STRADE

Strategic Dialogue on Sustainable Raw Materials for Europe (STRADE)

Successful implementation of conflict mineral certification and due diligence schemes and the European Union's role: lessons learned for responsible mineral supply

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Finally, the author would like to point out the following from the onset: despite the existence of a significant number of standards, few of them have been implemented in the upstream to a significant extent; creating a possible perception bias for the reader, as more information is available on widely implemented standards. Exposing them to additional scrutiny, this is particularly significant for iTSCi.

Executive summary

This report analyses experiences in the implementation of due diligence, traceability, and certification of the so-called conflict minerals, to gain insights and to build upon lessons learned for the successful and efficient implementation of similar schemes. These schemes are aimed at ensuring the responsible sourcing of minerals for EU users; with a particular focus on the upstream. Responsible minerals sourcing is currently understood to, at a minimum, satisfy the *OECD Due Diligence Guidance for Responsible supply Chains of Minerals from Conflict-Affected and High-Risk Areas* (OECD DDG) requirements and often goes over and above.

Responsible mining and sourcing aim to mitigate the impacts caused by minerals and metals extraction, trading, refining, production and financing. Objectives that are closely aligned with the EU values expressed in its Charter of Fundamental Rights. While responsible mining concentrates on the extraction, responsible sourcing looks at the entire supply chain, which requires traceability, due diligence, and, certification at the extraction level, services provided by different standards, certifications, and initiatives.

Successful implementation

Despite the recent visibility of the subject, there is to date only limited implementation of standards concerned with either mine site certifications, traceability, or due diligence. Based on existing research this report identifies a number of factors behind standards' implementation successes or challenges, namely their: application scope (is the principal focus on Artisanal and Small-Scale Mining (ASM) or Large-Scale Mining (LSM)); approach (based on pass/fail or progressive approaches to certification); regulatory base (voluntary commitments or regulatory requirements); implementers (local government agencies or third parties); and, data collection and dispersion methods (digital and real time or paper-based).

All current responsible sourcing models are based on batch-traceability[1] (including closed pipe supply chains). Due diligence and supply chain transparency mechanisms that issue certifications in the mid- to downstream fully depend on the successful implementation of standards in the upstream. Currently, conflict-free certifications in the Democratic Republic of the Congo (DRC) are virtually entirely based on one scheme, generating substantial risks of systemic failure. It is also unclear whether current approaches to responsible sourcing that focus on the bottle-necks in the mineral supply chain will be replicable for minerals that do not depend on a limited number of smelters or processing/transforming units, particularly in the case of non-metallic minerals.

Implementation is, and is likely to continue to be, driven by regulation or business-to-business (b2b) demand, accompanied in certain cases by efforts to protect company reputation and brand value. The limited consumer demand for responsibly sourced minerals is likely to be at least partially caused by a lack of awareness of minerals' presence in everyday items and services.

Implementation challenges are higher for smaller upstream operators as they face disproportionately higher costs to close bigger gaps with more limited resources. In addition, the dynamism of the ASM sector requires more regular audits, leading to further costs and audit fatigue for ASM operators. Unsurprisingly, ASM operators are thus not able to implement the same standards as LSM operators. Conversely, applying standards designed for ASM to LSM does not lead the latter to implement better practices and risks instead to lead to a race to the bottom for a number of operators. Interestingly, standards that use a combination of minimum and incremental progress criteria linked to incentives have shown to be promising. They allow ASM operators to get certified as demands are limited at first and then gradually encourage them to apply better

[1] As opposed to mass-balance or book and claim approaches, this approach relies on the processing of separate batches of mined minerals and thus guarantees the full traceability of the actual physical mineral back to the mine.

practices. They also push LSM operators towards full alignment with international best practices. This approach is also aligned with the transition from regulatory minimum requirements to additional voluntary requirements; the former driving uptake within all operators, including the worst performing, while the latter can incentivise the implementation of best practices amongst better performing operators.

The majority of standard implementation in the upstream occurs in regions where institutional quality and enforcement is lacking, in particular for standards focusing on ASM. And while no standard can currently meaningfully operate in the absence of the rule of law, standards that rely on government agencies for their implementation are more sensitive to disruption caused by a lack of state presence. As a result, standards implemented by third parties fare better in areas of limited government capacity. However, they are said to be more expensive[2] and thus less favoured by (small) operators.

Experiences from the implementation of regulatory requirements has shown that EU downstream companies face a number of challenges in regards to: implementation costs, lack of clarity regarding exact requirements, lack of cooperation from suppliers, and reporting. This is particularly true for EU Small and Medium Enterprises (SME) with their more limited resources and leverage. However, this report could not take into account implementation costs in more detail, as project-to-project price fluctuation and commercial secrecy have not allowed for the collection of reliable and comparable data.

STRADE recommendations on EU support

STRADE recommendations focus on how the EU can support the successful implementation of responsible sourcing, including the avoidance of negative side-impacts, while contributing to long-term good governance and governance capacity building.

First, it is strongly recommended to undertake an assessment of how standards have impacted the conditions they sought to change. If required these standards should be amended or complemented to ensure that on balance they do not adversely impact human rights enjoyment in third countries while upholding core EU values in the EU and abroad. In the case of conflict minerals, this will include carrying out or commission a systematic study that assesses whether implementation of conflict-free standards positively impacted the levels of human rights abuses in Eastern DRC, limited the funding of armed groups committing human rights abuses (including Public Forces), and whether any such gains created were not offset by the impacts of the resulting temporary *de facto* embargo on Congolese ASM minerals.

Second, the EU can set an example by encouraging responsible mineral sourcing via its public procurement rules either via regulatory demands or through preferential bid evaluation for bids containing responsibly sourced metals and minerals in particular in the infrastructure and public transportation sectors.

Third, for the forthcoming definition of the Conflict-Affected High-Risk Areas (CAHRAs), the EU should adopt a methodology that allows CAHRAs both to be identified at the sub-national level (in particular for large countries with localised high-risks) and be adapted over relatively short periods of time to reflect changing conflict patterns.

Fourth, the funding of supply chain R&D, with the objectives of bringing down the costs of certification and monitoring and analyse and disseminate information about supply chains should be considered.

Fifth, for practices that are detrimental to human rights, the EU and its institutions should assess which regulations at the EU and EU member state level can make use of the information that will be disclosed for Conflict Minerals Regulation (CMR) compliance or as part of non-financial reporting. The case of the *California Transparency in Supply Chains Act* can offer a blueprint as it has enabled the prosecution of companies with

[2] Something this research has not been able to verify due to project-to-project cost variability and commercial sensibility issues.

cases of human rights abuses in their supply chains under business law, a similar mechanism could make use of the information disclosed by the EU CMR.

Sixth, the EU should undertake periodic assessments of the functioning, integrity, and responsiveness of standards, in particular of those standards whose malfunctioning would present systemic risks to conflict-free or responsible mineral sourcing due to their central role in regard to certification, traceability or due diligence. Similarly, the impact of the EU CMR on the upstream should be monitored from the onset, and inform the implementation of the policy.

Seventh, particular attention should be given to supporting EU SMEs, with a dedicated outreach strategy. This would include the design and distribution to all stakeholders of the appropriate reporting frameworks for EU CMR compliance and reporting on their engagement in the upstream sector. Such support could include specific reporting and communication guidelines and templates for operators. In addition, support can be provided for downstream operators, by simplifying reporting and lessening audit fatigue in the upstream by designing a requirements and equivalence matrix. Such a matrix of certifications will take into account standard cross-recognition and requirements.

Eighth, most often ASM and the certification of its activities is considered solely from an economic perspective and does not consider the local social and cultural dynamics that underpin the activity, leading to the design of sub-optimal incentives for certification. The ASM sector should be supported to comply with conflict-free and responsible mining and sourcing schemes. EU upstream actors, especially SMEs, should be supported in their attempts to engage with and improve the situation in the ASM sector. Positive spill-over effects of compliance with the EU CMR to the governance of non-export mineral sectors should be encouraged. Further efforts – also beyond regulations and certification schemes -- need to continue for the responsible mining and sourcing of conflict minerals.

List of acronyms

3T	Tin, Tantalum and Tungsten
3TG	Tin, Tantalum, Tungsten and Gold
AFP	(BGR's) Analytical Fingerprint
AM	Artisanal Mining
ASM	Artisanal and Small-scale Mining
BGI	Better Gold Initiative
BGR	German Geological and raw materials agency
BSP	Better Sourcing Program
CAHRAs	Conflict and High Risk Areas
CCCMC	China Chamber of Commerce of Metals, Minerals & Chemicals Importers and Exporters
CCCMC DDDG	CCCMC Due Diligence Guidance
CMRTs	Conflict Minerals Templates
COMIBOL	Corporación Minera de Bolivia, Bolivia's mining SOE
CSO	Civil Society Organisation
CSRM	Centre for Social Responsibility in Mining, University of Queensland
CTC	Certified Trading Chains
DF1502	Dodd–Frank Wall Street Reform and Consumer Protection Act, section 1502
DRC	Democratic Republic of the Congo
EICC	Electronic Industry Citizenship Industry
EICC RRA	EICC Risk Readiness Assessment
EITI	Extractive Industries Transparency Initiative
ESA	European Space Agency
ESG	Environmental Social and Governance
EU	European Union
EU CMR	EU Conflict Minerals Regulation
FARDC	DRC Army
FLEGT	EU's Forest Law Enforcement, Governance and Trade facility
GoE	UN Group of Experts
Guiding Principles	UN Guiding principles on Business and Human Rights
GRI	The Global Reporting Initiative
GRI MMS	GRI's Mining and Metals Supplement
ICGLR	International Conference on the Great Lakes Region
ICMM	International Council on Mining and Metals

IRMA	Initiative for Responsible Mining Assurance
ITRI	International Tin Association
iTSCi	ITRI Tin Supply Chain Initiative
KYC	Know Your Customer (procedures)
LME	London Metal Exchange
LSM	Large Scale Mining
MS	Member States
MSM	Medium Scale Mining
MYSAC	Minera Yanaquihua s.a.c
NGO	Non-Governmental Organisation
NRGI	Natural Resources Governance Institute (formerly Revenue Watch)
OECD DDG	OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas v.3
OHS	Occupational Health and Safety
PSs	IFC's Performance Standards
PMH	Mining Police
RCM	ICGLR's Regional Certification Mechanism
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RGI	Resource Governance Index
RJC	Responsible Jewellery Council
RJC CoP	RJC Code of Practices
RJC CoC	RJC Chain of Custody
RMI	Responsible Minerals Initiative (formerly CFSI – Conflict-Free Sourcing Initiative)
RMAP	Responsible Minerals Assurance Process (formerly CFSP – Conflict-Free Smelter Program)
RoHS	Restriction of Hazardous Substances Directive
SAESSCAM/ SAEMAP	ASM support and strengthening agency (DRC)
SBGA	Swiss Better Gold Association
SGBPs	State Gold Buying Programs
SMEs	Small and Medium Enterprises
SOE	State Owned Enterprise
SSM	Small-Scale Mining
STRADE project	EU's Strategic Dialogue on Sustainable Raw Materials for Europe project
VPs	Voluntary Principles on Security and Human Rights

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1. Introduction

As part of the STRADE project and building up on the initial work presented in the STRADE policy brief 03/2017[3], this report looks at the topic of responsible mineral sourcing; which expands on the concept of responsible mining as presented in the Policy Briefs 09/2016, and 07/2016[4]. These policy briefs concluded that most standards are based upon well-chosen principles and criteria, with challenges lying in their successful implementation. Other STRADE work packages (WP3; and WPs 4.1-2) analyse among other avenues capacity building in third countries. This report thus focuses on and provides an analysis of the drivers behind implementation successes of both mineral certifications and due-diligence initiatives related to tin, tantalum, tungsten, and gold. To date responsible sourcing has principally focused on the issue of conflict minerals (the aforementioned minerals originating from the Democratic Republic of the Congo and its neighbouring countries, as well as diamonds originating from conflict zones) hence this report's analytical focus.

The analysis of successes presented herewith focuses on the capacity of these standards to achieve their stated goals, and not the broader objectives that may underline these goals. To illustrate, in the case of conflict minerals certification and due diligence, this report focuses on whether these standards can ensure that mineral sourcing is free of conflict and not on whether the implementation of said standards has positively affected the human rights of local communities. This narrow focus is favoured by necessity, as there is currently no systematic assessment of the overall impacts of standards on their region of implementation, only anecdotal evidence (which does not point to a particular direction). Focusing on the narrow efficiency of the standards rather than their effectiveness, allows to understand implementation challenges regardless (to an extent) of policy content and thus produces lessons that can be extrapolated. As such it allows to draw lessons that are transferable to standards with other areas of focus.

The current main drivers of responsible sourcing not related to conflict minerals and its limited regional and mineral scope are the regulatory obligations of companies to avoid the financing of terrorism and the backlash associated with child labour in supply chains. With commodities such as tourmaline, lapis lazuli (Global Witness, 2016), cement (Le Monde, 2016) and talc (Le Monde, 2017) recently linked to the financing of Daesh or the Taliban, or, cobalt (Amnesty, 2016) and mica (Guardian, 2016) linked to egregious cases of child labour it is likely that efforts to foster responsible sourcing will continue, as this is the only avenue of change downstream commercial mineral users can readily action.

