revision, and rehabilitation of roads infrastructures and adduction of clean water, school building, etc. in eastern mining provinces[66]. The specific channel to support the DRC mining sector is the PROMINES Project, jointly supported with DFID. It aims to improve the good governance of the mining sector and increase its contribution to economic growth and sustainable development at various levels. The four project's components include strengthening basic arrangements for access to mineral resources and the sector management capacity, improving transparency and accountability as well as the sector management for a sustainable development[67].

USA/USAID

International legislation such as Dodd-Frank has aimed at increasing the accountability of end-users of minerals sourced from conflict areas. The government supports the enforcement of the law. USAID is currently supporting a project called the CBRMT[68] in the DRC focusing on thematic issues such as climate change and natural resource management, governance, conflict, and humanitarian assistance. Most specifically, its primary goal is to establish responsible supply chains such that international end users can purchase conflict-free 3TG from the DRC through supports to multiple due diligence and traceability systems[69]: With an approximate funding of US$ 14,700,000, the project started in 2014 and will close over the year 2018. It seeks to strengthen the capacity of the DRC and regional institutions namely through increased awareness, legal reform and implementation of responsible sourcing initiatives. The aims are to transparently regulate the trade in conflict minerals (3TG) in order to transform the region's minerals into economic growth and development, and increase end-user confidence in sourcing artisanal minerals from the DRC.

CANADA

Among other contributions, Canada provides financial support to IMPACT in order to implement projects. In 2016, the third largest Canadian mining assets in Africa amounted to US$ 3 billion is in the DRC[70]. Nevertheless, Canadian international assistance in the DRC is broader and includes the protecting of children from violence, threats from armed groups and other classic development assistance fields[71].

AUSTRALIA

Australia does not have a strong cooperation with DRC. Nevertheless, in the framework of its development assistance, it supports poverty reduction through more equitable access to the benefits of

[66] http://siteresources.worldbank.org/INTOGMC/Resources/336099-1156955107170/drcgrowthgovernanceenglish.pdf

[67] http://www.prominesrdc.cd/accueil.html#

[68] https://www.land-links.org/project/capacity-building-for-responsible-minerals-trade-democratic-republic-of-congo/

[69] https://www.land-links.org/project/capacity-building-for-responsible-minerals-trade-democratic-republic-of-congo/

[70] http://www.canadainternational.gc.ca/congo/bilateral_relations_bilaterales/canada_drc-rdc.aspx?lang=eng

[71] http://www.international.gc.ca/world-monde/issues_development-enjeux_developpement/priorities-priorites/where-ou/congo.aspx?lang=eng

inclusive and sustainable growth achieved through NGOs such as IMPACT. It is primarily focused on social and community development projects[72].

EU

From the 11th European Development Fund, the EU allocated 620 million euro in bilateral aid to the DRC over a period of 6 years (2014-2020), of which 26% (160 million) was dedicated to strengthening governance and the rule of law.

Moreover, the EU and some Member States, established a DRC Donor Coordination Group (Groupe de Coordination des Partenaires or GCP). It is made up of two multilateral partners (the EU and UNDP) and two bilateral partners (the UK and the US). More recently, Belgium and Germany joined the GCP Executive Committee. GIZ worked with local NGOs to support improved governance in the artisanal sector.

The EU has an action entitled "Promoting responsible supply chain in the area of conflict minerals (3TG)". This action is funded by the European Union of the Commission Implementing Decision on the annual action programme 2017 part 3 for the theme Human Development of the Global Public Goods and Challenges programme. Beneficiaries are located worldwide with emphasis on Africa's Great Lakes region. With a total estimated cost of € 9.4 million, the project is intended to support the private sector and CSO. The overall objective is to contribute to peace building, stabilisation, good governance, inclusive growth, sustainable development and poverty alleviation within mineral-rich fragile areas as well as peaceful coexistence between mineral resource extractors and affected communities.

GERMANY

Germany is one of the major contributors in the DRC mining sector with political, technical and financial support provided to DRC and respectively implemented by GIZ and BGR. Besides DD initiatives such as the AFP, CTC and electronic traceability, Germany accompanies the ASM formalisation. Beyond the mining-related support, its cooperation with DRC is large and diversified.

NETHERLANDS/EPRM

The EPRM was set up in May 2016 by the Dutch Government when it held the European Presidency. With regard to the promotion of responsible supply chain in the area of conflict minerals, the multi-stakeholder initiative (EPRM) that aims at making natural resource chains sustainable through investment in local mining areas with the support of the European public-private partnership that includes partners from government, the private sector and NGOs. It has a global scope, and is not restricted to 3TG. The EPRM serves as a knowledge platform for knowledge sharing on due diligence among stakeholders but supports activities to improve the conditions in mining areas in conflict-affected and high risk areas.

This action is relevant for the 2030 Agenda in the framework of accompanying measures to be implemented in the frame to the Regulation (EU) 2017/821 in the form of projects and programmes outside the EU to stimulate the sustainable development of mining in conflict and high risks areas with a specific focus to further develop local industry and communities. It contributes primarily to the progressive achievement of SDG 8 and SDG 12. Actions are oriented towards the sustainable livelihood within mining communities and beyond improved and negative socio-economic impact of ASM-related activities mitigated as well as creating an enabling business environment for ASM based on formalisation and certification. The funding scheme is based on members' contributions. At the moment,

[72] http://zimbabwe.embassy.gov.au/hare/cooperation.html

the Dutch Government and the other EPRM partners have already committed €4 million, but are considering reaching up to €5 million[73].

UK/DFID

United Kingdom through the DFID aims at assisting the DRC in the area of natural resources governance in order to increase the benefit for the population. Its support is specifically focused on the PROMINES project, EITI and the partnership with international mining companies[74].

Besides the state cooperation, private industry initiatives participate in the DRC mining sector. ITRI, Gold Council, and others have introduced due diligence practices for strengthening the chain of custody. Consumer electronics companies have almost exclusively been the only companies participating in these initiatives, though a few others are beginning to come on board[75]. Of the companies Apple, Google, HP, Intel, and Signet support one or all of these initiatives through participation in calls and committees (Callaway 2017). Similarly, some multi-stakeholder platforms also play a role in the DRC mineral supply chain. PPA, SfH, World Gold Council and RAGS are part of the group. The first two are covered below.

PPA

The multi-sector and multi-stakeholder initiative, the Public-Private Alliance for Responsible Minerals Trade (PPA), provides assistance in the form of funding and coordination support to organizations working to develop verifiable conformant supply chains; align chain-of-custody programs and practices; encourage responsible sourcing from the region; promote transparency; and bolster in-region civil society and governmental capacity. By accompanying such supply chain solutions, the PPA aims to promote responsible sourcing minerals in DRC and the African GLR.

SfH

It is a platform supporting multi-stakeholder initiatives involving companies, civil society organizations, and governments that collaboratively work to responsibly source minerals from regions affected by limited market access because of opaque supply chains[76].

5.2.4.2. NGO & research institutes

Civil society organisations (The Enough Project, IMPACT, PACT Congo, SAM, etc.) have supported the formalisation of ASM to enhance the capacity for due diligence, and addressed other training and capacity building requirements. Other local NGOs have worked with State agencies responsible for managing the artisanal sector to improve conditions and access to markets, and alternative livelihoods for artisanal miners (Callaway 2017).

Global Witness

Established in 1993, Global Witness is an international NGO committed against resource curse by breaking the links between natural resource exploitation, conflict, poverty, corruption, and human rights abuses worldwide. It started to expose the corrupt exploitation of Cambodian forests as well as international trade systems that follow. Since then, it has conducted investigations, published reports and advocacy campaigns to tackle the root causes of abuses in natural resources (diamonds, oil, timber, cocoa, gas, gold and other minerals) and also contributed to set up international initiatives such as the

[73] https://ec.europa.eu/europeaid/sites/devco/files/commission-implementing-decision_c2017_-_8725_-_annex_4_en.pdf

[74] http://www.oecd.org/countries/democraticrepublicofthecongo/40692153.pdf

[75] https://enoughproject.org/wp-content/uploads/2017/11/DemandTheSupply_EnoughProject_2017Rankings_final.pdf

[76] http://www.responsiblemineralsinitiative.org/training-and-resources/complementary-programs/

KPCS, EITI, and PWYP. On Dec. 2, 2011, Global Witness left the international certification scheme established to stop the trade in blood diamonds (Kimberley Process)[77]. The approach has been used in several countries including the DRC, which resulted in campaigns to end impunity, resource linked conflict, and human rights and environmental abuses[78].

It has revealed several secret deals and corruption in the Congolese mining sector. The Glencore case was first reported for the first time by Global Witness in 2014[79]. The latest report on Congo is the *'Regime Cash Machine'* published in 2017[80].

THE ENOUGH PROJECT

It is a US organisation that has launched the Raise Hope for Congo in 2008 which worked to build a constituency of activists to advocate for an end to the ongoing conflict in eastern Congo and helped transform the supply chains of the world's leading electronics companies to weed out conflict minerals and help build a conflict-free minerals trade in Congo[81]. It is also active in root cause of conflict in Congo, namely the grand corruption linked to violence that manifests in a system of violent kleptocracy through campaigns and reports on related topics.

IMPACT

It is a Canadian NGO supporting the improvement of the DRC ASM subsector. It also promoted a traceability initiative called 'Just Gold' (see 6.2.3).

IPIS

IPIS is a Belgian organisation with a geographic focus on sub-Saharan Africa and a thematic focus on natural resources, conflict motives of armed actors, business and human rights, and international arms transfers. It is an independent research institute committed to durable peace, sustainable development and the fulfilment of human rights. It provides tailored information, analysis and capacity enhancement to support those actors[82]. It has provided reports and detailed maps on the DRC mining sector.

PACT

PACT was founded in 1971 as a non-profit international development organization in USA. It is active in nearly 40 countries. In DRC, it has led monitoring, training and reporting activities for the iTSCi with local partners since 2010. Many other projects aimed to improve the ASM sector have been carried out for strengthening livelihood and market linkages, improving transparency in ASM taxation; and building positive relations between large-scale, industrial mining companies and ASM. It has implemented more than 20 mining-related projects with funding from mining industry (ITRI, Anglo Gold Ashanti, Anvil Mining, Freeport McMoRan, etc.), companies in the mineral supply chain (e.g., Boeing, Microsoft, General Electric, Qualcomm), and bilateral and multilateral donors including USAID, World Bank, UN Common Fund for Commodities, International Finance Corporation, EU, DFID, Dutch Ministry of Foreign Affairs, etc[83].