At the same time the recent departure of yet another key civil society member from the Kimberley Process Certification Scheme (IMPACT, 2017), the first responsible sourcing standard, highlights that the exact direction of these efforts is yet unclear. However it is likely that, after having been adopted as a reference standard across the entire supply chain of different minerals, the *OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas* will be the underlying core standard of most, if not all, of the forthcoming efforts. Responsible sourcing standards and efforts will thus continue to seek alignment with the OECD.

[3] On the subject of *Operational design and implementation experience with due diligence initiatives and certification schemes*

[4] These Policy briefs are, respectively, on: *Voluntary initiatives in the mining sector and their principles and criteria on socio-economic sustainability*; and, *Voluntary initiatives in the mining sector and their principles and criteria on environmental sustainability*.

2. Responsible Sourcing of mineral resources for Europe

Responsible mining practices and the sourcing of responsibly sourced minerals are concerned with mitigating the impacts of minerals and metals extraction, trading, refining, production and financing. While these practices have no universally accepted definition or exact objectives, they are concerned with mitigating the social and environmental negative impacts of mineral exploitation as much as feasible, while enhancing returns for local populations. If necessary going further than what is requested by law.

Responsible mining practices are closely aligned with the EU values expressed in its *Charter of Fundamental Rights*. These concerns are described in more detailed in policy brief 04/2016 und 05/2016 and not repeated here, and additional EU documents referring to European values are described in more detail in policy brief 01/2017.

Table 1 - Charter of Fundamental Rights

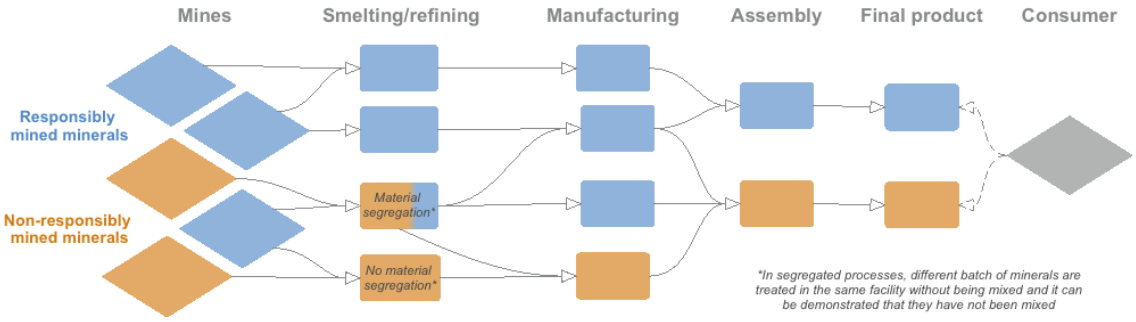
***Charter of Fundamental Rights*' - Values**[5]	**Contributions of responsible minerals: Ensure that minerals do**
Dignity (human dignity, the right to life, the right to the integrity of the person, prohibition of torture and inhuman or degrading treatment or punishment, prohibition of slavery and forced labour)	Not profit or finance armed groups (whether government forces, non-governmental armed groups, organised crime or terrorist outfits) committing human rights abuses such as: preying on civilians, using forced labour, committing inhuman and degrading treatments, torture, war crimes, genocide. Ensure the protection of environmental and human rights defenders.
Freedoms (freedom of assembly and association, the right to property)	Not profit or finance operations that do not grant workers labour rights or that impact legitimate land tenancy without due and appropriate compensation.
Equality (equality before the law, non-discrimination, equality between men and women)	Not profit or finance operations that operate in an unfair manner due to bribery and corruption or political patronage
Solidarity (fair and just working conditions, prohibition of child labour and protection of young people at work, environmental protection, consumer protection)	Not profit or finance operations that use child labourers, provide unsafe working conditions to their employees or labourers, or generate non-mitigated environmental impacts
Citizens' rights (the right to good administration, the right of access to documents)	Promote transparency and good governance and ensure that revenues from mineral extraction, processing and trading accrue to the national budgets of extraction countries.
Justice (principles of legality)	Operate in accordance to host country laws and regulations

Responsible sourcing differs from responsible mining in that it focuses on the mineral supply chain from the mine to the concerned mineral buyer rather than solely on the activities taking place at the extraction point.

[5] This selection is based on the EU Charter of Fundamental Rights. Selection of the values is based on the rights most impacted by mineral exploitation. Selected values also align with the contents of European Comission's Communication on "*A Stronger Role of the Private Sector in Achieving Inclusive and Sustainable Growth in Developing Countries*".

The objective of responsible sourcing is to ensure and demonstrate that the purchased minerals are produced by responsible mining practice and, depending on the scope, ensure that minerals have been handled responsibly – i.e. according to the specific demands of responsible mining/sourcing standards – along the supply chain. The responsible sourcing scope is illustrated below in *Figure 1.*

Figure 1 - Responsible sourcing



To be able to do so responsible sourcing is thus dependent on the existence of responsible mining certifications, due diligence initiatives, and the traceability of minerals and parts, as explained in section 3. Responsible sourcing is commodity specific as commodity supply chains vary in their structure and the number of actors at each step of the extraction, transportation, refining, and manufactory processes.

By looking at bettering the situation on the ground and to contributing to positive change, responsible mineral sourcing practices seek to have a positive impact on the ground and go beyond approaches that look at ensuring that individual supply chains are not *contaminated* by problematic materials. While the former plans to take stock of the situation and engage with it, the latter can be limited to simply avoiding the situation altogether, and when necessary finding new suppliers. Such an approach can leave the very people it seeks to help worst-off. A criticism that has been levied against the implementation consequences of Section 1502 of the Dodd–Frank Wall Street Reform and Consumer Protection Act (DF1502, and often referred to as the [US] conflict mineral regulations) and the de facto ban it imposed on mineral exports from impoverished mining communities in Eastern DRC[6].

In a nutshell, instead of avoiding issues responsible mineral sourcing practices seek to build solutions, most often by minimizing negative (side) effects and operating in a way that promotes transparency, and, local community and national development. In that way responsible sourcing standards seek to mitigate the lack of government capacity when authorities are unable to ensure that mining is conducted responsibly. Conflict minerals are the most representative case of this external type of intervention.

Mineral extraction practices are unique in that, due to the uneven distribution of population, mineral resources across the Earth's land surface, global division of labour, and differences in social and environmental Impact/risk thresholds, the most problematic operations from a human rights perspective are pre-eminently found in areas with limited governance. Resulting in dark spots on the map with respect to public visibility, where often-weak governance has left local communities bearing the social and environmental costs of mining.

Public attention and advocacy for affected groups has generated pressure on companies to address product responsibility issues and its different aspects along the entire value chain. Adequately responding to this

[6] See for example the public Open Letter signed by 70 academics and practitioners in September 2014 – https://ethuin.files.wordpress.com/2014/09/09092014-open-letter-final-and-list.pdf. As accessed on the 30.10.2017

demand for responsibility will require the EU to set a framework as agreed on the G7 summit in Heiligendamm in 2007 to adequately address concerns.

This can only be achieved through a combination of supply chain management practices and responsible mining practices on the ground that are successfully designed, implemented and paralleled by regulatory reform in host countries. The latter being something on which EU institutions have little control and leverage. Supply chain management can be used by downstream companies wanting to link the minerals they use to mineral production on the ground through both due diligence and traceability. A complex endeavour as mineral supply chains are often long, complex, and can cut numerous borders and span various continents. This is as true for precious metals and stones as for industrial minerals and metals.

The sheer number of intermediaries and sources of material present along these chains offers multiple opportunities and incentives for individuals or organisations that undertake extractive, trading, refining or producing activities in a non-responsible manner to enter supply chains. Sourcing of non-responsible minerals can create various types of risks for EU companies, in addition to their (in)direct economic impacts:

- **Regulatory**, which encompasses liability to fines and/or other sanctions for infringement on human rights legislation such as financing of terrorism and money laundering, forced labour and worst forms of child labour.
- **Reputational**, which impacts the perception of the activities of the company thus influencing consumer behaviour, and impacting its brand. What is reputationally off-limits has often a broader scope and depth than the associated regulatory requirements.
- **Commercial**, which impacts the company's potential to conduct commercial operations over and above the impacts created by reputational and regulatory risks. Typically this is linked to the access to certain premium, and most often niche, markets (such as Fairtrade), compliance with voluntary standards, or the access to credit from banks or institutions that limit their lending to companies free of certain forms of human rights impacts.
- **Operational**, which create additional costs and/or generate losses through the interruption of operations and the measures taken to prevent such interruptions, e. g. due to miners' death or conflict with neighbouring communities.

These risks at the company level in turn affect the EU not only by undermining the expression of the values it is funded upon, but also through more direct impacts on the day to day life of its citizens and institutions. Among others, non-responsible sourcing can:

- Impact EU citizens' health, either directly through non-compliant mining or refining/smelting operations or indirectly through products with inadequate stewardship, especially so when EU and Member States (MS) regulations are not respected.
- Reduce EU soft power projection, political leverage and capacity to set the international agenda due to misalignments between EU values, the behaviour of its companies, and regulations (or lack thereof). An issue clearly observed during STRADE workshops.
- Benefit (by financing and entrenching) individuals whose impact on public life runs contrary to the values of the EU. Such as organised crime groups enriching themselves through the procurement and sale of construction materials in infrastructure projects.
- Impact EU downstream companies that need to close the gap in responsible sourcing management systems and practices needed to respond to overseas demands for responsible sourcing. In particular if no dedicated framework and support is in place, as compliance with the requirements of DF1502 has shown.
- Create negative impacts for EU institutions if projects they fund are found to promote non-responsible practices[7].

[7] Similar to the recent backlash against the World Bank's financing of cotton projects in Uzbekistan, see HRW (2017) for details.

2.1. Current EU framework for responsible mining and sourcing

Currently, while a number of responsible production and sourcing standards exist, few have been implemented across a significant number of operations.

Conflict-free standards, which are more limited in their scope have been implemented more extensively during the last years. While their focus is on issues related to conflict financing, and, tin, tantalum, tungsten and gold (henceforth referred to as 3T or 3TG) originating from the Democratic Republic of the Congo and its 9 neighbouring countries[8], their underlying architecture reflects the needs of approaches looking at the broader responsible sourcing. The challenges they contend with are thus similar, and their solutions have the potential to be transferable to a significant extent.

These approaches have been spurred primarily by Section 1502 of the US Dodd-Frank Act (DF1502), a regulation that requires all companies that make use of 3TG from DRC and neighbouring countries in their products and that report to the US Security and Exchanges Commission (SEC) to submit to the SEC a report that includes:

- A description of the measures taken by the reporting company to exercise due diligence on the source and chain of custody of the 'conflict minerals';
- The country of origin of the 'conflict minerals'; and
- A description of the efforts employed by the reporting company to determine the mine or location of origin of the 'conflict minerals' with the greatest possible specificity.

This requires downstream companies to map their supply chains to identify the source of their minerals and ensure that said sources are free of human rights abuses. The latter is done through the use of systems that satisfy the requirements laid out in the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas (OECD DDG).

Following legal action, the requirement to take an audit under DF1502 is in stasis for the time being, and its future is unclear under the current administration as in "*June 2017, the US House of Representatives voted to repeal this provision, and in September, approved a bill that would cut funding for implementation and enforcement of the provision; its future now depends on the decision by the US Senate*" (HRW, 2018:29).

The EU Conflict Minerals Regulation (EU CMR)[9] will mirror this approach, albeit with a broader geographical focus. Its reporting obligations will start on January 1st 2021.

While downstream implementation of responsible sourcing would take place in EU MS, a large share of EU mineral and minerals-containing inputs will come from countries with weaker governance, monitoring and enforcement capacities, as well as varying levels of civil society presence and involvement. Furthermore in a number of these countries a non-negligible to significant amount of minerals are produced by the Artisanal and Small-scale Mining (ASM) sector. In some cases, such as the DRC and Rwanda's 3T production, the ASM sector may even constitute the majority of the national production.

To date the existing responsible mining certifications that go further than conflict free certification have been issued for mine sites but have not been prominently linked to downstream users. In contrast the more limited

[8]These countries are referred to as *level 3 countries* by conflict-mineral standards. See http://www.responsiblemineralsinitiative.org/about/faq/smelters-or-refiners/how-are-country-risk-levels-determined/ for details. As accessed on the 03.05.2018

[9] Or, by its full name: *Regulation 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*

conflict minerals certifications, which link upstream certification to downstream assurance, have seen much wider implementation.

Hence this report looks closely at the conflict mineral experiences as they offer key insights and lessons learned on implementation challenges thanks to their more extensive implementation and the fact that they present a structure that can be used to link responsible mining practices of minerals in the upstream to downstream users through a similar combination of site certification/validation, traceability and due diligence.

2.2. Traceability and responsible sourcing

2.2.1. Artisanal and Small-Scale Mining and Large Scale Mining

As shown in Section 3.2.1 the type and size of operations on which responsible sourcing standards focus is key for their implementations, and while there are no universally recognised definitions of Artisanal and Small-Scale Mining (ASM) or of Large Scale Mining (LSM) it is nonetheless necessary to sketch out working definitions.