SAM

It is an NGO that deals with the whistleblowing mechanism in the Congolese mining sector. It receives and verifies claims of suspected trafficking, smuggling and fraud in 3TG mines in Ituri, Maniema,

[77] https://www.globalwitness.org/en/archive/global-witness-leaves-kimberley-process-calls-diamond-trade-be-held-accountable/

[78] https://www.globalwitness.org/en/about-us/

[79] https://www.globalwitness.org/en/campaigns/oil-gas-and-mining/congo-secret-sales/

[80] https://www.globalwitness.org/en-gb/campaigns/democratic-republic-congo/regime-cash-machine/

[81] https://enoughproject.org/about/past-campaigns/rhfc

[82] http://ipisresearch.be/ipis/wat-doen/

[83] http://www.pactworld.org/itsci

Tanganyika, North and South Kivu and across supply chains. It reports to appropriate authorities that can take actions. In the conduct of its activities, it maintains partnerships with many organizations including PPA, PACT, Resolve, etc[84].

As a result, there is a multiplicity of stakeholders along the mining chain. The decisive ones are civil servants including those at the presidency, investors, armed groups, standards agencies, speculators. The number of actors involved on the same issue in the mining sector complicates transparency of processes as well as lowers the speed of processing. Ultimately, it makes it difficult to manage the sector as a whole. It is therefore important to bring the actors together, while at the same time obliging them to be very accountable both to the government and to the Congolese social body in general.

[84] http://www.resolv.org/site-ppa/files/2015/11/PRESENTATION-SYSTE-DALERTE-RAPIDE-DE-SAVE-ACT-MINE.pdf

6. Due Diligence and other Initiatives related to Responsible Mining in DRC

The Congolese mining context offers favourable conditions for undertaking DD initiatives. On the one hand the country has a mineral-rich profile, where the risks of diversion are greater in the artisanal and semi-artisanal mining operations. On the other, a permanent state of conflicts for twenty years in all or part of the country with intensity that constantly fluctuates, mining smuggling, child labour, etc. are additional ingredients justifying the necessity for undertaking specific initiatives to address such issues along the mineral supply chain. As such, it is a fertile ground for experimenting with several DD initiatives, of which many have also been created.

While it is widely acknowledged that resources in the DRC have been used to finance rebel armed groups and even the FARDC and their emanations, on the one hand, opinions are rather diverse as to the alleged role of these resources in the prevailing instability in the DRC on the other. Looters take whatever they find such as natural resources of agro-pastoral, forest, mining origins, etc. although a large fixation is being specifically made on the mineral resources. Anyway, failing to directly stop the ongoing conflicts in the country by various initiatives, beside these, other indirect initiatives were aimed at breaking the access of the armed groups to mineral resources, promoting only the trade of mineral substances free from all contamination with the wars, thus limiting the possibilities of financing the armed groups by the mineral resources.

To try to break the link between rebellions and their resource funding, several initiatives have been promoted by NGOs, multilateral organizations, trade associations, industries and national governments. They also have a spectrum of variable spatial and thematic coverage, some being very localized and some continental, or even global. Some are specialized on a single resource and other multi-resources applying to all conflict minerals or even all extractive industries. This chapter aims to provide a summary of such initiatives, highlighting the most important of them, and in particular the challenges that their implementation still poses today.

With very little exceptions (KCPS, CTC) that pre-exist to OECD, those mechanisms are mainly philosophically inspired by the OECD guidance. The many initiatives to ensure that minerals are not used to finance wars can be grouped into 3 major groups, namely certification, traceability and due diligence. They include each of the specificities that will be detailed below, but are all complementary to each other to create a robust system for fighting the problem of conflict minerals. The DRC has a particular profile as it is rich in minerals on the one hand, and on the other, it is subject to ongoing conflicts but whose intensity is variable in time during the past two decades in all or part of the country. The DRC is the fertile ground for the experimentation of several initiatives, many of which have also been created.

The conflict minerals in DRC are an issue of international concern. It has been the subject of several reports and studies, including from the UN. One of these reports[85] emphasizes connections between the illegal exploitation of natural resources and trafficking in raw materials and arms in the context of the continuing conflict. Following the report, the UNSC made a statement and urged:

> *"all States concerned, especially those in the region, to take the appropriate steps to end these illegal activities, by proceeding with their own investigations, on the basis, in particular, of information and documentation accumulated by the Panel during its work and forwarded to governments, including through judicial means where possible, and, if necessary, to report to the Council. [The Security Council also encouraged] "States, trade-sector organizations and*

[85] of the Panel of Experts on the Illegal Exploitation of Natural Resources and Other Forms of Wealth in the DRC

> *specialized bodies to monitor the trade in raw materials from the region in order to put an end to the plundering of natural resources in the Democratic Republic of the Congo, particularly within the framework of the Kimberley process"* (UNSC 2003:1)[86].

In response to the United Nations' call, some states have adopted particularly timid measures. In Uganda, for example, a judicial commission of inquiry set up for this purpose exonerated the president of the republic, and accused two army generals of looting in association with businessmen. Their symbolic sanction was a simple assignment without legal proceedings. As for Rwanda, which saw in this report an attack on the reputation of the country, it denounced it and set up however a commission of judicial investigation of which neither a decision nor action followed. With regard to DR Congo, after examining the recriminations against certain dignitaries of the country, and recommended legal proceedings, which also remained unfulfilled as in Rwanda. Some European governments such as UK and Belgium took actions with no particular brilliance. Financial institutions showed indifference, even denial of the reality of looting, often merely boasting about the managerial prowess of Uganda and Rwanda (Tougas 2016).

The Security Council came back in its 2009 report mentioning there was a pressing need to engage more efficiently with the issue of conflict minerals and suggests therefore the Guidelines to establish a Due Diligence System for the DRC. This approach was a step forward for a former proposal of the OECD Development Assistance Committee (DAC) formulated in 2003 following the report of the UN Panel of Experts. Developed through a multi-stakeholder process that has included the ICGLR, the OECD, and the UN Group of Experts, a DDG for companies sourcing minerals from Conflict-Affected and High-Risk Areas, the UNSC Resolution 1952 supported taking forward the Due Diligence recommendations contained in the final report of the UN Group of Experts, in response to long-term evidence of links between armed conflict and human rights abuses in the eastern DRC and the 3TG trade. The UN Security Council Resolutions and the OECD DDG for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas were designed to be mutually consistent.

In 2011, UN Human Rights Council unanimously endorsed the "United Nations Guiding Principles on Business and Human Rights", the first corporate human rights responsibility framework supported globally. It states among other things that companies have a responsibility to make sure their activities do not fund harm and abuses. This risk-based DD was therefore recommended as a practical and effective way for companies to meet this responsibility. That very same year, the OECD issued guidelines on conflict minerals for its members, known as the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas, and considered as the international benchmark for supply chain DD.

6.1. Due Diligence

The concept of 'due diligence' means acting with reasonable care and investigating an issue before making a decision[87]. It is the OECD DDG process through which any company involved in supply chains ensures not to resort to minerals that have financed armed groups or supported abuses. This is a methodology whose implementation makes it possible to gradually strengthen the management systems of companies, in particular by establishing a system for monitoring minerals from their original mine. This requires each stakeholder in the mineral supply chain to be much more responsible than opportunistic. For a company committed to DD, assessing the likelihood that their sourcing of raw materials could be financing conflict or mined using forced labour is just an initial condition in the supply

[86] https://www.un.org/press/en/2004/sc7976.doc.htm

[87] http://ec.europa.eu/trade/policy/in-focus/conflict-minerals-regulation/regulation-explained/

process. As a consequence, to avoid helping the funding of conflicts, the company must reject parcel of minerals tainted with blood and disrespect for human rights, and only engage in transactions that do not benefit armed rebel groups and spur human rights violations, acquire those that promote and respect legal requirements.

6.1.1. OECD DDG

The main philosophical and technical initiative specifically addressing the issue of conflict minerals is the OECD DDG. Companies are invited to trace how minerals are being extracted, transported, manufactured and sold by providing clear, practical guidance for companies to ensure they do not contribute to conflict or human rights abuses through their mining activities with a five-step risk-based DD process including:

- establish strong company management systems,
- identify and assess risks in the supply chain,
- design and implement a strategy to respond to identified risks,
- carry out an independent third-party audit of supply chain due diligence,
- report annually on supply chain due diligence.

This applies to all companies in the mineral supply chain that could potentially use minerals from conflict affected or high-risk areas, including preproduction exploration activities. The updated edition now clarifies that the Guidance provides a framework for detailed due diligence as a basis for responsible supply chain management not only for the 3TG, but for all minerals. The Guidance is not legally binding, it is an important tool for *naming and shaming* companies that do not follow its requirements. Human Rights Groups at OECD that are concerned with the practical implementation of the framework by states and companies called for a mandatory DD on Minerals, because the prevailing model does not significantly improve the ban on conflict minerals.

The OECD DDG has received global support including political, industry and consumer, as well as further legislators largely inspired and following similar patterns. G8, UN Security Council resolutions on DRC and Ivory Coast, ICGLR Heads of States, OECD council recommendation, EU Parliament, and China-OECD Programme of Work are some of the political supports received by the initiative to promote the DD. Other players involved in the mineral value chain, such as manufacturers in the electronics, automotive, aerospace, etc. on the one hand, and consumer campaigns and civil society (Amnesty International, Global Witness, Human Rights Watch, etc.) on the other hand. Further support took the shape of regulations. From the experience of the global initiative (OECD) recognized by 35 member countries, some governments (Canada, China, EU, USA, and some ICGLR countries) have made a specific regulation to address the issue of conflict minerals. The US initiative will be discussed separately in a section below because of the ripple effect that its entry into force gave the issue of DD to take on an importance never known before.

6.1.2. Dodd-Frank Wall Street Reform and Consumer Act (DFA)

In 2010, the US passed legislation on conflict minerals requiring DD to be carried out on four minerals sourced from the DRC and adjoining countries. The Section 1502 of the DFA also known as the ‘conflict minerals provision’, is a ground-breaking piece of legislation aimed at disrupting the finances flowing to armed groups in eastern parts of Congo from the trade in precious minerals by promoting responsible sourcing. It requires from the U.S. State Department to produce a “Conflict Minerals Map” that will be made public and updated every 180 days to show “mineral-rich zones, trade routes, and areas under

the control of armed groups in the DRC and adjoining countries", also known as "Conflict Zone Mines" (Bayer & Hudson 2017).