LSM is easier to define and commonly associated with large industrial operations. However, most criteria used to define the size of mining activities are found along a continuum with no natural breaks that could result in clear-cut and universal categories. As a result there is no universally accepted definition for ASM, a sector that includes both artisanal mining (AM), small-scale mining (SSM) operations, as well as their trading chains and supporting activities. This umbrella term encompasses a number of practices that can range from individual miners operating alone to sites grouping tens of thousands of miners and making use of machinery; it is generally understood in opposition to medium-scale mining (MSM) and LSM which operate with higher access to resources (mechanisation, geological information, skills, etc…) and that due to the scale of the investments needed cannot operate unless they are recognised as legal entities by host governments. ASM operations are estimated to produce 15 to 20% of the world's primary mineral output (IIED, 2013) and to employ directly at around 40 million people (IGF, 2017a). Through their numerous local linkages ASM operations sustain the livelihoods of an estimated further 150 to 170 million people (Hrushka and Echavarria, 2011), often in areas where no alternative source of employment is available.

Host countries often have their own legal definitions of ASM, generally based on production capacity, which can distinguish between AM and SSM. Given the multiplicity of meanings the term can have, this report uses a flexible definition that is aligned with both the OECD DDG and STRADE's Policy Brief 09 / 2017 on ASM.

- AM is poverty driven and the organisation of mining activities is not centralised but instead depends on the actors operating semi-independently from each other. While predominantly manual it can make use of machinery. Due to its poverty driven nature, legitimacy (and not legality) of the operations is a key concern from an intervention point of view. Most governments with significant AM sectors aim to formalise and transition them into SSM operations. While poverty driven, AM often generates more revenues than alternative livelihoods in remote areas (Bazillier and Girard, 2017).
- SSM is profit driven, generally heavily (if not fully) mechanised but can also rely on manual labour in some cases. Its coordination is centralised and legality of the operations is a key concern from an intervention perspective.
- ASM refers to the ASM sector within this report and includes AM and SSM operations, the trading chains that move the material up to the export point and supporting activities. ASM value and supply chains have a tendency towards being more complex and non-transparent than LSM chains due to the size and multiplicity of actors involved.

In the case of ASM operations, the distinction between mining operations and local communities is often much less clear cut that in the case of LSM, as ASM miners often belong to said communities and sustain other local livelihoods. ASM and LSM can be at odds as they hope to exploit the same mineral occurrences in areas of

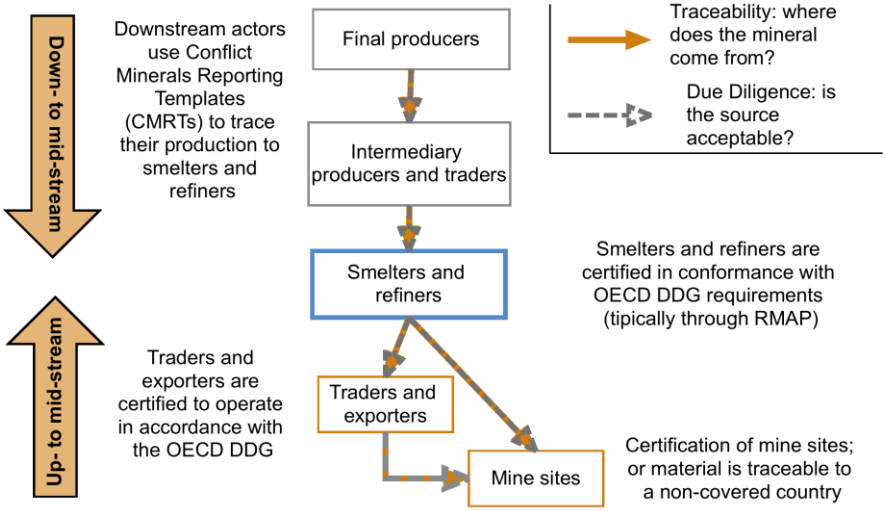
limited alternative livelihoods, albeit usually in different parts of the deposit. To mediate these issues the World Bank and the ICMM have issued the *Working Together* guidance (ICMM, 2008).

2.2.2. Responsible sourcing models

In theory, for a downstream company to ensure that its mineral sourcing has certain characteristics, such as being responsible or *conflict-free*, it would be necessary to trace its minerals down to the mine sites to confirm that production is responsible, an approach referred to as batch traceability. In practice however, due to the complexity of supply chains, supply chain due diligence has been divided between upstream (from mine to smelter) and downstream (from smelter to end-user), with the downstream sector focusing on understanding the complex chain of custody between manufacturers and smelters. Smelters have been the focus of intervention of supply chain initiatives as they represent natural choke points in mineral supply chains.

This due diligence and traceability is generally done through the use of specific templates (Conflict Minerals Reporting Templates or CMRTs), which allow companies to demonstrate conflict free sourcing in the most cost-effective way. However, this reliance on CMRTs has shown to carry the risk to make conflict-free efforts a "box ticking" exercise simply undertaken to achieve compliance, and thus distorting the implementation of the underlying *on-going process of identifying and managing risk responsibly*[10] put forward by the OECD DDG. Pragmatically companies reporting under DF1502 stop their traceability and due diligence efforts at the smelter level, or mid-stream.

Figure 2 - Traceability, due diligence and supply chains structure



As for smelters, they are required to establish that the material they source is free of human rights abuses. They do so by only accepting material that can be demonstrated to be free of human rights abuses through traceability (the material does not originate from a level 3 country) or additional due diligence (while the material originates from a level 3 country there are assurances that the material is free of human rights abuses – i.e. either the supplier or the entirety of the material have been certified as conflict free under a recognized standard). In other words "*while the OECD Guidance mandates for audits at the level of the refiner or smelter only, other initiatives may audit actors upstream in relation to a specific point in the trading chain* […] *or on specific issues* […]. *These upstream audits may be relied upon by the auditor of the smelter/refiner to save them carrying out additional actions. This helps by passing some audit costs up the supply chain and helps achieve economies of scale*" (Promines, 2015:39).

While smelters present natural choke points in mineral supply chain and as such offer the best point of entry to implement conflict free standards as cost-effectively as possible, their operations present major complications from a full supply chain traceability point of view. Often their operations require them to mix materials with different grades and origins to conform to their client specific demands. As such smelters act as black boxes, and traceability of the atoms in their products is lost once processed. Upstream traceability of

[10]See www.globalwitness.org/en/campaigns/conflict-minerals/civil-society-statement-10th-forum-responsible-mineral-supply-chains-paris-10-12-may-2016/. As accessed on the 30.10.2017

alloys is thus extremely complicated, while the traceability of non-alloys can theoretically be more realistically achieved, at a cost, through the implementation of material segregation systems. These issues make the implementation of full batch traceability to the mine sites from the downstream complex and costly if not outright impossible in the case of alloys or ASM sourcing [11].

Box 1 - Better Gold Initiative (BGI) for ASM

BGI is a private-public partnership between the Swiss Better Gold Association (SBGA) and the Swiss State Secretariat for Economic Affairs SECO. The project aims at increasing transparency, responsibility and profitability along the gold value chain by improving ASM production conditions and connecting the ASM operations directly to Swiss refiners. Thanks to fewer intermediaries and obtained VAT exemptions BGI provides ASGM miners with clear financial incentives. BGI supports the implementation of the OECD DDG and the Minamata Convention on Mercury. Implementation started in Peru in 2013, and has since been expanded to Colombia and Bolivia in 2017. The initiative works along three pillars:

- Production and certification to expand the supply of responsible gold, BGI supports AM and SSM operations in improving their technical, organizational, social and environmental performance. To this end, it supports participating mines in achieving a Fairtrade, Fairmined, or RJC certification. BGI's stepwise approach and involvement lowers entry barriers, allowing for the participation of a higher number of AM and SSM operations.
- Policy dialogue and cooperation with host governments to bring a common understanding of the drivers of responsible gold mining and simplify the ASM formalization process.
- Promote demand for Better Gold, SBGA members (refiners, jewellers, watchmakers, investors) commit to buying the Better Gold and reinvest a contribution of $1 per gram, into social and environmental projects in the mines and surrounding communities, further incentivizing participation of AM and SSM miners. In parallel, the SBGA aims at raising consumer awareness and engaging in a civil society dialogue.

While BGI has only been recently implemented it has shown that shortening supply chains is an idea well received by the market and has led to an increase in the number of refiners directly sourcing from Peru's ASM sector. As a result a significant number of AM and SSM miners now get higher prices for their gold. While for the industry, the fixed premium that includes all costs is an advantage compared to other certification systems where additional costs on top of the premium often occur (such administrative fees, etc.). BGI's key challenge is now identified as ensuring the articulation between an industry that traditionally plans with exact quantities and relies on steady supply and an ASM sector characterized by uncertainties and supply fluctuations.

An alternative to these systems can be found in *closed pipe* supply chains schemes. In these schemes produced material is physically separated and traceable from mine site to a particular step in the value chain. If that step is found in the downstream, physical separation has to be maintained during smelting/refining, and thus necessitates particular infrastructure and operational guidelines.

Closed-pipe supply chains are characterised by "*a limited and pre-determined number of actors with direct relation to each other – i.e. a single mine, a single exporter, a single trader, etc.*" (PPA, 2015) and typically sell their material to a pre-selected customer at a predetermined price. While more costly and complex to implement, these systems allow for better supply chain control and transparency, which is particularly relevant

[11] To illustrate this point: a Rwandan tantalum exporter recently reported to the STRADE team that his last shipment contained more than 200 different batches, each sometimes smaller than 10 kg, and sourced from different origins.

for high value/low volume minerals that present high infiltration potential[12], such as gold or diamonds, especially if those are issued from the ASM sector.

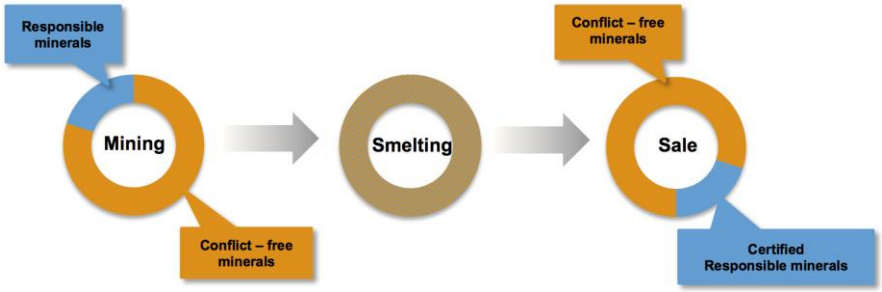
The initial implementation of technology-based standards has shown the potential to simplify the establishment of closed-pipe supply chains at lower costs than previously. Close pipe supply chains have also shown potential to work with lower value minerals when supply chains originate from LSM, are short, and business relationships are well established as these supply chains are very similar to the structure of a closed pipe supply chain with few actors in the up-, mid- and down-stream all linked by long term agreements, which result in stable, if not pre-determined prices (BGR, 2017b)[13].

To date existing closed-pipe supply chains supported by standards have a broader scope than simple conflict-free compliance, and as such are a step closer to the provision of responsible minerals as can be seen in the case of the BGI (see *Box 2)*.

Thus, while having the potential to bridge the gap between conflict-free mineral souring and responsible sourcing, closed pipe supply chains require considerably higher initial and ongoing investment (funds and time) from users interested in sourcing minerals, furthermore each such supply chain is unique as it is based on the contractual collaboration between actors: This makes them complex to scale up as a best practice, and likely not feasible to scale up via regulatory requirements, at least currently.

Complementing the aforementioned batch traceability approaches, which encompass closed pipe supply chains, certain supply chains could make use of mass balance approaches instead of guaranteeing the responsible sourcing of all of their minerals.

Figure 3 - The mass balance process



Under a mass balance approach a smelter will be able to demonstrate that a given percentage of the material it produces is composed by material responsibly sourced, while the rest of its production can still be demonstrated to be conflict-free and thus satisfying regulatory demands. Mass balance does not require any segregation or physical separation of materials or any special infrastructure to do so, it is a simple accounting measure based on in-flows of materials and out-flows of products as illustrated in the figure on the right.

Due to the lack of material separation in mass balance approaches, these are more adapted to final goods whose composition is not influenced by their origin and can be freely aggregated, such as electricity or metals rather than minerals whose chemical composition (such as coal or talc) or physical properties (such as sand) may vary depending on their origin.

Finally *book and claim* systems are sometimes mentioned as an alternative for sustainable sourcing. However these systems do not seek to have traceability, instead a company can obtain certificates for the volume of certified materials it wants to put into the supply chain, even though there is no assurance that the retailed products contain certified material (BSR and UN GC, 2014). Book and claim systems are thus seldom considered, if ever implemented, for mineral supply chains, where the objective is to ensure that negative

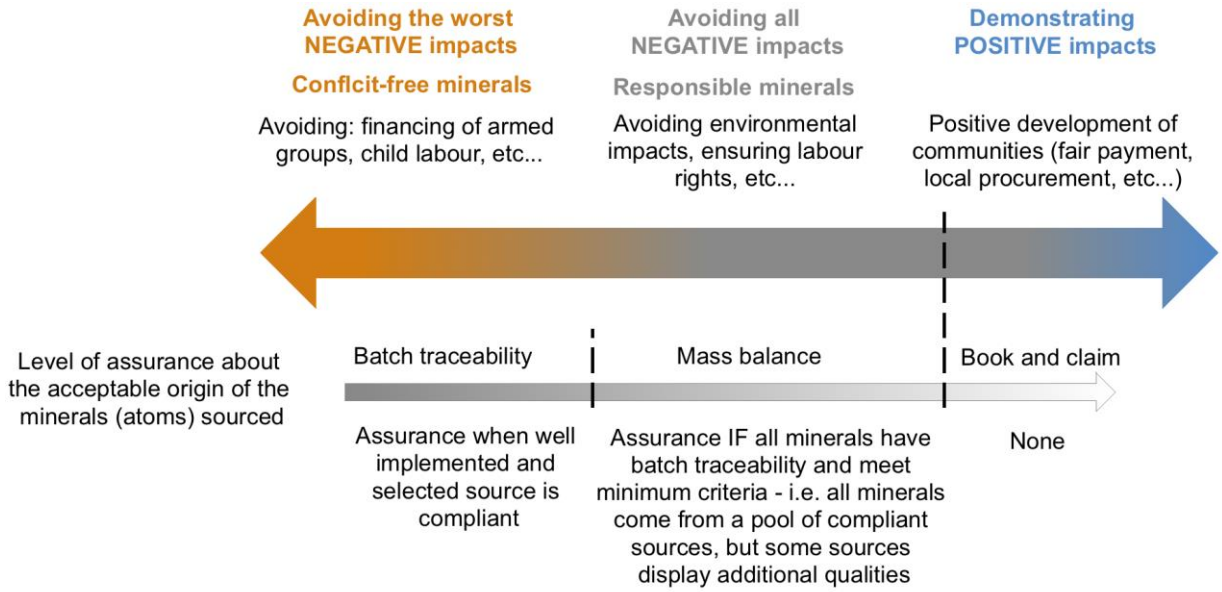
[12] Minerals that can more easily fraudulently integrate supply chains due to the limited quantities necessary for the fraud to be profitable.

[13] These types of relations exist in the natural stone market, where the XertifiX and Fair Stone standards are implemented.

impacts do not happen, as opposed to, for example, fair trade agricultural commodities where the seller aims to convey the positive impacts of its engagement, in which cases the characteristics of the actual goods purchased by the consumer, coffee beans in a coffee or atoms of tin in solder, do not matter.

To summarize the applicability of these three types of approaches, as illustrated in *Figure 4*, below: situations that require to demonstrate that minerals have not financed or facilitated, directly or indirectly, human rights abuses or other types of abuses require operators to ensure traceability down to the extraction site to ensure that the actual atoms purchased by the consumer are free of such associations, thus requiring batch traceability. Mass balance is a complementary approach that can guarantee that all minerals sourced are compliant with minimum requirements and that part of the production is also compliant with further demands (an approach compatible with *progressive standards*[14]), provided that at a minimum all minerals are demonstrably sourced from acceptable mines, thus requiring batch traceability. Book and claim on the other hand cannot substantiate such claims and is thus not compatible with compliance with the OECD DDG. That batch traceability is required to ensure compliance with the OECD DDG is reflected in this report's focus on batch traceability.

Figure 4 - Traceability approaches and assurance



2.3. Influences and stakeholders for responsible sourcing

A number of stakeholders representing government and international agencies, local and international civil society, private companies in host, transformation, production, and retail countries and consumers have a stake in the implementation of responsible minerals and the systems necessary to verify their production and sourcing. This report focuses on the principal stakeholders found in mineral supply chains so as to present a concise overview of stakeholders. In practice, the number of stakeholders found in mineral supply chains is higher and includes producing stakeholders in intermediate low labour-costs countries, as well as all livelihoods that depend on the ASM sector.

[14] See *Section 3.2.3* for details.

With the exception of final consumers, most stakeholders respond to a set of incentives that include demand driven adoption and the mitigation of regulatory, reputational, operational, or broad commercial risks. Yet the specific drivers behind stakeholders' actions vary.

EU consumers are often highlighted as one of the potential drivers for standard implementation through their demand for responsible minerals. While communications from NGOs on issues related to human rights violations in mineral extraction often target consumers to trigger downstream company action[15], it is not evident at the time of writing that strong consumer demand for responsible minerals exists, even in products where there is a direct connection with the mineral, such as electronics. However consumer outcries against certain practices have been seen impacting the brand and reputation of companies using non-responsibly sourced material, as the recent outcry about child labour in cobalt demonstrates (Amnesty, 2014; Amnesty, 2016). Consumer demand for responsible minerals is even less likely in industries that are significant consumers of minerals but where the consumer has a more tenuous connection to the minerals (aerospace) or less influence (real estate).

Due to its luxury status, direct connection with the products, and heavy use of narratives, jewellery is perhaps the industry with the biggest potential for consumer demand and yet demand for "fair gold" is very low, even in Germany, a country with high consumer awareness for fair trade and production issues.

Downstream companies using minerals and metals include both large-scale multinational companies and SMEs. The latter constitute 99% of the EU companies[16] and are noted by the European Commission as being a *hard-to-reach group* due to their "*sheer numbers and diversity, combined with the fact that their owners and managers are often very busy and intensely focused on ensuring the short-term survival of the enterprise*...", thus SMEs' main concerns are business related (BGR, 2017a). As SMEs need to focus their limited resources on core businesses and regulatory compliance (RINA Consulting, 2017), it is unlikely they will engage in responsible mineral sourcing unless consumer or regulatory demands mandate it. SMEs are typically collectively represented by industry associations or chambers of commerce, who also act as contact points and information relays to reach the numerous SMEs present throughout MS' territories.

While large companies can dedicate more resources to responsible minerals sourcing, the lack of a market incentive to do so has so far limited their engagement on the matter. As consumer demand for responsible minerals is not significant at this time, there are currently no hard commercial incentives for companies to go over and beyond regulatory compliance and establish full traceability of their materials up to the mine site or undertake actions towards the production of responsible minerals. The companies that are working towards the implementation of full traceability, and in some cases implementing closed-pipe supply chains, are not doing so for commercial reasons as product differentiation based on the sustainability of minerals is not relevant to consumers[17].

While the existence of consumer demand for responsible minerals is unlikely to be strong enough to result in product differentiation, and thus in changes in sales, consumer outcry has an impact on companies' reputation and brand value, something that can be of extreme importance to certain large companies. However thanks to their available expertise and reserves these companies are better prepared to weather a backlash related to responsible mineral sourcing than SMEs that might disappear if they lose a key client impacted by these concerns. However, companies that are interested in engaging with the upstream find it very difficult to do as

[15] See for example Amnesty (2016).

[16] Throughout this report the EU definition of SMEs is used, namely enterprises that have fewer than 250 employees and an annual turnover of equal to or less than 43 million EUR. See http://ec.europa.eu/growth/smes/business-friendly-environment/sme-definition_en. As accessed on the 30.10.2017

[17] Communications with Michèle Brülhart, Technical Director of the EICC.

their leverage in the downstream rarely translates to the upstream[18]. This is well illustrated by a MISEREOR (2018) report, in which it can be inferred from the 9 respondents' answers that only very few have an overview over their entire supply chain (iron ore from Brazil, copper from Peru and Chile, silver from Mexico and Argentina, bauxite from Guinea, and rare earths from China) and that while they all recognize the importance of responsible sourcing and have related codes of conduct[19] they also perceive that they are too far away from the upstream or do not have enough influence to effectively change their suppliers' suppliers practices.

With a few exceptions there has been little demand by downstream companies for information more detailed than required by CMRTs fillings. Yet, companies that implement responsible sourcing practices might beneficiate from operational advantages as, by gaining further insights and a full overview of their supply chain these companies mitigate risks of supply interruption, inefficiencies, and can proactively spot opportunities and gain competitive advantages, as well as communicate more efficiently about their engagement.

Smelters and refiners represent natural bottlenecks in mineral supply chains and are thus vital articulations/pressure points. Their interests are business driven and to date experience has shown that any further involvement than the current conflict free compliance will only be triggered by sufficient downstream demands or regulatory demands. Expert interviews in host countries indicate that most smelters and refiners sourcing from ASM operations are content with demonstrating compliance with host-country legal requirements, even in cases where adhering to the letter of the law alone does not guarantee compliance with OECD DDG requirements. Smelters and refiners that have made public commitments towards better sourcing and have implemented related policies are noted as going further than required by host-country law.

Smelters and refiners taking additional steps are doing so for a number of reasons, pre-eminently to diversify their supply and mitigate the risks of doing so through ASM sourcing. There is a perception among these players that the EU CMR will not result in any changes for themselves as their systems are much stronger than what will be required for compliance; however operators that will not get on board by then will fall behind and will find it increasingly difficult to catch up. It is perceived that the EU CMR, and similar responsible sourcing requirements or incentives, will make companies' compliance with their own policies easier as other operators will have to implement such systems as well. However responsible operators feel that there should be a spreading of responsibilities across the supply chain instead of focusing so heavily at the smelter level[20].

In the case of gold it has been noted by refiners that responsible sourcing from ASM (through shortened supply chains) is currently being done at a costs as the necessary due diligence and logistics involved do not make it a commercially viable operation yet. Responsible gold ASM supply is in its infancy, as all engagements are very recent, and is seen as an investment, with positive social impacts that are aligned with these refiners' CSR[21]. For these refiners' due diligence process to select ASM mines, certifications can be helpful, although not necessary. Standardised due diligence processes are conducted regardless of the certification status of mines, within this context certifications help to decrease the costs of undertaking due diligence as they make required information more readily and directly available[22].

EU agencies at the MS and EU level will work to implement relevant regulations and support EU businesses in complying with regulations related to the EU CMR. If the operationalized framework under which the EU CMR will be implemented requires it these institutions will also support efforts towards the sourcing of responsible minerals.

[18] Communications with Michèle Brülhart, Technical Director of the EICC.

[19] Some of them including clauses on supply chain due diligence and social and ecological responsibility in their contracting.

[20] Interview with a representative of a major gold refiner member of the Swiss Better Gold Association (SBGA).

[21] Interview with a representative of a major gold refiner member of the Swiss Better Gold Association (SBGA).

[22] Interview with a representative of a major gold refiner member of the Swiss Better Gold Association (SBGA).

Mineral exporting companies in producing countries are impacted directly by responsible minerals, or conflict free demands and present another critical articulation as their conduct can either strengthen the implementation of standards or sustain the existence of parallel markets that weaken incentives for responsible mineral production and trading.

In the DRC and Rwanda, a few exporters have been seen as supporting implementation of conflict free mineral chains, while others have repeatedly skirted regulations and helped to sustain parallel markets and weaken standards' implementation (SARW, 2014).

Host governments and implementing agencies in host countries have an intrinsic interest in supporting responsible sourcing, and currently conflict-free sourcing, as it mitigates the negative effects of extraction while maximising its positive effects. However it should be noted that the interests of its implementing agents might be contrary to those of said institutions, in particular when salaries are paid irregularly (see the *DRC Country Capsule* for further details). Furthermore, there can be vested interests in favour of not implementing transparency-requiring policies at the highest level in certain host countries, as in a number of cases high-ranking civil servants have been shown to have direct stake in mineral projects[23].

Financiers and investors[24] differ markedly based on the type of finance they provide and the type of operations they finance or invest in (up-, mid- or downstream). Overall however technical considerations for investment have expanded for all type of actors.

In the case of investment in mining venture, these have expanded to now include environmental, social and governance (ESG) considerations such as mine closure, social license to operate or local development as a way to ensure that mines operate profitably. Furthermore financial institutions that are signatories to the Equator Principles must apply a number of specific ESG demands to the projects they finance[25].

In turn dedicated companies provide ESG information to financiers in order to help investment decision-making. There are however few indications that this initial due diligence is followed upon at later stages, and upon review it appears that actions on ESG commitments from companies tend to fall short for a number of reasons, such as poorly worded and/or difficult to comply with commitments (Mining Journal, 2018). In the eyes of financiers full compliance with ESG requirements is seen as beneficial as it allows to factor-in ESG risks and thus adequately assess risks linked to ESG issues, including suspension of operations (by regulating authorities or through community protests) or regulatory impacts, among others (Mining Journal, 2018). Similarly Henisz, et al. (2013) have shown that obtaining a social license to operate increases the valuation of mining assets[26]. Comments from a source working in the mining private equity sector[27] said that while ESG do factor-in in investment decisions most sustainability heads do not sit in the investment panel but rather with the communication department.

[23] We refer the reader to NRGI (2017) or CRG (2017) for a number of examples illustrating this challenge.

[24] Note that this position is difficult to gauge within the limits of STRADE's work and fully dedicated research is likely to be necessary. Limited insights into these stakeholders' preferences are due to the impossibility to establish dialogue with more than one such actor (representative of a bank active in mineral supply chains through indirect financing (actions/bonds, not loans) of companies in the downstream, but sourcing material for their operations at the mid- or up-stream). However, complementing this interview, research, industry reports, and recent announcements help to draw a rough picture of stakeholder interest in the sector.

[25] See the *Key Underlying Standards* section.

[26] Study conducted on 26 gold mines owned by 19 publicly traded firms over the period 1993–2008.

[27] Information collected through a contact from the Sustainability Head of a reputed Private Equity firm who wishes to remain anonymous.