Under the regulation,

> *"all companies registered with the SEC that sold products containing gold, tantalum, tin, or tungsten were required to disclose whether these minerals originated from Congo (Kinshasa) or adjoining countries. Companies that sold products containing gold, tantalum, tin, or tungsten that originated in Congo (Kinshasa) or adjoining countries were also required to submit annual reports to the SEC describing the due diligence measures taken to determine the source and custody of such minerals and to provide a description of the products manufactured or contracted to be manufactured that were not conflict free. The reports also were required to be published on the companies' websites"* (Yager 2017: 1).

According to the terms of this law, all US-listed companies must report annually to the SEC on their efforts to ensure the minerals in their products are sourced responsibly. In August 2012, the adoption of final rules for the implementation of the DFA included endorsement of the OECD DDG as a credible standard for compliance with the law, and initial reports under the provision were filed in May 2014. Global Witness and Amnesty International analysed the first set of submissions by companies reporting under Section 1502 in 2015, and found that 79% of the companies surveyed were not yet meeting the minimum requirements of the law. Although some companies have made significant strides since then, many companies still have much more work to do[88]. In the DRC, however, the entry into force of the DFA had positive effects. Since it is a prerequisite for maintaining continued access to the world market, the DFA has provoked a shift in attitudes to DD from one of scepticism towards growing engagement (OECD 2015).

Discussions on a potential repealing of the DFA are ongoing within the United States Government. In February 2017, in a series of executive orders, President Trump showed its intention to roll back legislation. He was first concerned with elements requiring energy and mineral resource companies to hold U.S. companies accountable for the use of conflict minerals in their products, as well as publicly disclosing payments to governments for extraction rights in order to repatriate jobs to America by making companies more competitive[89]. At the moment there is less clarity about the section concerned with traceability requirements whether it will be maintained or not. In reaction, Congolese NGOs, namely the ASADHO and SARW have protested what they qualified as a step back that would jeopardize the progress achieved with the implementation of DFA.

Several countries including DRC, Rwanda, and Uganda have passed laws requiring companies to check their supply chains. In the DRC, the Presidential mining suspension imposed between 9 September 2010 and 10 March 2011 on the ASM production in response to growing international pressure, created a difficult environment for the initial implementation of due diligence on the ground by stifling the legal trade[90].

6.1.3. Other CMRs

Canada's Conflict Minerals Bill is described as an Act respecting corporate practices relating to the extraction, processing, purchase, trade and use of conflict minerals from the GLR. This bill was last introduced in the 41st Parliament, 2nd Session, which ended in August 2015. Unfortunately, the bill was

[88] https://www.globalwitness.org/en-gb/campaigns/conflict-minerals/dodd-frank-act/

[89] https://www.carnegiecouncil.org/publications/ethics_online/impact-of-dodd-frank-and-international-legislation-on-congolese-extractive-industry

[90] https://mneguidelines.oecd.org/Mineral-Supply-Chains-DRC-Due-Diligence-Report.pdf

not adopted, despite the sounded provisions based on the disclosure of Canadian companies' financial activities, including supply chains, in respect to the extraction, process, and trade of minerals such as 3TG, in the ICGLR as a whole, with no particular countries singled out like in the case of DFA. Those companies are called to exercise due diligence in respect of the exploitation and trading of designated minerals originating in the GLR in seeking to ensure that no armed rebel organization or criminal entity or public or private security force that is engaged in illegal activities or serious human rights abuses has benefited from any transaction involving such minerals[91]. It also takes on a more consumer-based approach in combating the issue of conflict minerals, in which government regulations are put in place to bring greater transparency for domestic choices. The bill is fully aligned with the OECD DDG. Because it was defeated, as of Sept. 24, 2014, this bill did not become law.

Unwilling to align with Western regulations, China has recently developed its own conflict minerals guidelines based on the OECD Guidance and launched on 2 December 2015 at a workshop in Beijing under the auspices of the CCCMC. The objectives are to operationalize and provide detail to Chinese Guidelines for Social Responsibility in Outbound Mining Investments, namely by providing guidance to all Chinese companies which are extracting and/or are using minerals to identify, prevent and mitigate their risks of contributing to conflict, serious human rights abuses and risks of serious misconduct, as well as to observe the UN Guiding Principles on Business and Human Rights during the entire life-cycle of the mining project[92].

A new EU CMR[93] on the responsible sourcing of minerals originating from conflict-affected and high-risk areas – drawn up by experts at the OECD, a group of 35 developed countries, in collaboration with industry, civil society and other governments – will come into full force across the EU on 1st January 2021 with the aim of helping stemming the trade in 3TG, which happen sometimes to finance armed conflicts or are mined using forced labour. It is an EU system for DD self-certification across the supply chain provided to responsible importers. To help minimising the risks of financing armed groups, each importer should follow the OECD five-step framework.

In addition, some other relevant legislation related to forced labour and child labour in UK and USA exist and can support the fight against conflict minerals. Breaking the links and ensure companies are sourcing their raw materials responsibly may not end these conflicts by itself, nevertheless depriving some groups of the revenues they need to keep fighting as well as the economic incentive to keep doing so contribute to conflicts and human rights violations. However, Asia has increasingly become the main destination for DRC minerals. Except from China that has adopted its DD applicable to companies operating in conflict zones, – it does not do so at the expense of its companies that are so often state-owned – no other Asian initiative has been taken in that regard. Consequently, some parcel of ore could quite find opportunities there.

The due diligence process by which every company involved in the supply chain introduces a system for verifying the origin of minerals and mitigating risks of using minerals that have contributed to financing armed groups or violating human rights. Some practical tools or initiatives such as certification and traceability help to efficiently perform the DD process.

[91] Bill C-486 http://www.parl.ca/DocumentViewer/en/41-2/bill/C-486/first-reading/page-33#3

[92] Chinese Due Diligence Guidelines for Responsible Mineral Supply Chains that can be accessed online here http://www.cccmc.org.cn/docs/2016-05/20160503161408153738.pdf

[93] Regulation (EU) 2017/821 of the European Parliament and of the council of 17 May 2017 laying down supply chain due diligence obligations for Union importers of tin, tantalum and tungsten, their ores, and gold originating from conflict-affected and high-risk areas.

6.2. Traceability

Traceability involves moving up the mineral supply chain from the production sites to the production of the finished product through the various intermediaries involved in exporting, marketing and processing at various stages of the product for checking whether a given mineral is not associated with armed groups and human rights abuses. Stakeholders in the upstream segment extract, concentrate, and export to smelters, while downstream stakeholders are manufacturers buying and using them in the fabrication of various finished products for end-users such as jewellery for the gold, electronic components for the 3T.

The traceability scheme happening in the DRC goes from the mine of origin to export, and involved several players that have developed traceability initiatives. iTSCi and BSP are the main schemes used for tracing 3T whilst ITOA, Just Gold are specialised on the gold value chain.

6.2.1. iTSCi

The iTSCi is a Tin Supply Chain Initiative proposed in 2009 to improve the traceability of cassiterite sourced in eastern DRC by a UK-based trade consortium representing in particular the key tin smelting companies and therefore a major player in the global tin market, the ITRI. ITRI members are located in more than 40 countries, and include more than 30 smelters of 3T minerals, more than half of which are in Asia[94]. It is funded either by member company investments or donor funders, specifically the DBSA and the MFA of Netherlands. They are requested to recognise all aspects of these guidelines and cooperate with monitoring, evaluation and audits as required, as well as working on their own company policies and contracts to influence the supply chain in a positive way.

It is a voluntary private sector initiative designed for addressing concerns over conflict minerals and launched a small pilot project in South Kivu in eastern DRC in 2010, before being gradually extended to other provinces of the DRC and other countries to the large scale with the current formalised structure as from April 2011. It is made up of strict membership standards, audits, basic mine studies, mineral tracking, data analysis and incident monitoring (Musila 2016). It is implemented by the American NGO PACT and its local partners including local Governments and their field agents that assists companies to establish due diligence through independent monitoring on the ground and regular audits and manage the day-to-day operations on the ground.

In a more concrete way, bags of tin are tagged with a specific code that is unique. When that bag goes to the next stage of the supply chain, it is recorded again until finally it is exported linked to a unique export number[95] as shown on the iTSCi traceability scheme process (Figure 9).

[94] http://www.itsci.org/purpose/#results

[95] https://www.chainpoint.com/use-cases/traceability-in-tin-supply-chain/

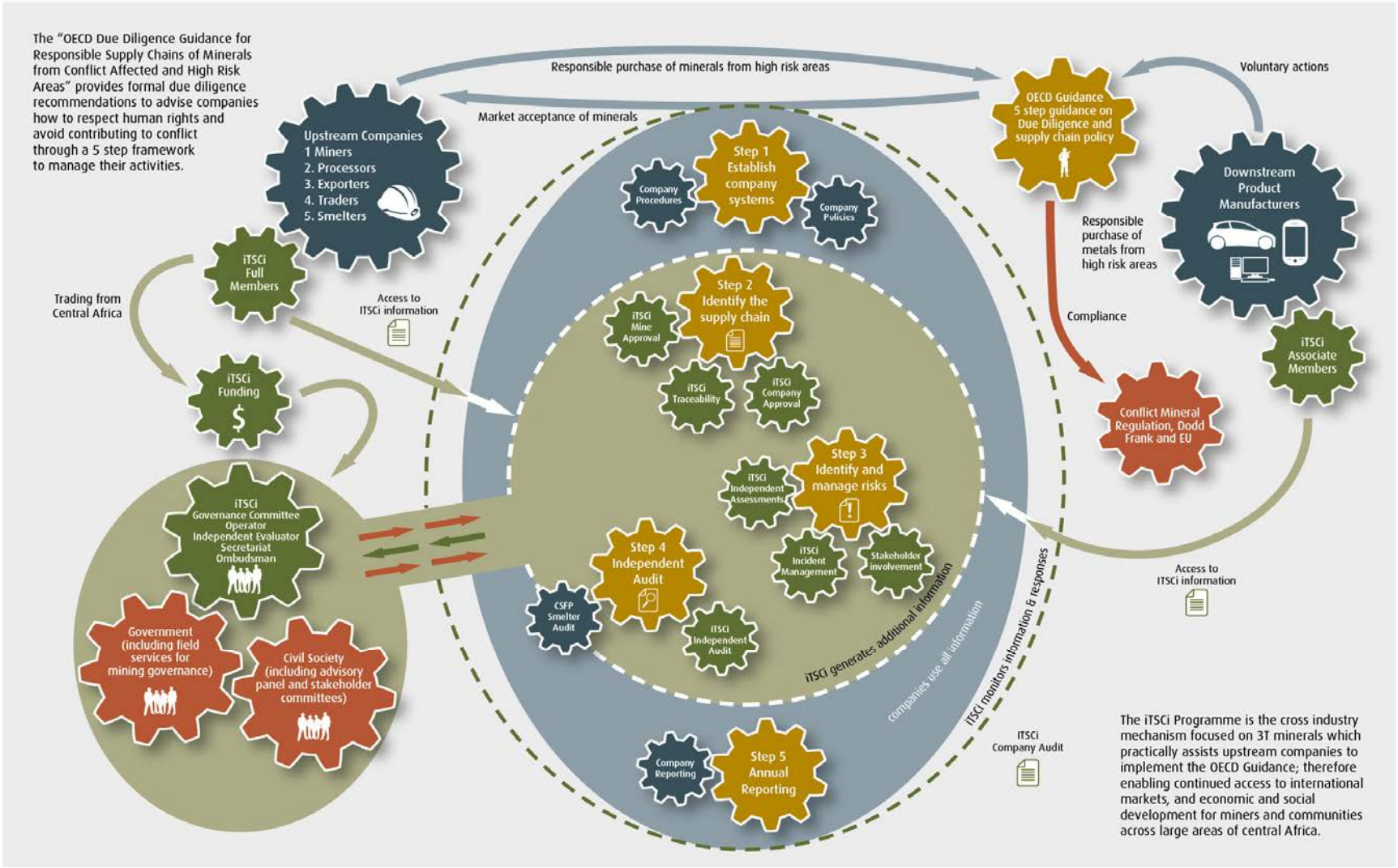

Figure 9: iTSCi traceability and DD programme for 3T (www.itsci.org)

The very first step is to assess whether mines and mineral transport routes are conflict free, before performing the iTSCi 'bag and tag' method. It consists of the implementation of a tagging system for bags of 3T minerals. The system requires each bag of minerals produced in the mine to be weighed and provided with a tag with a bar code by a government official enabling the mine of origin to be identified, integrated into the iTSCi system and opening up the traceability process. From the mining site, the ore is transported to a *comptoir* where buyers undertake further processes to achieve better quality. To avoid the risk of smuggling that may occur during transport, the minerals are weighed again, re-bagged and re-tagged. From the *comptoir to* export point, each new legal intermediary (buyer, including the exporter) will be subject to the same re-weighing, re-bagging and re-tagging by a government official to ensure that no infiltration occurred across the chain of custody. Minerals are processed and stored in large containers appropriate for export (steel gallon drums, large bags, etc.). The exporting companies delivered minerals to their processing plant with their tags and all legal documentation required by national authorities. Before processing the ore into metal, the smelter must record its own data, verify and confirm the concordance of the documentary information and the shipment of minerals received. Tags and documentation must be stored for audit purposes[96].

Its activities started in March 2011 in the Katanga Province in order to support the Government efforts in meeting end users' requirements under the DFA. The system is implemented in close collaboration with mining authorities, local companies and civil society. By the end of 2014, 232 mine sites were covered by iTSCI in Katanga Province, of which 144 were active (ITRI 2015). In more than 400 mines approved by the iTSCi, more than 40,000 Congolese miners made a living working in 2015, while at least 88 companies have joined the system as full or provisional members. In 2017, the scale of the iTSCi Programme significantly expanded to cover 860 monitored sites in four provinces (Katanga[97], Maniema, South Kivu and North Kivu), of which 485 sites were active in September 2017. The initiative ships 1,367.7 tonnes of minerals per month, and involves 38,093 miners, who in turn provide support for approximately 178,560 dependents (iTSCi 2017b).

PACT and civil society organizations monitored the entire 'bag and tag' system. In case of incidents occurring across the supply chain, they are recorded, mitigated to comply with national and international regulations. Risk incident monitored include the DD, chain of custody, corruption, security, human rights. 07 provincial committees, 24 local committees as well as 14 sub-committees are established at different levels as frameworks for local consultation and mitigation facilitated by iTSCi. Besides the NGO PACT, other NGOs participated in the full implementation of the iTSCi scheme. Committees were created and trained in traceability issues to act as a warning system on related matters by the OGP in North and South Kivu. Likewise, the NGO SAM established in Congo in 2012 has taken its role in the implementation of the ICGLR's whistle-blowing scheme, namely through a fraud line for reports on illegal practices in the mining sector, and the piloting of local surveillance committees, amongst other things. The programme is not devoid of any flaws or growing pains. As an illustration, a local NGO (SAM) has reported 83 incidents from August to November 2015 as a result of investigations conducted on incidents reported by whistle-blowers across the mineral supply chain. 71% were recorded in the operating areas of 3T and 29% in the gold mining areas[98]. Military FARDC officers were directly involved in most of denounced cases.

Moreover, as depicted, iTSCi records and manages incidents across mine sites, transport routes, including those provided by NGOs such as SAM and GATT-RN (Figure 10).

[96] http://www.pactworld.org/itsci

[97] Katanga is now split in four different provinces (Haut Lomami, Haut Katanga, Tanganyika and Lualaba) following a restructuring of provinces in the DRC.

[98] http://www.resolv.org/site-ppa/files/2015/11/Rapport-interimaire-projet-SAM-PPA-version-anglaise.pdf

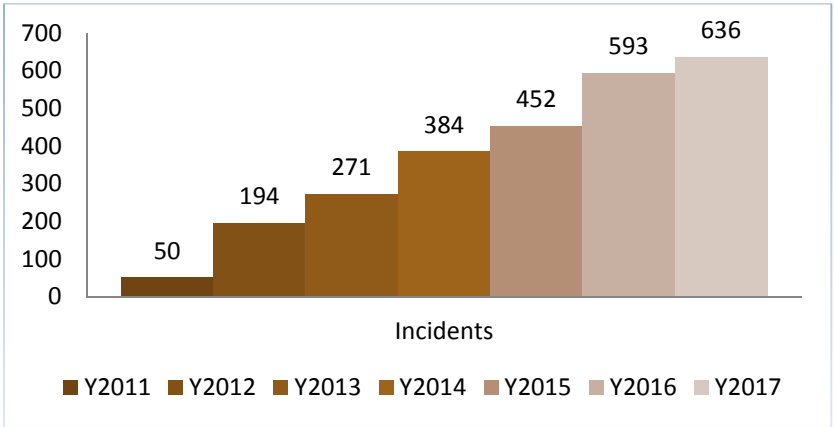

Figure 10: Evolution of incidents recorded in DRC by iTSCi (iTSCi 2017a & 2017b)

In 2016, iTSCi recorded 593 incidents in DRC over a total of 916 incidents[99], of which 324 were resolved by year's end (Callaway 2017). During the early years, the majority of serious Level 1 was mainly recorded in Katanga because of the security issue (iTSCi 2017a). In 2017, a total number of 636 incidents were reported, with 374 in North and South Kivu, and more than the half reported incidents was still unsolved/opened by the end of 2017 (iTSCi 2017b). After years of company and NGO pressure, iTSCi started publishing the reports of the local multi-stakeholder committees in eastern Congo to enhance transparency in their traceability system, allowing therefore companies to become able to follow up on any concerns reported in the committees' accounts.

As the Programme's third party auditing company, Synergy Global Consulting Ltd is in charge of performing independent audits, comprising of preliminary audits, field governance assessments and company audits, which are carried out each year on all supply chain operators, mine sites and the iTSCi programme. Companies can use this information to regularly check on suppliers and customers and manage risks (OECD 2015).

The UN Group of Experts' report provides some concrete examples of shortcomings found in the implementation of the iTSCi traceability system in the DRC, which can affect the credibility of the whole scheme if they lead to the smuggling of minerals from outside the chain of custody into the legal trading circuit. Concerns include among others:

- *Illegal sale of tags:* tags are sold on the black market in Ndjingala, Mubi and Walikale, allowing therefore minerals sourced from non-validated site of Bisie and Mpafu/Nyakoba to permeate the legal chain of custody.
- *Transport of minerals:* along the Walikale-Masisi-Goma road, three cases of fraud (underreporting of minerals quantity carried by transporters) were also documented.
- *Problems with the validation of Mahanga sites:* the concerning presence of the armed group FDC-Guides in the mining sites of Rubonga, Kibanda and Mushwao/Maboa, in the locality of Mahanga.
- *Tagging from sites after their suspension:* ITRI Ltd suspended mining sites of Rubonga (Masisi territory) and Kalay Boeing (Walikale territory) due to the proven presence of armed groups. Nevertheless the iTSCi tagging scheme of continued illegally to be used (UNSC 2017).

[99] Burundi DRC, Uganda and Rwanda are countries were the iTSCi scheme is currently implemented

In summary, one of the critical challenges here is bags tagged in the cities or 'tagged in town', such as in Bukavu, as originating from 'green' sites. It is a way of recycling clandestine or minerals from yellow or red sites into green ones. Another concern associated with the traceability scheme is the cost being supported by local miners. The export houses reflect the iTSCi surcharge in the prices at which they buy minerals from diggers. In other words, artisanal miners, and not the multinationals that process and market minerals, are ultimately those bearing the cost of the iTSCi traceability. The issue of the monopoly is also raised in the DRC context where export houses are obliged to be part of the iTSCi for having access to buyers who are ITRI members.

6.2.2. BSP

Founded in 2013, the BSP is another private sector initiative providing a technology-based communications solution that helps companies to verify mineral chain of custody, comply with conflict minerals regulations and improve mining communities. It is a real-time risk and impact assessment, monitoring, management and reporting that connects, clarifies, and contextualises data from the downstream to the upstream. BSP is also committed to create a virtuous circle between resource extraction and local development by driving improvements for communities that depend on the sector for income and livelihood[100]. It was endorsed by the CFSI[101] in 2014 as a Responsible Minerals Assurance Process. A set of 16 key criteria – that represents the global market entry criteria for ASM produced minerals and metals – is enshrined in the Better Sourcing Standard launches in 2014 for helping in the validation of upstream procurement. The same year, BSP partnered with USAID to pilot the Better Sourcing approach, and the first test of the traceability system took place in Numbi in June 2015. The following year it was found to be aligned with the OECD Due Diligence Guidance and successfully undergone the first audit of BSP validated materials. Artisanal gold mining areas recorded in June 2017 the kick-off of monitoring systems.