According to the interviewed investor in downstream companies DF1502 and now EU CMR have helped to bring transparency to the industry from an ESG point of view and it is now easier to collect this information, in particular for companies that issue CMRs. As an investor their role is to require companies to be aware of the risks from raw material sourcing, costs greatly reduced if the company issues CMRs. Both DF1502 and EU CMR are aligned and complement a trend for more transparency and information, which is also being asked by investors. The recent willingness of certain banks to invest in ASM gold at the refiner level has not been driven by the emergence of certifications, instead inversion is driven by the quality of refiners' due diligence[28]. Yet, as noted by a sustainable investor[29], with the exception of the LBMA there are no responsible seals for exchange-traded securities, something perceived as a gap by some in the industry.

In a nutshell, while the information that is provided by certifications as well as its level of confidence has the potential to be useful and thus welcomed by financiers they are not yet used by the industry. It can be speculated that this could be related to both the limited number of non-ASM certification having taken place, as well as the need for investment to take place at earlier stages of mines life cycles than certification.

At the same time there are forthcoming requirements from the London's Metals Exchange (LME) for minerals in the exchange's warehouses to be sourced using OECD DDG aligned standards[30]. LME's chief executive Matthew Chamberlain declared that "*We now believe that responsible sourcing is a sufficiently widespread requirement among most users of our metal that it makes sense to commit to embedding those standards into brand listing requirements*".

To that effect the LME will publish a white paper on responsible sourcing in the coming months, which will specify a timetable for compliance for companies. Failure to comply will result in their metal being removed from the exchange's warehouses[31], without overstating the role of the LME[32], these requirements might change the outlook from the sector on certification and due diligence schemes in the short term.

NGOs and international donors have a number of positions depending on their areas of focus. However they are generally in favour of more responsible mining practices and have proven instrumental to the development, monitoring and adoption of the current conflict-free standards. NGOs tend to take strong positions towards the implementation of standards, favouring strict regulations over industry self-regulation.

Key stakeholders excluded from this work package's analysis include **upstream AM, SSM and LSM producers** as well as **local mineral traders**. These stakeholders were not included in this analysis as they do not represent coherent positions, instead each company operates under different business models and incentives, and characterising these differences is a project in its own[33]. Similarly **insurers** (who would be a sub-group within investors) have not been considered as part of this analysis due to the lack of available information and contacts.

[28] Interview with a representative of a major gold refiner member of the Swiss Better Gold Association (SBGA).

[29] Sustainable investor, in Projekt-Consult (2017)

[30] Following the public outcry on child labour issues in the global cobalt supply.

[31] See: Financial Times, 2018. LME to launch responsible sourcing plan after child labour fears. Accessible via www.ft.com/content/1019a246-4230-11e8-803a-295c97e6fd0b, as accessed on 30.04.2018

[32] Only 5 to 10% of non-ferrous metals go through an exchange, the rest is traded directly between producers and buyers. This 5-10% of metals however set the global price for these commodities (France Culture podcast "Un monde sous perfusion métallique (2/4): Le marché des métaux sous tension", 30.01.18. Comments from Didier Julienne: 10:12"-10:30". Accessible via www.franceculture.fr/emissions/cultures-monde/cultures-monde-mardi-30-janvier-2018, as accessed on the 25.03.2018)

[33] See MMSD North America (2002) for an example of such as study, focusing on the business models and drivers of US and Canadian companies.

2.3.1. Current conditions in the EU

2.3.1.1. Capacities

EU and MS agencies

Currently capacities in EU agencies to oversee mineral due diligence and traceability are limited as their development will follow the designation of MS agencies in charge of EU CMR implementation in December 2017 and follow-up gap assessments. While the issue of mineral traceability will be new to most of these agencies, MS agencies already possess transferable experience from related regulations such as the: EU Timber Regulation (FLEGT), Restriction of Hazardous Substances Directive (RoHS), and Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

There are also indications that DG Grow will take action, starting in 2018, to offset the burdens placed on SMEs by the EU CMR. This will include information provision and technical assistance, but no further details or precisions are available at the time[34].

Companies

Current demands imposed on EU downstream companies by DF1502 implementation have shown that (BGR, 2017a) large EU companies have the capacities necessary to undertake traceability of their minerals up to the smelter level as well as the leverage necessary to entice compliance and incentivize data sharing from their suppliers as part of their traceability and due diligence process. While SMEs tend to experience a number of issues in achieving regulatory compliance with DF1502, issues closely aligned with their perceived gaps and limitations in regards to forthcoming EU CMR compliance remain as illustrated by RINA Consulting (2017). Their main activity consists in filling CMRTs, and they have a hard time doing so as:

- Timeframes given by clients can be too short;
- Non-transmission of information from a single supplier can block efforts across an entire supply chain;
- Given the flexible and non-prescriptive nature of the OECD DDG, there is a lack of understanding as to which management systems need to be in place and to which level of detail[35];
- They lack capacities to complete the required reporting, in particular for smaller SMEs.

To date, neither large companies nor SMEs have reported experiencing positive outcomes from their conflict-free reporting, and as strong consumer demand for responsible minerals has not been identified this trend is likely to carry over to the broader responsible minerals category. Coupled to the difficulties associated with undertaking even basic reporting and their reduced leverage further upstream, due to the volume of purchases they individually command, this dissuades SMEs to seek responsible sourced materials or influence upstream producers over and above legal requirements or what is commercially sound and transforms compliance with conflict-free sourcing in an administrative box-ticking exercise first and foremost.

2.3.1.2. Relevant regulation at EU and MS level

While there is currently no regulation regarding the responsible sourcing of minerals in the EU, different elements partially amounting to such a framework can be found between EU and different MS level regulations.

As mentioned in the previous section the EU CMR has now started its implementation and will provide an initial base for responsible mineral sourcing. The EU CMR is currently complemented at the MS level by the French

[34] Communications with Malwina Nowakowska, Deputy Head of Unit, Resource Efficiency and Raw Materials, DG GROW

[35] A difficulty also experienced by smaller SMEs implementing the RJC according to communications with Bethan Robson Herbert, certification and impacts manager at the RJC.

due diligence rules[36], the UK anti-slavery act[37], as well as the European directive on non-financial reporting[38] at the EU level.

These existing legal frameworks offer a possibility to partially legally anchor responsible mining in the EU, likely a necessary measure to promote responsible sourcing in light of the lack of consumer driven uptake. They are described in more detail in the STRADE policy brief *Minerals and metals from non-EU countries: Europe's role and responsibility for positive change in industry supply chains*.

Furthermore according to NGOs active in the sector legal anchoring will strengthen adoptions as it offers a legal basis for enforcement and sanctions[39]. Illustrating this argument, is the US' *California Transparency in Supply Chains Act* which has enabled the (indirect) prosecution of companies under business law: "*Recently, several class action lawsuits were brought against large corporations based on California business and competition laws on the basis of their statements that their businesses were human trafficking and slavery free, sometimes based on requirements of the aforementioned California Transparency Supply Chain Act. On August 19, 2015, a California resident sued Costco Wholesale, a corporation incorporated in Washington State. The federal action filed in San Francisco also alleges that Costco knows that the feed meal for farmed prawns is the product of pirate fishing and the use of "ghost ships." […] the causes of actions alleged that the corporations violated the California Business and Professions Code prohibitions against unlawful business acts and practices by sourcing products like seafood or chocolate that actively contributes to the use of illegal slave labour, and by falsely claiming the company enforces its policies against such slave labour. The lawsuits also all claim that the corporations violated the California Business and Professions Code prohibitions on misleading and deceptive advertising and the California Consumer Legal Remedies Act prohibitions against unfair and deceptive competition by products that are tainted by the product of slave labour*." (GITOC, 2016:42-43)

2.4. Implementation experience of supply chain due diligence by European industries – the case of Germany

2.4.1. German industry perspective

Due to a long history of research in the issues of responsible raw materials sourcing and mineral production, as well as investment, and keen interest in the subject from the public and private sectors as well as consumers Germany is one of the best-positioned countries in the EU in regards to responsible mineral sourcing.

Initially triggered by (US) regulatory demands, a number of German flagship companies are now members of the RMI, on the LBMA good delivery list, or RJC certified. Since then additional long-term considerations have strengthened this engagement and made it a self-enforced best practice necessary to mitigate risks and ensure that German companies remain competitive and are not falling behind in terms of competitive advantages against US companies. Within this context the German industry supports and welcomes the EU CMR as it is perceived that in addition to putting all companies on the same page regarding conflict-free sourcing (and thus making CMRT collection easier) it will also be accompanied by implementation support from the EU.

To date, DF 1502 triggered due diligence has been performed through the use of CMRTs and has stopped at the smelter level. Difficulties have been the same as the ones impacting the SME sector at the EU level; while larger companies have often taken the role to support SMEs in order to receive better CMRTs. At the same

[36] Full legal text is accessible through www.assemblee-nationale.fr/14/ta/ta0843.asp. As accessed on the 30.10.2017

[37] Full legal text is accessible through www.legislation.gov.uk/ukpga/2015/30/contents/enacted. As accessed on the 30.10.2017

[38] *Directive 2014/95/EU*

[39] For example see Public Eye (2015) report and recommendations.

time certain companies have said to take conflict minerals legislation know-how (i.e. how to fill a CMRT) into account during their supplier selection process. For 3Ts RMAP is the only system currently being used due to its early implementation and uptake, while for gold RMAP is complemented by the LBMA.

Based on their experience with conflict-free mineral sourcing, German companies see a few challenges:

First and foremost they lament a lack of more precise information about the upstream and are conscious that certifications in the upstream are not always representative of a very dynamic sector that changes at a very short notice. This shortcoming reinforces the perceptions of some that long-term direct relationships with the upstream could be more effective than relying on certifications, thus making the development partnerships a very interesting option to work hand in hand with the upstream.

Second there are some concerns as to how conflict-free mechanisms that were very tied to certain geographies will cope with the scope extension that will be introduced by the EU, in particular for gold, a metal that is already very complex to trace and certify and plays a much greater role in financing conflicts and armed groups than 3Ts.

However from the customer side this awareness is more related to products customers can have direct contacts with, such as unprocessed foodstuffs. Concurrently there is a lack of awareness about the presence of mining produce in everyday items, such as food packaging or paper (aluminium and talc respectively).

2.4.1.1. Responsible gold demand

In the case of the gold used in jewellery, arguably the metal with the clearest association between its final products and production, gold certified as responsible has been imported in Germany, but only in very limited quantities. In 2016 for example gold from Fair Trade mines totalled 30kg[40] out of the 10.3t imported (Gold.de 2017b) in the country (no statistics are available regarding Fair Mined gold).

Exact reasons behind this limited uptake are not yet fully understood but part of it might be linked to the higher cost of fair trade gold, something the market is not prepared to pay for to date (Rüttinger *et.al.*, 2015). This reluctance from jewelers to pay a premium might in turn be both based on and compounded by lack of awareness among a large proportion of consumers as well as the irregularity and limited supply that characterize ASM certified gold production.

As a result business-to-business and regulatory demands are once again likely to be the driver for responsible mineral sourcing[41].

[40] Based on interviews from sector experts.

[41] Communications with Dr Fiona Solomon, CEO of ASI.

3. Overview of due diligence and certification initiatives

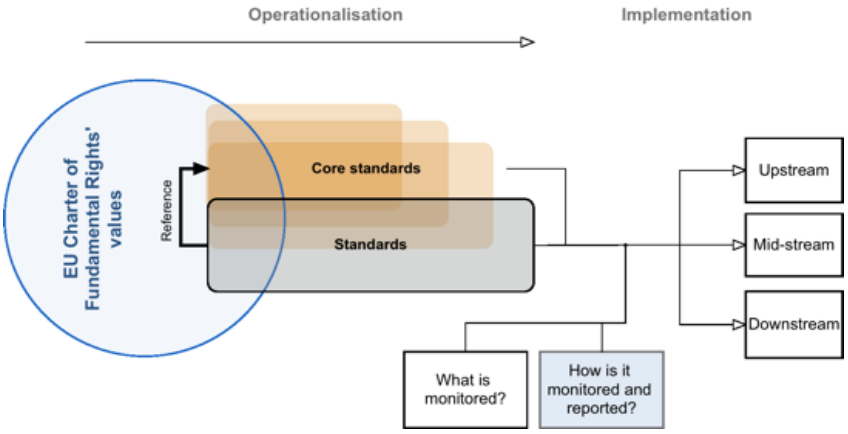
Currently a significant number of initiatives with the objective to mitigate the impacts of mining practices or implement traceability and due diligence across mineral supply chains are being implemented[42]. The STRADE Policy Briefs 07/2016 and 09/2016 offer an overview of the content of these standards. Their sheer number impedes a meaningful analysis of their implementation within the scope of this project. Building on the initial work of the STRADE policy brief 03/2017 this report analyses the implementation successes of a few selected standards based on identified functional characteristics with a specific emphasis on upstream field implementation – i.e. standard characteristics that influence their implementation and their linkages to the downstream sector via traceability and due diligence efforts.

As this report focuses on standards implementation in the upstream and how they connect to the downstream this analysis looks at fully operationalized standards that can themselves be implemented directly. All these standard are in turn based on **core standards** that are generally less specific on how to achieve their stated aims. However it should be noted that certain fully operationalized standards have become core standards in their own right. As such the distinction between the two can be questioned, yet this analysis framework proves helpful, as shown in the upcoming sections.

3.1. Key underlying standards

Core standards are standards that are recurrently referred to by other standards, they can also be integrated into government regulation (as in the case of the OECD DDG into the EU CMR).