BSP is designed primarily to encourage a flexible, comprehensive and transparent approach to responsible mineral sourcing, including from artisanal and small-scale mine sites. The scheme relies on a tech-based monitoring system and trained and experienced local BSP field agents for assessing and monitoring mine sites. Once minerals are extracted from a BSP mine site, they are tagged, barcoded, scanned and integrated into the Information Management System through a smartphone technology solution. On its journey to export, the scanned mineral consignment gradually uploads data on to electronic traceability system and makes possible the continual monitoring of risk throughout the export process (Figure 11).

[100] https://bettersourcing.io

[101] The CFSI is now the RMI

Figure 11: Simplified BSP traceability scheme

The system is reputed to prevent the disappearance or tampering of bags, and because all of the data is fed live to a database, risk mitigation can occur prior to export into international conflict-free markets.

Before starting operations in DRC, the BSP worked in partnership with Geo-traceability as traceability service-provider on the one hand, and with exporters[102], international buyers and smelters on the other hand. In early 2018, BSP operates in eight mining localities (Kabare, Kailo, Luntukulu, Mwema, Ngweshe, Nindja, Numbi, and Walikale) and covers 2,549 miners with a traceable production of 1,251 kg. With regard to risk incident monitoring, BSP was portrayed as performing a bit better, with 19 out of 27 incidents managed and resolved as of July 2017 (Bayer & Hudson 2017), but the latest figures are not as glowing as those recorded in the first half of the same year (iTSCi 2017b). The programme has recorded 727 incidents in the fourth quarter of the year 2017, of which ongoing mitigation actions concern 249 reported cases, 19 closed, and 4 supervised. Recorded incidents are related to issues such as conflict, human rights abuses, safety, legality, traceability. Except from the safety that records 60 cases, the others performances are higher than 127 incidents. They mainly occur on the mine site and the mining town, and less along the transport routes, be it local or national[103]. BSP's social audit verification methodology involves interviews with miners and other community members on local ASM conditions, which provides an additional risk mitigation check, on top of the production data tracked by the traceability system. Currently, 57 mine sites disseminated on 5 mining areas are being monitored in the DRC where 1,461 miners were interviewed.

In its efforts to provide conflict-free assurance and validation in DR Congo, BSP offers an alternative to stakeholders that are not members of iTSCi system[104].

[102] BSP works with a larger group of exporters than covered by Section 1502 of the DFA, but also exporters and importers likely to fall under the global scope of the EU Regulation on responsibly sourced minerals, to obtain or regain access to responsibly sourcing markets by demonstrating an improvement of supply chain conditions.

[103] BSP – Better Sourcing Program. 2018. Better Sourcing Dashboard – DRC <https://app.klipfolio.com/published/f9eea4b98dbafa4aeca3594d40fa3e3f/better-sourcing-dashboard--drc>

[104] https://www.land-links.org/project/capacity-building-for-responsible-minerals-trade-democratic-republic-of-congo/

6.2.3. Just Gold

The Canadian NGO Partnership Africa Canada[105] tested an incentive-based model for artisanal gold traceability in eastern DRC with the support of the Public Private Alliance in 2014 and drew lessons that led to the Just Gold project. Launched in 2015, it was piloted until May 2017 in north-eastern DRC's Ituri Province, in Mambasa Territory. Just Gold is the first initiative to successfully trace conflict-free and legal artisanal gold from mine site to export. Just Gold meets the criteria of the OECD DDG as well as the regional certification standards of the ICGLR[106].

In the upstream, thanks to the Just Gold project, the Canadian NGO is providing technical assistance and training to artisanal miners to improve their gold yields while reducing mercury and implementing mine site safety. It has also established a partnership in the downstream with a Canadian jeweller in June 2017 and supports import of 238 grams of gold that has been made into jewellery offered the first consumer goods out of conflict-free artisanal gold from DRC that were fully traced from mine to consumer[107].

The process starts with the identification and registration of at least 18 year-old miners from artisanal mining zones validated "green" and conflict-free according to national mine site inspectors. Miner information including name, ID number and type, date of birth, mining team, and more is logged into the Just Gold registration database. Each participant receives an ID badge confirming their registration. Based on mine site assessments, Just Gold project then provides a comprehensive technical assistance program including safety, environmental mitigation, land use planning, as well as gender sensitive rights-based training within the wider community. In exchange, the gold is sold to the Maison d'Achat Modèle (MAM) always accompanied with a form accurately completed at the end of each day by the team leader. The Just Gold ID badge in the project must also be presented to prove registration in the project. After finalizing the sale, the *négociant* logs the details of each gold purchase into a daily purchase form, which always remains with the day's gold as it travels from the MAM to exporter. Before the export, a series of verifications are performed on evacuation forms that are done weekly to guarantee the traceability of the gold according to regional and international standards. Just Gold partners with a local exporter (*comptoir*) who undertakes a full due diligence review and takes action to comply with regional certification under the supervision of the manager of the MAM[108].

With its NGO perspective, IMPACT is concerned with the sustainability in the implementation of a viable solution for traceable, legal, and conflict-free exports of artisanal gold from DRC.

6.2.4. ITOA

Designed in 2013 by the CEEC, this Congolese-led initiative backed by USAID was aimed to trace artisanal gold from mine site to export. It was legalised since 2015[109] and publicly launched on 12 June 2017 by the DRC government aimed at disrupting the illicit trade by tagging and tracing it from pit to market. As such, it is likely to be easily adopted and takes advantage of existing institutional infrastructure. Mining sites are classified in green (exploitable), yellow (validation in progress) or red (non-exploitable) and the whole system makes moderate use of technology, which allows it to be easily performed in the mine site environment (Levin et al. 2015).

[105] Partnership Africa Canada recently changed its name into IMPACT, on November 22, 2017

[106] https://impacttransform.org/en/countries/democratic-republic-of-congo/

[107] https://impacttransform.org/en/work/project/just-gold/

[108] https://impacttransform.org/wp-content/uploads/2017/10/just-gold-brochure-En-web.pdf

[109] Minister of Mines, Order N°0918/CAB.MIN/MINES/01/2015

It is a nationally scalable model that relies on sequentially numbered tamper-proof smart bags including a chip, for which ITOA holds the code, depending on the colour, size and price and on their place in the supply chain. It is has an adhesive closure, a coupon or tab, a serial number with barcode, a writable side and a kangaroo pocket containing all the identification documents of the gold package. There are four models of bags involved in the ITOA scheme. The model A is used at the mine site, model B at the point of sale, model C at the counter desk and model D at the CEEC. It serves to identify the digger, the mining site as well as the entire supply chain of ores.

SAESSCAM and CEEC are organs within the Ministry of Mines that oversee and enforce the process. The former provides supervision for ASM. It manages the tamper-proof bags of model A, provides weekly, monthly, quarterly and annual production statistics to the Mines Ministry and the CEEC. The latter provides tamper-proof bags for gold packaging to services involved in the chain of custody, establishes the voucher for gold parcels after verification of the authenticity and compliance of the bags. It draws up the weighing report, compares the production statistics supplied with those recorded for export in order to identify any differences. The CEEC in turn transmits statistics to the ICGLR database. CEEC monitors and promotes the system. The traceability of artisanal gold is guaranteed through the mineral certification software already successfully operationalized for industrial gold. Monitoring and evaluation of the system is carried out by a technical unit made up of two representatives of the Mines Administration and a delegate from the ICGLR National Monitoring Mechanism in the DRC[110].

6.3. Certification

Certification is an examination process of ore to assess the level of compliance with (conflict-free) standards and to check whether mineral extraction meets certain mandatory social, environmental and legal standards that guarantee the alignment with the OECD DDG. It can also be understood as the final document sanctioning of the processes of traceability of minerals presented above to confirm or not that a parcel of ores traced was not associated with the financing of armed groups or other human rights violations. It can be as well – unrelated to traceability – a judgment on the basis of elements accompanying a shipment of minerals to assess compliance with conflict-free standards. Some of these initiatives are already being implemented in the DRC. These include KPCS, CTC, and RCM, and some can even go beyond the conflict and human rights sphere.

6.3.1. KPCS

One of the earliest mineral certification schemes was the Kimberley Process Certification Scheme (KPCS) that aimed to reduce the trade in conflict diamond. It was established on January 1, 2003 to stem the diamond trade that financed the war and thereby supported continuation of deadly fights in Angola. While UN sanctions[111] against UNITA, the second-largest political party in Angola in 1998, were still in force, the Canadian Ambassador Robert R. Fowler presented an investigative report to the UN in March 2000[112] on behalf of the panel of experts about UNITA's strategies for escaping sanctions imposed by the UN. It highlighted the link between the diamond trade and the financing of conflict, including the fact that the sales of diamonds were UNITA's main source of funding to support the war effort. Likewise, the report specifically mentioned the actors involved in these trades (countries, organizations and individuals). Following this report, and in spite of new sanctions taken by the UN in

[110] https://www.pri.org/stories/2017-06-23/tracing-conflict-gold-democratic-republic-congo

[111] United Nations Security Council Resolution 1173 https://www.globalpolicy.org/component/content/article/202/41606.html

[112] Also known as the Fowler Report

2000, a complementary strategy was adopted in September 2000[113]. This consisted of a series of meetings of Southern African diamond-producing states in Kimberley as well as a culminating ministerial meeting in Pretoria, from which emanated subsequently the KPCS[114], supporting the creation of an international certification scheme for rough diamonds.

Through the national monitoring system put in place, the member country must ensure that these conditions are met by each parcel of ore the country produces, and especially that diamonds produced in the country are conflict free, do not originate from or transit through a non-member of the scheme and always accompanied by a Kimberley Process certificate. It is presented as "a commitment to remove conflict diamonds from the global supply chain"[115]. The DRC has been a member since 2003 and has held the position of the KPCS Vice Chair in 2010 and the Chair in 2011. Inconsistencies and violations of the system are usually exposed by different actors such as UN Group of Experts on the DRC (30.11.2010), investigative journalists[116], NGOs[117], etc. in accordance with the KPCS, an association of small-scale miners initiated several programs to reduce illegal exports of diamond[118]. According to a WTO report, the DRC's accession to the Kimberley Process has not significantly reduced the illegal trade as it still accounts for between 30% and 40% of trade (WTO 2016). This is partly due to the failure of the control mechanism of the CEEC.