Figure 5 - Core standards, standards and operationalization



These standards operationalize values and commitments within an actionable framework, but levels of operationalization can vary, with some core standards offering broad guidelines, such as the Voluntary Principles on Security and Human Rights (VPs) while others are fully operationalized and can be audited/evaluated against, such as RJC CoP or GRI MMS for example[43].

At a minimum, core standards operationalize a set of values that signatories commit to uphold through their operations. Certain core standards are built with enough level of detail that they can be applied directly and certifications can be conducted against them, while other core standards are designed with a lesser level of detail and define a broader framework within which practices ought to take place. In other words the less operationalized they are, the more they prescribe what needs to be done but not how it should be done.

[42] BGR (2017b)'s study looks at 19 standards, to which can be added the BSP (see the corresponding section in this report), and national mineral registration schemes such as the Colombian RUCOM. Furthermore ancillary standards can be constructed as related to the sourcing of minerals and their extraction conditions, such as the construction sector's Leadership in Energy and Environmental Design (LEED) standard.

[43] See following section for further information on these standards.

Core standards typically apply to all mineral commodities and geographic focuses due to their typically lower level of operationalization and specificity. As a result their implementation requires tailoring to reflect the specifics of certain mineral chains, either via supplements to said core standard[44], via more operationalized standards that specifically refer to the core standards, or via implementation guidelines designed by third parties[45].

They thus offer stable reference points that are widely shared across the different existing standards and provide a basis to define what minimum requirements mineral sourcing operations should comply with. This analysis will briefly present a selection of the most relevant core standards underlying and influencing:

- Conflict mineral instruments and regulations (the OECD DDG and CCCMC DDG);
- The majority of human rights commitments relevant to companies (Guiding Principles);
- The majority of commitments regarding the use of security forces (VPs);
- The responsible financing of extractive projects (IFC PSs, and the derived Equator Principles);
- A large portion of the world's LSM production of various minerals (ICMM SDF);
- The reporting of CSR activities and impacts (GRI MMS).

3.1.1. The OECD Due Diligence Guidance

The *OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas* (OECD DDG) is a government-backed multi-stakeholder initiative on responsible supply chain management that has become the underlying standard of a significant number of mineral certification schemes and audits[46], as well as of a number of companies' corporate policies regarding mineral sourcing from conflict or high risk areas (CAHRAs). To date the OECD DDG is arguably the most influential and widely recognized standard for responsible mineral sourcing. The OECD DDG is in its third edition, and now encompasses all minerals and CAHRAs.

The OECD DDG provides a set of minimum standards and guidelines for companies to ensure that they do not finance conflict or human rights abuses through their mineral sourcing. It is a flexible five steps framework that can be adapted to the needs of any company[47]. The OECD DDG focuses on issues of: human rights, provision of security, forced and child labour, legality of operations, and payment of taxes.

A tailored version of the OECD DDG has been designed to confront the specific issues associated with child labour: the *OECD Practical Action on WFCL Guidance*, which uses the framework of the OECD DDG and focuses on this single risk and its remediation strategies.

3.1.2. CCCMC Chinese Due Diligence Guidelines

The China Chamber of Commerce of Metals, Minerals & Chemicals Importers and Exporters' (CCCMC) *Due Diligence Guidelines for Responsible Mineral Supply Chains* (CCCMC DDG) also provides a set of minimum standards and guidelines to support company efforts in identifying, preventing, and mitigating the risks of directly or indirectly contributing to conflict or human rights abuses. Primarily based on the OECD DDG as well as the UN Guiding Principles on Business and Human Rights, the CCCMC DDG also includes with a clearer

[44] For example OECD DDG's *Supplement on Tin, Tantalum and Tungsten*, and, *Supplement on Gold*.

[45] To illustrate, in the case of the VPs this would be DCAF and ICRC's toolkit on *Addressing Security and Human Rights Challenges in Complex Environments*.

[46] Including the: CCCMC DDG, RJC COP, RMAP, LBMA's Responsible Gold Guidance, BSP, and iTSCi.

[47] This flexibility has also shown to pose problems to SMEs as discussed in the Current conditions in the EU section.

focus issues related to indigenous rights, pollution, and biodiversity conservation, among others. These risks, which are not considered core OECD DDG risks, are referred to as *type* II risks.

While flexible in its minerals and applications, it is currently focused on the 3TG and cobalt supply chains. Supported by the Chinese Ministry of Foreign Affairs, the CCCMC DDG ambitions to become the go-to standard for Chinese companies operating abroad.

The STRADE Policy Brief 03/2018 on *'China's approach towards responsible sourcing'* provides more details on the CCCMC DDG[48].

3.1.3. UN Guiding Principles on Business and Human Rights

The UN Guiding principles on Business and Human Rights (Guiding Principles) are the leading core standard underlying business and human rights commitments at both the State and company level. The Guiding principles are the first corporate human rights responsibility initiative to be endorsed by the UN. The Guiding Principles are non-mandatory and designed to work as a whole with the objective to "*achieve tangible results for affected individuals and communities, and thereby also contributing to a socially sustainable globalization*" (Guiding Principles, 2011:1).

The Guiding principles are structured along "Foundation Principles" highlighting the aims of the principle and its framework and "Operational Commitments" that operationalize further the stated aims and framework. While the Guiding Principles are non-binding, a UN initiative is currently seeking to craft a binding international treaty on business and human rights, whether this effort will prove fruitful is yet unclear[49].

3.1.4. Voluntary Principles on Security and Human Rights

The VPs are a set of voluntary principles born from a dialog between companies in the extractive sector, NGOs, and the governments of the US and the UK. The VPs are a set of principles whose application aims to asses and mitigate the risks of human rights violation in the provision of security, both from public and private forces, to extractive operations and when necessary to respond appropriately.

The VPs are the sole human rights guidelines designed specifically for the extractive sector and have seen adoption in other sectors due to their demonstrated usefulness.

3.1.5. IFC Performance Standards on Environmental and Social Sustainability

The IFC's Performance Standards (PSs) are the part of the IFC's Sustainability Framework directed towards its clients. The PSs provide guidance on how to identify risks and impacts, and are designed to help avoid, mitigate, and manage risks and impacts as a way of doing business sustainably. Their application is a requisite for IFC clients throughout the life of an IFC investment, and is imposed in order to manage environmental and social risks and impacts, and enhance development opportunities.

The PSs look at: environmental and social risks and impacts; labour and working conditions; resource efficiency and pollution prevention; community health, safety, and security; land acquisition and involuntary resettlement; biodiversity conservation and sustainable management of living natural resources; indigenous people's performance; and, cultural heritage.

[48] Accessible via http://stradeproject.eu/fileadmin/user_upload/pdf/STRADE_PB_03_2018_China_responsible_sourcing.pdf. As accessed on 16.05.2018

[49] See www.lexology.com/library/detail.aspx?g=9e9b67b0-8bb7-4c94-9cd3-12dca626676a for further details. As accessed on the 14.12.2017.

3.1.6. Equator Principles

The Equator Principles are a risk management framework currently adopted by 92 financial institutions in 37 countries based on the IFC PSs. This framework requires its signatories to determine, assess and manage environmental and social risk in the projects they finance.

The Equator Principles are primarily aimed at providing a minimum standard for due diligence to support informed decision-making and to reduce social and environmental risks in investment projects. They are applied to World Bank financed projects, publicly supported projects from OECD member states, and, by all international private and public banks signatories to the Equator Principles.

3.1.7. International Council on Mining and Metals

Created in 2003 and refined in 2015, the International Council on Mining and Metals (ICMM) 10 Principles are a required commitment for all ICMM members, they represent a best-practice framework for sustainable development in the mining and metals industry. The 10 principles aim is broad, looking at issues ranging from local communities development to environmental impacts or security while paying heed to the need for tailored approaches that integrate perceptions from varied local stakeholders, including those with special cultural requirements such as indigenous peoples.

The 10 Principles are benchmarked against reference international standards, namely the: Rio Declaration; Global Compact; OECD Guidelines on Multinational Enterprises; World Bank Operational Guidelines; OECD Convention on Combating Bribery; ILO Conventions 98, 169, 176; and the VPs. Its reporting is done through the Global Reporting Initiative reporting indicators.

3.1.8. Global Reporting Initiative Mining and Metals Supplement

The Global Reporting Initiative (GRI) Mining and Metals Supplement (GRI MMS) is a fully operationalized core standard that is the result of a collaboration between the GRI and ICMM to ensure that mining and smelting operations possess a framework for reporting that is compliant with the GRI guidelines. In itself the GRI MMS does not directly prescribe actions to be undertaken by companies, but only a format within which to report their actions, including clearly defined performance indicators.

The GRI MMS are structured around a core of mandatory disclosures and include additional voluntary disclosures for different "levels" of transparency and compliance ranging from C to A^+. The EU commission is currently developing flexible non-binding guidelines on non-financial reporting for public-interest entities based on existing EU directives[50] that are compatible with GRI reporting (BGR, 2017).

3.2. Functional properties of due diligence and certification initiatives

While standards applicable to responsible mining differ markedly, all standards are composed of their content (*what* is it that the standard monitors/mitigates?) and their functional characteristics (*how* is it monitored?) as illustrated in *Figure 2*. Past studies have looked at both the content of standards, their scope, and their geographical reach[51] as well as functional traits for the adoption[52] of sustainable standards.

[50] Specifically, the *EU Accounting Directive* (2013/34/EU) and the *EU Non-Financial Reporting Directive* (2014/95/EU)

[51] Most recently BGR (2017b) *Sustainability Schemes for Mineral Resources: A Comparative Overview*

[52] Such as: Stetter and Zangl, (BGR) 2013, *Certifying Natural Resources: A Comparative Study on Best Practice and Future Scenarios for the Certification of Trading Chains in Mineral Production*; and, Mori Junior, Franks, Ali, 2016, *Sustainability certification schemes: evaluating their effectiveness and adaptability*.

The analysis undertaken in this reports builds on the latter and more specifically looks at the functional traits that have led to successful implementation in the upstream – i.e. in the field – and how results can be linked to downstream use.

To be considered successful a standard needs not only to be, but also to demonstrate[53] that it is (BGR, 2013):

- Effective, when it produces positive change on the issue targeted through a combination of:
  - Compliance – compliance with the standard is not a rubber stamp procedure that is used to greenwash operations but leads to better outcomes. Which can be verified and communicated
  - Impact – a substantial number of actors implement the standard and the standard is scalable
- Legitimate, when the standards authority is acknowledged by stakeholders both at the:
  - Procedural level – stakeholders acknowledge the legitimacy of the standards' standard setting procedure
  - Substantive – stakeholders acknowledge the legitimacy of the standards' content
- Efficient, when the standards is both able to:
  - Adapt its content and procedures to reflect changing situations
  - Reach financial equilibrium.

To be implemented in the complex and difficult environments, in which they operate across global supply chains, standards must make critical technical choices, which impact how they perform on the ground and how they can react to challenges. Choices implemented at *critical junctures* such as the design and initial implementation of a standard are very resilient to change and create path-dependent effects on the standard along its operation period (Bloomfield and Schleifer, 2017). Based on comparative studies on the effectiveness of sustainability certifications from the BGR (2013[54], 2017b) and CSRM (2015), this report identifies the following technical characteristics as being influential in standards' upstream implementation success:

- Their application scope: do they focus principally on LSM or ASM operations?
- Their implementers and available support: is the production of data and the conduction of evaluations/certifications conducted by local government agencies or by third parties (NGOs, private companies, or independent auditors)? Furthermore do implementing operators have access to an experienced partner that provides support during implementation?
- Their approach: Do they offer a progressive or incremental approach to certification?
- Their regulatory base: are they driven by voluntary commitments or regulatory requirements?

As standards are being more and more technology oriented to facilitate their uptake, as illustrated by the recent creation of online tools such as EICC's Risk Readiness Assessment, we believe that it also relevant to add the following characteristic to the list:

- Their data collection and dispersion methods and their interoperability with digital platforms

[53] Standards that are perceived to be non-sustainable or ineffective can be deserted by their stakeholders, and progressively lose legitimacy and financial sustainability. Thus creating a self-fulfilling prophecy, or accelerating a decline that could have been mitigated and controlled with more time. A challenge illustrated by the case of the Marine Aquarium Council in Bloomfield and Schleifer (2017).

[54] This analysis focuses on the impact of functional characteristics in an upstream sector characterised by a recent regulatory drive, which severely limits the applicability of the ***legitimacy*** and ***efficiency*** consideration relating to successful standards. Similarly our selection of implemented and recognized standards – i.e. fully operationalized and tailor made to the environments they are operating in – limits the applicability of most institutional characteristics identified in in BGR (2013)'s comparative study.

Standard implementation and uptake is also influenced by the cost of uptake for upstream all operators, but in particular for ASM operators, for which they represent a higher relative cost. And contrary to schemes such as Fairtrade, most current mineral certifications do not produce premiums on the material they certify, a costly certification, mandated by regulation or customer demands, is thus not necessarily offset by higher prices. Unfortunately this report will only be able to superficially touch upon the cost question as costs of certification cannot be estimated as, in addition to costs being project specific, certain standards have a non-public cost structure, and in certain contexts additional (informal) payments must also be made (see *DRC country capsule*) thus pushing compliance costs higher.

Standard implementers often work on very tight budgets, as it is necessary for them to assume a wide variety of expenditures and risks related to the nature of the supply chains and regions where they operate (Promines, 2015), making cheaper standards a difficult proposition.

3.2.1. Application scope: ASM, LSM, all types of mining operations

The ASM sector and LSM operations differ in the technologies they employ, their workforce and their management systems. Standards that are focused on the ASM sector must thus adapt their demands and means of verifications to the realities of the field. A standard modelled on LSM operations and capacities risks being impossible to reach for ASM operators and will add little value as it will disincentivise participation. Conversely, a standard developed for ASM operations and their limited capacities is unlikely to lead an LSM operation to adopt better practices than those already in place.

The majority of standards implemented are currently targeting LSM operations (53%) followed by all types of mining operations (31%) and ASM operations (16%)[55]. That nearly half of schemes cater to the ASM sector, which produces an estimated 15-20% of the world mineral output (IIED, 2013) is an indication of how seriously ASM production and its impacts and potential risks as well as potential for community development are taken by interested third party stakeholders.

A focus that is justified by the fact that implementation by ASM operators is more complex to achieve as smaller upstream operators face disproportionately higher costs than larger operators to close gaps with standards. Not only do they have less capacity to start with, and have to close a wider gap, but the overall relative cost of each gap closing actions is higher as their income is more limited.

Concurrently, the overwhelming majority of standards targeting ASM have a limited scope, focusing on key issues (such as conflict minerals), while standards targeting LSM are much broader in their scope.

That LSM operations can uphold higher standards than ASM operations is well understood by standards applicable to both, which, recognizing the initial limitations of ASM operators, lessen their compliance burden. Incremental standards with minimum certification criteria and progress criteria have shown to be adaptable to both types of operators and facilitate participation while pushing for progress towards best practices (BGR, 2017b).

Standards primarily targeting LSM operations are rarely implemented in ASM operations, but the inclusion of operating ASM miners into the scope of LSM certification has shown some potential, as in the case of the RJC CoP certification of *Minera Yanaquihua* in Peru, which in addition to its LSM operations receives ore from artisanal miners, whose operations have been brought up to the RJC standard requirements (RJC, 2014). For further details refer to the *Peru Country Capsule*.

"Big, fully mechanised, SSM" operations and junior mining companies represent a specific case along the AM to LSM continuum of practices. Both are difficult to reach with certifications due to their limited capital, both in

[55] Based on the sample used by the BGR (2017b) study.

terms of skills and financing and the fact that their mode of operations makes them the focus of LSM-targeting type of standards, which are more difficult to implement. Furthermore, based on field observations these operators are often less interested in undertaking certifications (and generally less interested in best-practice). To our knowledge no "big SSM" has undergone any form of certification to date.

3.2.2. Implementers and available support

Standards implementation and monitoring depends on, and is often limited by existing capacity. While implementation of actions needed to reach standard compliance is carried out by operators themselves, certification has to be conducted by external parties to ensure independence. This monitoring and certification can either be conducted by government agents, third parties (either NGOs/CSOs, cooperation agencies or private companies) or a combination of both[56].

Furthermore, as closing the gap with international standards requires significant efforts and skills that are often out of the reach of small-scale operators support from state agencies, larger operators, or donors/CSOs is often necessary to reach compliance.

Reliance on government agencies and their agents has the advantages to decrease costs, in particular when numerous sites need to be monitored, and especially so when said sites are found in remote areas, furthermore it also makes use of available capacity and strengthens host country technical capacities in addition to encouraging host country ownership of and commitment to the standard. However it is often the case that due to a lack of training, personnel and transportation, as well as low salaries (in some places salaries can go unpaid for months on end, even in major cities), and ill-designed incentives agents are either unable to maintain a certain standard of verification or have interests that are not aligned with a strict implementation of the requirements.

In addition, if government agents are found to be engaging in reprehensible acts, fellow agents or agents from other agencies are less likely to report such cases (Promines, 2015), and government agents can themselves own or participate in mining operations, despite most countries having legal provision forbidding current officials or military personnel to be involved in mining activities. These challenges impact both certification and data collection, and diminish the confidence of stakeholders in the up-, mid-, and downstream.

Reliance on selected third party providers leads to higher levels of standard certification (BGR, 2013) and better standard adoption[57], but tends to increase costs, in particular when private companies are the service providers. It can also increase the time necessary for implementation if no suitable partner can be identified and local capacity needs to be built from scratch. Finally, it can also suffer from difficult coordination with State agencies and a lack of access to all information to a higher degree than State agencies.

3.2.3. Approach

Procedures to evaluate achievements against standards' requisites have strong implications for the assessment of its impacts and how these assessments are carried out. Compliance is assessed via management-based or performance-based approaches, or in most cases through mixed approaches. As the vast majority of standards now use a combination of both[58], the devil is in the details.

[56] In certain countries participation of state agents in this process is a regulatory requirement, such as in the DRC (see *DRC Country Capsule*).

[57] As illustrated by RJC experiences in the Republic of Peru country capsule.

[58] Of the 15 standards analysed by CSRM (2015), 12 combine management and performance based approaches, while 2 are solely based on management based approaches and 1 on a performance based approach.

A particularly salient factor identified is whether standards use a strict pass or fail criteria or if standards offer a progressive assessment.

Under a progressive assessment operators are assessed against two sets of standards:

- Minimum criteria that are absolute requisites for certification; and,
- Progress criteria that may not be necessary to obtain certification. Some standards use progress criteria to calculate a final score and grant certification on this score, in addition to having passed the minimum criteria, such as CTC.
- Other standards issue grades, with different types of operators necessitating different grades to be compliant with their applicable requirements, as in the GRI MMS. Others yet grant certification based on minimum criteria but incentivize progress on progress criteria; for example in the case of BSP minimum criteria allow a product to obtain an export certificate from national authorities, and significant progress on progress criteria allows the producer to display a "BSP label" in its communication to downstream operators.

Due to their flexibility and progressive implementation, progressive standards allow both ASM and LSM operators to be certified by the same standard. As they reflect the nature of mining operators while assessing their compliance, ASM operators can get certified, while LSM operators can strive to achieve full compliance. As a result a thorough but progressive standard's uptake will not be limited to highly performing companies, but also has the potential to push less performing companies and smaller operators towards higher levels of performance, while ensuring they operate in compliance with a set of minimum requirements.

Adoption limited to high performers has been identified as a key issue for the implementation of the Initiative for Responsible Mining Assurance (IRMA), which is arguably the most comprehensive and legitimate responsible mining standard to date (BGR, 2017b).

As a result, and in order to foster uptake, IRMA will be implementing a "candidate level" certification to foster uptake. A status that would "*provide candidate mines with a means to demonstrate that while they have not yet achieved best practice across all issues and chapters of the IRMA Standard, they have demonstrated that they have gone beyond standard industry practice in several key areas*"[59].

3.2.4. Regulatory base

Standard adoption and compliance is driven by either compulsory requirements or voluntary compliance. Compulsory compliance can be either requested by host governments (compliance with national law and legislation), home-country governments (DF 1502 or the EU CMR), or as a condition to obtain financing with certain entities (IFC PSs or Equator Principles). Compulsory regulatory compliance can be enforced by law and as such generates the highest uptake and impacts, when resources necessary for monitoring and enforcement exist and are sufficient in the host country, including political will. Unfortunately these conditions are often not met in host countries of interest. They can be mitigated to an extent by legal actions undertaken in the downstream sector, as illustrated by the prosecution based on the *California Transparency in Supply Chains Act*[60].

Voluntary standards on the other hand are mostly driven by reputational needs and cannot be as readily enforced as they often lack any sanction mechanisms over and above membership suspension; a sanction that is moderated in certain cases as standards can be quite reticent to exclude key players in the industry, which by their presence in the standard lend it credibility.

[59] Quote from IRMA's website, www.responsiblemining.net/certification/#Levels. As accessed on the 28.02.2018

[60] See the Relevant regulation at EU and MS level section.

In practice this is moderated by the fact that operations that subscribe to a voluntary standard and the enhanced visibility it represents, as opposed to trying to operate under the radar, make genuine commitments to strive towards and maintain standard compliance. As such operations that take up voluntary certification are in most cases already working towards the implementation of best practices and have the capacity to comply with more complex standards.

In a nutshell, regulatory compliance reaches out to a higher number of entities, including clearly non-compliant ones, and as a result is in need of both supporting measures and continuous efficient monitoring. Voluntary standards compliance on the other hand, requires more in-depth, and thus complex, transparent and public audits to reassure stakeholders about compliance despite the absence of impactful sanctions.

3.2.5. Data collection and dispersion

As Promines' (2015:38) comparative study highlights "supply chain due diligence rests on the creation, collection, organisation, and analysis of data, and passing that data in disaggregated, aggregated and/or analysed form downstream. Data management is thus one of the less visible but most important, challenging and costly aspects of a traceability and certification system. It is also one of the main points of differentiation between the different traceability systems which have developed their own software for managing data".

Data collection, management, analysis, and disclosure is central to any standard, not only as it allows to communicate to stakeholders, but also because it underpins the entire functioning of standards, in particular when it comes to traceability, incident reporting, and audits.

While digital based systems differ in their organisation and structure, they are fundamentally different from paper-based systems as they allow far greater flexibility than the later in terms of data management, analysis and communication.

Digital systems present a number of advantages as they: are more difficult to tamper with once data is entered, depending on their structure they can share data instantly with relevant stakeholders, they can allow for automatic processing of data (daily production statistics or standardised incident reports), and they have the capacity to integrate or be integrated in further technological developments[61]; blockchain-based systems in particular offer interesting opportunities as not only do they ensure instantaneous data sharing, but also a tamper-proof system once data is accurately entered[62,63].

However, due to the lack of electric and communication infrastructure in exploitation areas, paper based systems can prove easier to implement at the data collection stage. Yet, the increasing availability of affordable hand held devices and power supply, as well as the implementation of provisions to work around punctual lack of communication infrastructure is gradually mitigating this limitation.

Paper-based standards on the other hand do not allow real time information sharing and pro-active intervention. If red flags are raised the concerned material will already have been exported and corrective intervention can only take place ex-post and target future non-compliances.

[61] Example of potential synergies between standards and digital platforms include: blockchain, supply chain mapping (as in the Trase project – https://trase.earth/), risk assessments (EICC's Risk Readiness Assessment – www.eiccoalition.org/standards/rra/), GIS (MapX – www.mapx.org), or standardized incident response advisory as in the BSP (see BSP section). As accessed on the 30.10.2017 for all links.

[62] Other technologies allow for the simultaneous update of information across different data-silos at a lower cost (in particular energy-wise) as they work at a slower speed and lower verifiability.

[63] Specifically on blockchain GIZ has issued a practical infographics on the pros and cons of blockchain in different types of responsible sourcing models. See *Annex: Blockchain and responsible mineral sourcing*.

A recurrently mentioned limitation of digital based mechanisms[64] is that contrary to paper-based systems whose low-cost simplicity has played a role in the scalability of systems, digital based systems are more expensive and require training.

Similarly to the issues associated to lacking infrastructure, technological gains[65] and increasing technological literacy among state agents have now offset the advantages from a paper system from a scalability standpoint.

***As a word of caution it should be noted that going digital over paper alone does not solve* issues related to data entry. Material infiltration at mine sites cannot be solved by going digital alone, but going digital can strengthen, simplify and provide a wider array of options to prevent infiltration.**

[64] See Promines (2015) for an illustration.

[65] Smartphones are now ubiquitous, cheap enough, and have enough processing capacity to be used as data registration and uploading devices at a fraction of the cost of the more specialised devices that were previously required in order to perform such tasks.

4. Analysis of due diligence and certification initiatives, factors for success, and challenges

To preface the standards' presentation it should be highlighted that standard creation and ensuring the necessary stakeholder acceptance into said standard is not a short-term effort that is easily undertaken. For example, IRMA, which is arguably the most complete and overreaching mine site certification, and which enjoys one of the highest levels of stakeholder acceptance has taken 10 years to reach its implementation stage (BGR, 2017b).

Furthermore, as noted in the introduction, there is currently no systematic evaluation of the impacts of responsible sourcing on their region of focus, in particular for conflict minerals standards. Their overall impact balance is so far unknown as no systematic evaluation has determined whether those standards have led to a diminution of human rights abuses caused by or encouraged by mineral exploitation, let alone if the loss of revenue local communities experienced due to a de facto commercial embargo was offset by gains in the enjoyment of their human rights. This lack of information represents a critical shortcoming for the evaluation of programs and the design of policies.

To offset this absence of critical information as much as feasible while also drawing lessons that are transferable to standards with other areas of focus the analysis below focuses on the standards' capacity to achieve their stated goals (ensuring that the supply chain is free of human rights abuses), and not the broader objectives that may underline said goals (improving the conditions of communities in mining regions).

4.1. Analysis of different systems/approaches

With more than 18 standards applicable (BGR, 2017b), mineral certifications and due diligence initiatives offer significant variety as to the contents they monitor, and how they do so. Instead of listing them all this analysis looks at a selection of standards based on their regional implementation and functional characteristics in order to offer a broad overview of implementation determinants.