The KPCS has mobilised a large spectrum of stakeholders involved in the diamonds chain of custody in the beginning, but has nowadays become a controversial tool, as illustrated by problems in Zimbabwe and Cote d'Ivoire resulting in loss of credibility. Global Witness left the Kimberley Process in March 2014, IMPACT also moved out of the Process during the Kimberly Process plenary event that took place in Brisbane, Australia from December 9 to 14[119], claiming the scheme was not effective enough in policing the diamond supply chain, namely the lack of evidence of traceability and due diligence needed to ensure a clean, conflict-free and legal diamond supply chain in the internal controls governments conformed to. It has campaigned for major reforms to the mechanism, including the expansion of conflict diamonds' definition, which should be also broadened to include violence caused by governments and private security firms, rather than just those perpetrated by rebels trying to overthrow national leaders. Another biggest limitation of the KPCS is that the certification regime is only applied to the rough diamonds, yet they can still access the market in the form of polished diamonds. Consumers' purchasing decisions for diamonds are therefore hardly informed by appropriate information so as to avoid the false assumptions, only seller and the cutter in the supply chain know whether a diamond is uncertified, and there are no instruments for the jewellers and retailers to be certain. This leaves a room for manoeuvre to irregular operations to happen[120]. Another limitation is related to definition of conflict diamonds.

6.3.2. CTC

BGR has been engaged in mineral certification, due diligence and ASM formalization efforts in the Great Lakes Region of Africa and internationally through a number of technical cooperation projects implemented since 2006 (Certified Trading Chains, CTC). BGR started developing the AFP method

[113] United Nations Security Council Resolution 1295

[114] Resolution A/RES/55/56 of the United Nations General Assembly

[115] https://www.kimberleyprocess.com/en/what-kp

[116] https://worldpolicy.org/kimberleys-illicit-process/

[117] The legendary case of Global Witness, one of the first organisations to report the link between the mineral industry and conflict was an official observer to the process at its outset, decried KP practices as reported here (https://www.theguardian.com/sustainable-business/diamonds-blood-kimberley-process-mines-ethical).

[118] https://minerals.usgs.gov/minerals/pubs/country/2014/myb3-2014-cg.pdf

[119] https://betterdiamondinitiative.org/impact-quits-kimberley-process-certification-scheme/

[120] http://www.monacolife.net/diamonds-the-need-for-progress-in-the-kimberley-process/

based on samples collection, analysis to determine their differentiating features, and stored the mineralogical and geochemical characteristics of individual 3T ore deposits in a database. They were intended to serve as reference data to be able to identify any parcel of 3T ore circulating in the DRC and Rwanda. Since 2015, the ICGLR has designated the SEAMIC as the scientific centre in charge of setting up the regional laboratory for fingerprinting of minerals in Dar es Salaam (Musila 2016). It offers or confirms the proof of origin, and can be integrated into the CTC mineral certification scheme. It is not an initiative per se, but can nevertheless serve as a tool to deter fraudsters across the chain of custody and to substantiate 3T mineral risk assessments (Eslava 2018).

The CTC certification scheme on its part was developed and refined in 2007 by the BGR. It also proved that the mineral certification concept was feasible on a voluntary base through the G8 pilot project on CTC implemented with government and private sector partners in Rwanda between 2008 and 2011. The scheme was developed in the DRC in the framework of a bilateral cooperation programme[121] between the DR Congo and Germany in 2009, and it is currently in its second phase. A larger cooperation programme between Germany and ICGLR reinforced the regional fight against the conflict minerals. It was launched in 2011 with a BGR module related to supporting the RCM, namely through the introduction and the AFP technology transfer as well as management capacity into the Great Lakes Region on the one hand, and on the other, the ASM formalization and mineral certification[122].

The programme is implemented together with its Congolese partners. It is *"based on facilitating joint responsibilities for improving the conditions of mineral extraction and trade, including through mineral producers themselves (e.g., ASM cooperatives) as well as associated international partners and specific supply chain stakeholders"* (Al Barazi et al. 2017). The German government was the first bilateral partner to engage with the issue and the programme aimed at developing a system of certification for production sites, which includes some twenty one criteria linked to transparency, security, human rights, the environment and the contribution of artisanal mining to community wellbeing. Five other criteria underlie a set of labour standards including the origin of minerals and transparency, child labour and fair working conditions, on-site security, community consultations, and the environmental performance that can be gauged based on standard specific level descriptors with a score ranged from 0 to 4. The twenty one criteria resulted from an intensive consultation process.

The CTC approach aims to provide supply security for downstream stakeholders on the basis of a responsible mining framework, which it supports setting up in the artisanal mining sector. It goes beyond certification itself and integrates capacity building for improving mining practices. Rather than rejecting all of the DRC's mineral production altogether, the CTC concept aimed instead at offering upstream players the opportunity to stand out from the irresponsible practices in the sector to engage in a sustainable process. As a consequence, they gave the downstream actors the choice to select, while supplying in the DRC, only the minerals produced in the strict respect of working and human rights standards. To complement the certification system, a Certification Working Group audits the whole process through on-site inspections and compilation of detailed evaluation reports to assess its overall performance. At a regional level, CTC standards were integrated as 'progress criteria' in the RCM, which are not required to obtain an ICGLR certificate, and only serve for monitoring purposes.

In 2012, only three baseline audits were carried out in the DRC (IPIS 2012) and three years later, the situation improved significantly (Figure 12).

[121] "Strengthening the transparency and control of the natural resource sector"

[122] https://www.bgr.bund.de/EN/Themen/Min_rohstoffe/CTC/.../CTC_node_en.html

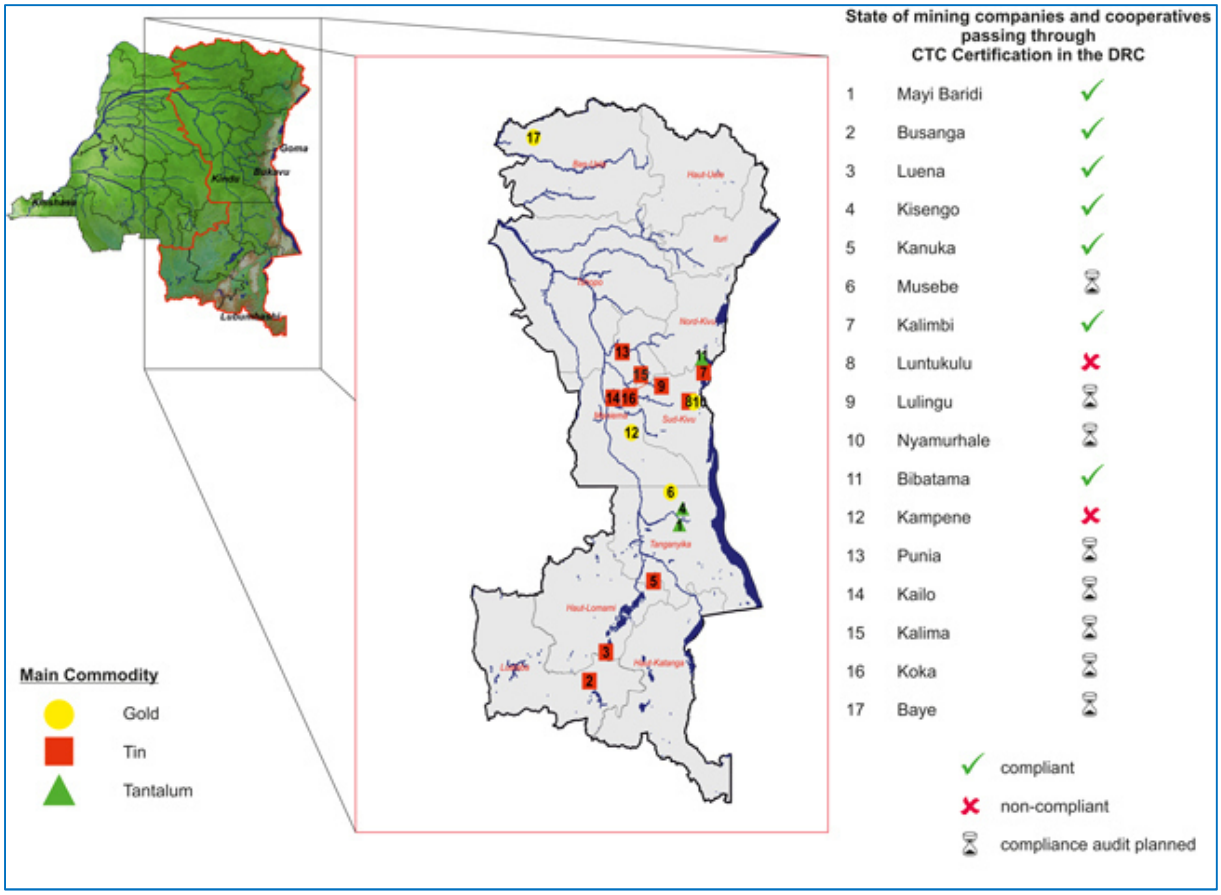

Figure 12: State of CTC Certification in the DRC in 2015 (Sterbik 2015)

17 baseline audits were undertaken on mining companies and cooperatives up to 2015. Although almost half (8) were still being audited, the trend was generally positive. Of the 9 that already completed the CTC audit, 7 were compliant, while only 2 were not[123].

A CTC compliant site fulfils as well the requirements of the RCM and the OECD DDG. It is the case of the Kampene gold supply chain which is in 2018 a CTC compliant site contrary to its status of 2015. Besides the training and a technical support of the cooperatives with local geologists, exploration programs as well as mining and treatment methods, the pilot project includes an electronic traceability system for gold and aims to increase transparency and allow access to validated and compliant ASGM sites to international buyers. Since April 2017, the electronic system is operational and overseen by the DRC government agencies[124]. With this pilot electronic traceability system that does not use a closed pipe approach to adapt to existing supply chains. BGR steps up its contribution by moving from the certification to also embrace the traceability system.

[123] https://www.bgr.bund.de/EN/Themen/Min_rohstoffe/CTC/Bilder/Map_CTC_sites_DRC_g_en.html

[124] http://www.golddoreforum.com/presentations/9_Case_study_from_Congo_Dr_Bali_Barume_Martin_Newman.pdf

6.3.3. RCM-RINR

On December 15th 2006, the eleven Heads of States composing the ICGLR endorsed the Pact on Security, Stability and Development in the Great Lakes Region to fight against the illegal exploitation of natural resources, which outlined the actions to be taken by Member States in order to achieve that goal. Four years later in Lusaka, the ICGLR Heads of State and Government approved the RINR as the main tool for implementing the Pact[125]. RCM is one of the 6 tools and four principles[126] adopted by the 12 ICGLR states to address the challenges posed by the issue of natural resources. The ICGLR, technically supported by the BGR, is currently leading the implementation of a certification scheme for minerals produced in eastern DRC and the Great Lakes Region.

Certified "conflict-free" ores are those that upstream actors in the supply chain involved in the production, transportation, selling and buying processes have not illegally interfered with any non-state and state armed groups. They must also be free from any extortion of money and minerals at access points of mining sites, along transport routes or at points of illegal mineral trade; as well as extortionately taxed intermediaries, export companies or international traders. Additional concerns such as environment, serious human rights violations including torture, forced or child labour, sexual violence and crimes, war, etc. are also integrated in the ICGLR mineral monitoring and certification mechanism.

The ICGLR RCM consists of verification and monitoring process based on the transparency principle of operations along the mineral value chain. Each site must first be inspected to establish that the mine is not occupied by armed groups, that it does not exploit children or women. From such a mine site, the mineral production is divided into portions of 15 to 20 kg, recorded, put in a bag and tagged before being sold to a trading centre by the digger. The DRC government, as member of the ICGLR, implements the certification scheme as a blueprint for government-certification mine site validation program, under which an annual site audits, undertaken by a multi-stakeholder group, resulting in classification of visited sites in a tricolour-flagged system (green, yellow and red) according to their level of compliance with regional standards. Green-flagged mine sites are those fulfilling the above requirements and that can therefore be freely exported within the legal market as a certified export. Yellow-flagged sites partly comply with standards, and must solve detected issues within six months before producing certified ores for export. Red-flagged mines are those with serious infringement on one or more criteria. Such a mine is prohibited from producing for a minimum of six months and remains red until a new inspection finds that the improvements have been made.

The Joint Mine Site Validation Mission is composed of the provincial mining authorities, SAESSCAM, CAMI, Mining Police, BGR, PACT/iTSCi (for 3T mines), MONUSCO/OIM, FEC, and Civil Society organizations. It is concerned with the control of illegal taxation by armed groups, the situation of Women, Human Rights abuses and child labour on mine sites and operations. It started in June 2011, and to April 2016 had conducted 18 inspection missions on 394 mine sites, of which 92.6% (204 sites) were labelled *green*, 4.6% (17 sites) *yellow*, and 2.8% (11 sites) *red*[127]. Until December 2015, it was estimated that the DRC had some 2,707 artisanal mining sites throughout its territory (Musila 2016). This means that just over 14% of sites are inspected, and less than 7.5% are labelled *green*, with the consequence that only that proportion of minerals can be officially and legally exported. The remaining

[125] http://www.icglr.org/index.php/en/rinr

[126] The six tools of the RINR as stated on the ICGLR website: (I) Regional Certification Mechanism (II) Harmonisation of National Legislations, (III) Regional Database on Mineral Flows, (IV) Formalisation, (V) EITI Peer Learning Mechanism and (VI) Whistle-blowing Mechanism.

Four principles of the RINR: (1) Chain of custody tracking from mine site to export, (2) Regional tracking of mineral flows, (3) Regular independent third-party audits, (4) Independent mineral chain auditor (IMCA).

[127] https://enoughproject.org/files/Bulletin_ECQ_April_2016_EN.pdf

2503 mines are not necessarily inactive or closed and might either unduly integrate the legal system or smuggle to neighbouring countries.

The ‘bag and tag’ system is checked; then once more re-weighed and re-registered. The transportation of the production from the mine site to the buyer should not involve armed groups. From the trading centre to the processing plant, the monitoring conditions are the same to avoid any contagion with the 'dirty' ores. Once at the plant, the ore is re-conditioned before export. It is at this stage that the ICGLR export certificate is issued by certification offices based in the localities of Bukavu, Goma, Kindu and Lubumbashi in the eastern DRC.

Besides the verification and monitoring process of 3TG chain of custody, the certification system consists of both third party audits and an overarching Mineral Chain Auditor provide independent oversight of 3TG mineral exports from the ICGLR.

The ICGLR-RCM is increasingly gaining space in the DRC, and contributes to combat human rights violations, conflict minerals and other illicit practices in the mining sector. However, the RCM is criticized for its limited operability which requires length and ineffective procedures. In addition, the system faces significant violations that may call into question its credibility. In the Orientale province, Musila (2016) mentions cases of obstruction to site validation by most executives of state-owned companies and politicians, holding dredges for the exploitation of placer gold or mining squares. They do not consider the validation as being able to guarantee the perpetuation of their interests in the mining sector. Gold production from these sites leaves Congolese territory and transits through Juba (South Sudan) before ending up in Dubai. In Maniema province, politico-military authorities use the cooperatives and the mining federation they own to better control production. They also take their sponsorship to ore purchase companies to keep control over this lucrative trade, and in some cases even grant them facilities including various exemptions. In South Kivu, there is a whole political, military, legal or administrative chain designed to organize smuggling while masking clandestine operations and promoting exports by military and political support on both sides of the border. Examples are the Luntukulu and Mwenga sites whose fraudulent mining is covered by military and politicians. Tolls of illegal collection of taxes exist in the province of Maniema. The Mai Mai "Raia Mutomboki" militias hold down barriers and preventing companies such as the Canadian company BANRO Corporation from mining the minerals. Public authorities also manage barriers along the entire mineral supply chain (eg Barrier on Osso-Mengwe axes, Kindu-Kalima or Punia-Kindu axes) for their own account (Musila 2016).

In June 2016, 50 ICGLR certificates disappeared from the CEEC offices, the state agency in charge of issuing such certificates in the DRC. At least two of those missing certificates have served to illegally export gold from the DRC. The first one was used to export gold to Belgium, but the Belgian authorities refused to clear the export/import of a gold parcel associated to ICGLR number CD00007976. The second one, number CD00001892, was reported used in Lubumbashi to export 99.5 kg of gold to Dubai via Nairobi on a Kenya Airways flight (UNSC 2017).

Furthermore, foreign countries play a role of transit location as well as destination countries for Congolese gold. The cases of Uganda and United Arab Emirates illustrate the two sides of gold smuggling from the DRC. Kampala-based gold traders were fraudulently involved in the gold transactions from the DRC as regular buyers that were then sold on international markets as Uganda’s production. Bulk of artisanally sourced unwrought gold from the DRC illegally accesses Dubai, either directly from DRC or after transiting to Kampala.

Moreover, on the June 27, 2013, the DRC decided to implement the certificate of origin of ICGLR. The certification of origin for minerals is a tool for assessing the level of compliance of gold, coltan, wolframite, and cassiterite to standards comprising various elements, including, among others,

transparency of operations, respect for the environment, lack of connection with financing armed groups, respect for human rights, etc. A compliance certificate is thus issued to any mining operator requesting it when the exploitation site audits carried out by external auditors attest to the respect of the standards enacted by the certification system.

The adoption of the RCM has improved practices across the mineral chain of custody in the DRC. Nevertheless significant efforts are still need to be invested in the certification system in order to efficiently fight against conflict minerals and the smuggling of minerals from outside the value chain into the legal trading circuit.

6.3.4. Other industry initiatives in the DRC

In a context requiring ever more DD, the mining industry contributed to accompany the international willingness to continue sourcing from the Congo thanks to the implementation of several closed pipe initiatives. The starting experience was in 2011 with an inflation of projects to facilitate the private sector's involvement in the implementation of the OECD DDG.

Motorola Solutions and AVX launched the SfH initiative in 2011 to source conflict-free tantalum from Katanga province, were later joined by Nokia, Hewlett Packard and Intel. The project consisted of a closed pipe supply regrouping a defined set of suppliers and buyers along the whole supply chain such as ASM cooperatives, exporters, smelters/processors, component manufacturers and end-users. It expanded beyond Katanga to the North Kivu with the first successful export from the Société Minière de Bisunzu in 2015.

Similarly, in November 2011, the USAID in support to DD initiatives in the Congolese mining value chain launched the PPA, which is a multi-sector and multi-stakeholder initiative for funding pilot supply chain systems to align chain-of-custody and bolster in-region civil society and governmental capacity. It has funded a traceable conflict-free mineral chain for artisanal gold from Province Orientale, as well as the provision of support to civil society initiatives in monitoring transparency, fostering early warning mechanisms and securing accountability of the mining sector in South Kivu.

In 2012, another closed pipeline, the "Partnership for Social and Economic Stability", started in Katanga for the manufacture of tantalum capacitors by KEMET[128]. Over the same year 2012, the CFTI was established by the Dutch government, industry partners such as Philips and Tata Steel in South Kivu with a pilot tin mine in Kalimi, and expanded two years later to Maniema.

As a consequence of those initiatives, several former large buyers like Traxys and Malaysia Smelting Corporation returned to DRC for sourcing raw minerals as well as processed of minerals through the construction of smelters in Masisi (North Kivu) and Lubumbashi (Katanga).

Most recently, additional initiatives started to complement previous efforts of making the Congolese supply chain aligned with DD requirements. These include among others the Fair Congo, First Cobalt, Blockchain initiatives.

A US based impact investment firm, the Chambers Federation, launched the Fair Congo to create additional supply chains of minerals, timber, and agricultural commodities from the DRC, and started since 2008 to export conflict-free ASM gold in a transparent, legal, and sustainable manner while

[128] One of the world's largest tantalum users

providing a fair-trade value to the communities who produce them[129]. It was registered in the DRC as a for-profit company in 2017.

Another initiative is the Responsible Cobalt that has been adopted by First Cobalt to responsibly source mining in the DRC according to the OECD DDG by tracing how cobalt is being extracted, transported, manufactured and sold[130]. Apple, Beijing Easpring Material Technology, HP, Samsung SDI, Huayou Cobalt and Sony are members of the initiative, which was put forward by the CCCMC with strong support from OECD.

Blockchain is a public online ledger of transactions in the digital currency market, and has committed itself in the tracking of Congo's cobalt journey from artisanal mines in the DRC to products used in smartphones and electric cars. It is a closed network; a single digital record of transactions in which only selected participants can view more than their own data. Its application presents many challenges as scores of informal mine sites would have to be monitored, all players in the supply chain would need to buy into the scheme, and accurate, electronic data would need to be transmitted from remote areas - all in a vast country plagued by lawlessness[131].

Two industry associations EICC and GESI also established a Conflict-Free Smelter Program as a result of collaborative quest of solution to source responsibly in the DRC.

The RMAP, formerly CFSP with other organisations such as DMCC, LBMA and RJC, they provide assistance in auditing smelters depending on what metal is to be processed. Given the limited number of smelters (Lubumbashi and Masisi) in DRC, their role is not prominent on the ground.

6.4. Mapping

The administration of the CAMI is logically the organization that should ensure the collection of cartographic information and the updating of the mining cartography. It is nevertheless acknowledged that providing up-to-date maps for the ASM sector is a challenging task given the informal and unregulated nature of operations. In addition, the use of logbooks will have to be extended to all artisanal exploitation sites in order to ensure the traceability and the recording of data at the level of the mine, the processing unit and the exporter. Thus, a detailed database on small-scale artisanal production is created. The contextual data (the localization, mine ownership, site ownership, worker numbers, quantities of ores produced, routes and mode of payment) are collected at all mines. These data are collected by the Government and form the essential basis for the calculation of the revenues generated by the State through artisanal mining. Moreover, for the collection of data from diggers, the reinforcement of the capacities of the cooperatives and their restructuring is of great importance in order to facilitate the capture of all the artisanal miners and to insert them in the formal circuit of artisanal exploitation. The 2002 Mining Code provided for the provision of public and interested investors with the map of mining permits and quarry permits. Since October 2011, the CAMI site contains a map of the titles granted and being processed for the whole of the DRC. It is due to be updated monthly.

IPIS has conducted two mapping campaigns on the involvement of state and non-state armed groups in the ASM in the eastern DRC. It has provided cartographic information that increases possibilities to combat conflict minerals. Armed presence at mining sites was clearly evidenced in 2013-2014 thanks to 1,615 mining sites visited and mapped by IPIS. In 2015, only 775 mines were visited, of which 523

[129] http://faircongo.org/about-us/

[130] https://firstcobalt.com/2017/first-cobalt-adopts-responsible-cobalt-initiative/

[131] https://www.reuters.com/article/us-mining-blockchain-cobalt/blockchain-to-track-congos-cobalt-from-mine-to-mobile-idUSKBN1FM0Y2

are gold mines and 254 are 3T mines. 200 sites visited during both the 2013-2014 and 2015 phase of the project provided some trends regarding the issue of armed actors' interference with the mining extraction (IPIS 2016).

Mapping can enrich the whole approach, if it serves as a prerequisite for the other three approaches because it is impossible to give an account of the origin of the ores and to follow their commercial path if one does not have at the beginning an exhaustive knowledge of the sites of production from which they are extracted. It would be more efficient to have complementarity and synergy between several initiatives that have never coexisted, such as mapping on the one hand, and traceability/certification initiatives like iTSCi, or BSP, or ITOA on the other. Synergies are possible as well between certification and traceability initiatives (iTSCi, BSP, RCM and CTC).

Certainly the DD device is clearly a remarkable step forward in the fight against conflict minerals. However, judging by the number of incidents recorded, there is still a good margin of progress for these tools, all of which can be improved. One possible way would be the pooling of initiatives combining the strengths of each of them to make it a unique, non- complacent and robust device.

The multitude of initiatives leaves room opened to the competition by offering a wide range of choices to the buyers of minerals. But, the most effective perspective would be to promote a comprehensive framework that federates the various initiatives to make them applicable to all companies around the world. However, as an instrument of regulation, the diversity implies the differences among DD schemes, could become counterproductive. It would be more appropriate to have a device with proven effectiveness with the possibility of evaluating it and improving it on a regular basis. It is therefore important to associate, to start a more inclusive process with the best operators providing services to the DRC government. As an illustration, iTSCi could continue to manage the tin value chain, whereas BSP could offer audits across the same supply chain. ITOA could trace the gold chain of custody, while Just Gold could provide audits.

6.5. DD: ineffective/sustainable solution or the way forward?

These solutions provide buyers with a clear conscience and isolate illegal, unconnected and unskilled players (Tougas 2016). They could eventually cut down sites where the security and political situation is worrying, without forgetting the financial conditions that could encourage the isolation of some local actors, and therefore produce the opposite effect, that is to say, supply mafia trafficking channels of these ores.

DDs are solutions that engage very indirectly on the root causes of conflict minerals. They seek to produce or help to isolate "clean" ores for commercialization on the international market. This does not strictly prevent either the production of conflict minerals that nevertheless find their way elsewhere, or the development of wars and the various related human rights violations. While it is primarily up to the Congolese to solve their internal problems, external interventions favoured by the local government may be more intractable in terms of settling the Congolese conflict, and thus, remove a primary cause of conflict minerals.

7. Recommended Action for Enhancing the Sustainability of Mining in DRC

The DRC country report demonstrates, to which extent the country specific framework conditions influence the outlook for the establishment of environmentally, socially and macro-economically well performing mining operations. This is pointed out by a specific mine case (Glencore) in DR Congo. The specific outline of the mining sector, the administrative framework (policies, laws, regulations and institutional set-up) are described facing the governance challenges and the experiences with initiatives targeting responsible and sustainable mining. This analysis highlights country specific barriers for the establishment of responsible value chains for mineral commodities for Europe and gives country specific hints for potential actions by EU in order to pave way for enhancing the sustainability of mining in the partner country. A mix of actions that should be taken to address multiple stakeholders.

7.1. Government

- The political horizon is often blocked due to the uncertainties weighing on future presidential elections as well as the resurgence of armed conflicts in the East of the country. The overall context is not appropriate for attracting foreign investors, as even if elections came to stand, the uncertain aftermath of election is likely to jeopardize their investments both for those already on the ground and those aspiring to go there. In this regard, the government will have to pacify and organise a credible election to win the trust of stakeholders. That would give a guarantee of future stability to investors who are actually cautious.
- Contribute to the pacification of mining areas controlled by armed groups that add extortion and terror to dysfunctional governance. One way of achieving it, is through the better redistribution of the mineral rent at the local level starting from the creation of decent living conditions (infrastructures, formalization of the ASM, securing mining sites and border areas).
- Contribute to strengthening governance in the mining sector (transparency, DD, certification, traceability, etc.) in particular by taking effective measures against diversion of mining revenues, the evasion of funds that escapes the country because of the complex financial arrangements of the mining enterprises. Equitable redistribution of mining benefits is also a channel for applying good governance in the mining sector.
- Formalization of the ASM: The improvement of the mapping helps to improve the exhaustiveness of the mining cadastre, and therefore offering the possibility of having a monthly situation credible and updated. This approach of clarity is valid both for the artisanal sub-sector through the definition of ZEA and for the industrial sub-sector with the map of mining concessions. Based on the localization that induces a better control of the sector, the government should provide support to the State competent services to strengthen the capacity of miners and cooperatives and offer better care to the artisanal miners.
- Financing the overall system: national actors already manage to finance the DD schemes recently put in place, although the financing of necessary support (technical, logistic, social, etc.) to be provided to the artisanal sub-sector is limited or non-existent. The government could explore the possibility of allocating an appropriate proportion of official taxes to the support of SAESSCAM, namely in agents' salaries and operational costs to allow it to be more efficient in its missions of supporting actors in the artisanal sector towards the formalization.
- Resource Financed Infrastructure concluded with Chinese partners in 2008 is an additional challenge for improving transparency in the mining sector. Under the terms of the agreement, SICOMINES benefits from full tax exemptions until the end of repayments, that is to say, a shortfall

for the Congolese State and its people. In addition, it lacks due diligence initiatives in that it offers no assurance of verification. It is not an acknowledged category to deal with in the context of DD.

In achieving all that, the Congolese government must also prove more accountability regarding the management of the mining sector, but more broadly in its conduct of the nation's affairs.

7.2. Civil society organizations and populations

- Promote and guarantee spaces of freedom for the exercise of populations and civil society activities to ensure the watchdog role of governance acts in the mining sector (funding of awareness, whistleblowing and follow-up activities on the one hand and protection of local activists on the other). International NGOs have revealed several corrupt practices. Intensifying the collaboration with local and vital forces of civil society (status, financial and technical resources) would induce the local participation and a better surveillance across the mining value chain.

7.3. Companies

Companies should improve their attitude by getting more involved in and encouraging responsible sourcing efforts, while avoiding any complacency with local government regarding their involvement in the conflict minerals production and marketing chain:

- Companies play a critical role in the formalisation of ASM like Rwandan companies that are cooperating with artisanal miners. For that to happen, companies should put more emphasis on collaboration with locals. Their CSR and local content policies should integrate adequately locals as an important segment of their production chain.
- Companies should be urged to improve their cooperate practices by rebuking any compromise with the government in secret deals involving intermediaries and illegal financial transactions (cf. Paradise papers).

7.4. EU and other foreign partners

- In a context of weak surveillance capabilities, some companies might favour easy gain in morality, and thus vitiate the process. From that moment, it would be difficult for them to be judges and parties. To cope with this, it is important for the EU to promote the establishment and the visibility of a multi-state body to ensure that the production processes of various resources comply with the DD recommended by the OECD. This will involve promoting a single standard for all actors while leaving the variety of actors involved in the chain of certification and traceability, depending on their specificity to be able to play a role accordingly. So the process can start with the identification of communalities among the wide diversity of DD initiatives, and then select the points of divergence according to their relevance and add them as complementary elements in the DD system. If a more or less consensual system is put in place, the EU will have to show firmness in promoting and enforcing the initiative. In that regard, the rule of law will be respected without any weaknesses, either by extractive companies, commercial entities, or even foundry operators in the implementation of the conflict minerals framework. The proliferation of DD initiatives amply proves the relevance of such devices, but does not necessarily make them more effective. Although all are based on the principles of the OECD, the entry into force of the DFA has taken a decisive step in the effective implementation of DD. Today with the threat of repealing this law by the US government that could ruin all the advances recorded during its 6 years of implementation, the moment is indicated for the EU to promote the standardization of this device and then take it to the level of a supra-state organization such as the UN to avoid its outright disappearance. Risks

associated with such a system call for good checks and balances involving states as well as organizations concerned with human rights issues.

- Further support to the Congolese State in the promotion and implementation of good governance policies and practices (political will), both in terms of human resources and funding, as well as in supporting an internal and autonomous process of effective democratization. Measures can include a severe punishment for criminal offences perpetrated by EU citizens, support to certification, traceability schemes to reinforce the due diligence initiatives in place, teaming up with Canada and the US for building an international system with legally binding processes, and providing a support that gives full control of the sector to mining producers.
- Advocating for the continuation of the DFA after the announcement of its potential repeal by the United States Government.

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