Table 2 - Analysis of selected standards

	CTC	iTSCi	BSP	RJC	SGBPs
Application Scope	ASM	ASM	ASM to LSM	MSM to LSM principally	ASM
Implementers	Government with 3rd party audits	Government	3rd party	3rd party	Government
Approach	Progressive	Fixed	Progressive	Fixed	*Ad hoc*
Regulatory base[66]	Voluntary in Rwanda and compulsory in the DRC[67]	Compulsory	Compulsory	Voluntary	*Ad hoc*
Data collection and dispersion	Paper based	Paper based	Digital	Paper based (with a planned transition of pre-audit to digital)	*Ad hoc* but usually paper based
Country capsules	DRC / RW	DRC / RW	DRC / RW	Peru	Bolivia / Peru (in its initial stages)

[66] When listing the compulsory nature of standards we include standards that respond to downstream regulatory requirements such as DF 1502

[67] For the DRC, see: *Arrêté ministériel n°0058/CAB.MIN/MINES/01/ 2012, 29 February 2012*

As a general note, and at the risk of repeating part of this report's disclaimer, the following needs to be highlighted: only iTSCi has seen significant implementation on the ground to date and this creates a possible perception bias for the reader, as more information is available on iTSCi's implementation, this particular standard is exposed to additional scrutiny, at the same time this also means that any claims of success made by the other initiatives might be premature.

4.1.1. CTC

Developed by BGR in 2009, and thus prior to DF1502 drafting or development of the OECD DDG, CTC covers a broad spectrum of issues including, but not limited to conflict minerals compliance; CTC criteria are also related to labour and working conditions, security provision, community consultation and development, and environmental protection. While these provisions, in adapted form, have been included in the RCM Manual as "progress criteria", they do not have any significant relevance for RCM implementation. ICGLR certificates are being issued without consideration of project criteria scores, or without progress criteria being evaluated at all.

Piloted in Rwanda until 2011, where it achieved significant success before being closed in 2012[68], CTC has since been implemented in the DRC and is in theory a legal requirement for AM and SSM sites[69], yet in practice only a limited amount of sites have been validated and few operators are showing interest in the certification. To function as such, CTC criteria consider some aspects of the DRC's labour and mining laws (Promines, 2015). Having originally designed CTC as a voluntary standard, BGR did not foresee that the standard would become mandatory in the DRC. And this adaptation to the demands of Congolese stakeholders has had profound impacts on its design as far as the certification process is concerned.

In Rwanda, pilot implementation of CTC was tested on a small number of small to medium scale 3T mining companies who purchased their production from local artisanal miners working as subcontractors on their concessions. Mineral concentrates were exported, directly or through 3rd party exporters, to European and Asian customers (smelters or international traders). Companies in Rwanda were strongly committed to CTC as they saw it as an opportunity to demonstrate responsible mining practice and safeguard their reputation at a time when other schemes (such as iTSCi or RCM) were not yet operational. The Rwandan Government strongly supported CTC implementation. At a technical level, CTC implementation in Rwanda included baseline and compliance audits; and BGR supported local CTC partners in following the baseline audit recommendations in order to improve their performance. Compliance audits found systematic and measurable improvement across all 21 CTC standard criteria and CTC compliance certificates were issued by the Rwandan Board of Standards for three out of four CTC participants.

Since 2011, CTC implementation has been undertaken by the DRC Government with support from the BGR, which also provides support to Congolese agencies, mainly in form of capacity building, civil society engagement, and ASM sector formalisation and improvements. However as BGR support is mainly directed towards strengthening the capacities of the participating state agencies, its uptake and effective implementation has been greatly reduced; CTC participants do not have clear incentives for participation[70].

The numerous areas covered by CTC standard are classified into minimum requirements, which include mineral traceability and standard performance requirements for responsible ASM mining. Performance against

[68] See www.bgr.bund.de/EN/Themen/Min_rohstoffe/CTC/Mineral-Certification-Rwanda/Implementation/implementation_rw_node_en.html. As accessed on the 30.10.2017

[69] See *Arrêté ministériel n°0058/CAB.MIN/MINES/01/ 2012, 29 February 2012* fixing the procedures of qualification and validation of mine sites

[70] Therefore, the on-going CTC project in the DRC (current phase 2018-2020) foresees a revision of the CTC system in the near future. Among others, the revision will include clarification of CTC's role as a complementary scheme with regards to other standards (iTSCi, RCM) and discussion of developing the scheme towards a multi-stakeholder steering committee (personal communication with BGR, 2018).

individual CTC criteria is measured using a 0 to 4 scale of level descriptors; "*a CTC certificate is issued if an average value of 2.5 is achieved in the compliance audit while achieving a full score (4) in the* [minimum] *requirements*" (BGR, 2017b). While one of the core requirements of CTC is ability to track and trace minerals originating from CTC mine sites, the system does not impose a single traceability scheme. Any OECD DDG compliant standard would be acceptable for the certification. To date due to its extensive implementation traceability claims in the 3T sector have been backed by the iTSCi bag and tag traceability system (BGR, 2017b) but other solutions are acceptable as well (such as BSP or individual systems designed for ASM gold supply chains).

To be certified a site must first undergo a baseline audit by a third party auditor. A main objective of the baseline audit is to provide recommendations to the mining company/cooperative in order to improve its performance. Findings of this baseline audit are shared with the company requesting the audit and published online. The site is granted about one year to improve based on the recommendations provided by the auditor; subsequently, a compliance audit will be conducted which takes into account company performance and potential improvements from the baseline audits. Audits are carried out against all CTC criteria. Results are shared with the site operator and submitted to the DRC mineral certification commission (COCERTI), which then issues a recommendation to the DRC Minister of Mines who ultimately has to sign each CTC certificate. Once a certificate has been issued it is valid for three years.

Four main criticisms have emerged as to the certification process and the logic behind the CTC's implementation in the DRC:

- First, there is no clear information as to how certification decisions are made, and/or communicated to the operator and public. Importantly the third party auditor does not have the final say as to the certification of the site (Promines, 2015).
- This was exemplified when, in May 2014, auditor RCS Global recommended against the CTC certification of MHI Mining operations in Bibatama (North Kivu, DRC) due to non-mitigated landslide risks, which had already claimed casualties in the past (CTC, 2014). The site was nonetheless certified by the Congolese authorities and a few months after the awarded certification a new landslide claimed the lives of various miners. In such cases, the overruling of an independent third party assessment coupled to a serious follow-up incident, impacts negatively the credibility of both the CTC, and the perceived independence and commitment to the standard of its implementers, or in other words: Congolese state agencies.
- Second, the lack of support to operators between the baseline and certification audits is perceived as a missed opportunity for the implementation of better practices and a factor that complicates the certification of the sites (Promines, 2015).
- Third, CTC does not offer any clear incentives to participants, economic or otherwise. While, in theory, CTC compliance is a legal requirement for 3TG mine sites in the DRC, this is not enforced in practice. As CTC compliance is not a requisite for export and there is no financial incentive, operators focus on achieving compliance with the regional minimum standards and procedures defined by the iTSCi scheme and, partly, the ICGLR RCM.
- Fourth, and linked to the second and third criticisms, there are limitations to the applicability of the CTC system. Under its framework small operators face serious, and often insurmountable, challenges to comply with its requirements, due to managerial, technical, and organizational shortcomings. Only larger operators tend to achieve certification.

Analytical Fingerprint

An initiative broadly linked to CTC and developed by BGR is the Analytical Fingerprint (AFP) technique, which provides an analytical framework to compare the claimed origin of 3T ore concentrates against known reference samples; this is done by statistically evaluating their mineralogical and geochemical composition (BGR, 2013b). The AFP method does not represent any initiative on its own but should be viewed as an optional tool for interested parties (e.g., companies or auditors) in order to substantiate 3T mineral risk

assessments. The AFP tool can be applied in mineral supply chains where no major mixing of different sources has taken place, e.g., pilot "closed pipe" supply chains related to selected mine sites. Since 2011, BGR has supported the ICGLR and partners in individual member states in building capacities in order to apply AFP as an optional tool and assume ownership of the method.

AFP may act as a deterrent for fraud attempts or it may positively support credibility of a given supply chain, as while the process does represent a cost, it offers interesting avenues for implementation if coupled with the adequate negative incentives. To draw a parallel with tax systems, 59% of US taxpayers report that fear of audits from the Internal Revenue Services (IRS) influence their reporting (IRS, 2014); while the IRS only audits less than 1% of submitted tax returns (IRS, 2015). Thus a system combining random or targeted fingerprinting of a small percentage of samples and harsh sanctions could strengthen the RCM, iTSCi and other traceability systems implementation. Workshops have shown that AFP is often referred to as a desirable tool by geological (or equivalent) services, even if there seems to be some confusion as to the extent and capabilities of this tool; interestingly this predilection by a technical service for a technical tool highlights an often-found bias towards the implementation of solutions that fall the more closely within the technical expertise of implementing agencies.

4.1.2. iTSCi

ITRI Tin Supply Chain Initiative (iTSCi) is a joint initiative between the International Tin Research Institute (ITRI) whose members represent 60% of world tin production, the Tantalum-Niobium International Study Centre (TIC) and ICGLR countries, specifically Burundi, the DRC, and Rwanda. iTSCi aims to provide a joint industry mine to smelter program that meets the need of the OECD DDG and of the recommendations of the UN Group of Experts (GoE) on the DRC and provides information for end user smelter audits.

iTSCi is not a certification system, rather it provides traceability aligned with the OECD DDG to certification systems such as the CTC or the RCM[71]. Allowing companies to comply with DF1502 disclosure and keep markets open for 3Ts from level 3 countries, chiefly the DRC and Rwanda. By incorporating due diligence on potential criminal networks and sanctioned individuals and entities in its *bag and* tag approach, iTSCi is aligned with recommendations of the UN Security Council Resolution 1952 (2010) in addition to the OECD DDG.

iTSCi implements traceability from mines to exports by working with host governments agencies. Specifically, iTSCi relies on a chain of custody of tagged material to identify mineral origin. iTSCi also assists companies by establishing due diligence through independent on the ground monitoring for which it uses a continuous incident reporting mechanism to monitor and follow up on reported incidents of human right abuses on sites and along transportation roads. iTSCi also facilitates local stakeholder consultation. Finally, iTSCi provides third party audits of all operators seeking to join iTSCi and of sites, as well as, operating environment evaluations[72].

Administration of the standard is undertaken by ITRI while in-country implementation is the responsibility of the non-profit NGO "Pact"[73], which builds government capacity and supports local NGOs operating as field agents in the host country.

iTSCi is the sole widely implemented standard in the DRC and has had the positive effects of not only bringing a certain level of transparency and data on production levels to a murky sector but to strengthen government capacity in its areas of implementation and has removed armed groups from a number of mine sites according to a representative from PACT (Promines, 2015). Impressive achievements when considering the complexity

[71] See www.itri.co.uk/itsci/itsci-project-overview/itsci-project-overview. As accessed on the 30.10.2017

[72] See www.conflictfreesourcing.org/training-and-resources/complementary-programs/. As accessed on the 30.10.2017

[73] For further information on Pact and their involvement in iTSCi, refer to their website: www.pactworld.org/itsci

of the Congolese ASM sector, in which the system has demonstrated scalability, although at a somewhat slow pace. iTSCi thus offers a substantial foundation for addressing other aspects of minerals governance and human rights risks in the 3Ts sector (Promines, 2015).

Box 2 - iTSCi bag and tag system

In bag and tag systems, minerals from certified sites are packed into bags that are then sealed and tagged with a unique identifying number. At each transaction and change of custody this tag number is reported on supporting documentation (either on a paper or a digital support), which allows tracing a particular mineral bag to its point of sealing. In most such systems the initial point of sealing is the mine site.

In the case of iTSCi, due to the limited number of available state agents, sealing and tagging does not happen directly on mines sites, instead miners bring their production to an iTSCi bagging station. In the vast majority of cases the agent tagging the bags has not seen, whether the material was mined at a particular place. Presenting an opportunity for mineral infiltration. Furthermore bags tagged can be composed of the production of different small sites, further complicating traceability to the actual mine site.

For its tagging and data recording iTSCi relies on the work of SAESSCAM, Division of Mines and CEEC agents (see DRC Country Capsule). These institutions retain a copy of this information, which is transcribed in logbooks.

At the same time Pact's iTSCi agents are responsible for: ensuring that the Government agents record data fully and accurately, training of state agents, and collecting and returning the iTSCi copy of the logbooks to iTSCi locally, who then forward to ITRI in the UK, for inputting into the iTSCi database (Promines, 2015).

However criticisms levelled against the standard are numerous.

Stakeholders perceive iTSCi to suffer from:

- A reliance on government agencies and agents to implement its traceability system. This perception is validated by the numerous instances of government agents' misbehaviour that are described in UN Group of Experts on the DRC (UN GoE) reports[74].
- A reliance on a paper based system;
- A perceived lack of financial sustainability that weakens the standard credibility. However this is a misperception as iTSCi's financing structure ensures that once a specific supply chain is part of the system, the operational costs are covered by the operational revenue of the standard in the host country as a whole, thus achieving financial sustainability[75]. As for other standards obtaining the resources required to upgrade sites whose production can then be certified, either by outside or local sources, is a complicated task as the upfront investment can be unrealistic under local market conditions.
- The lack of "fully permitted and enabled third party evaluation [further] affects trust amongst stakeholders and disincentivises investments in iTSCi by third parties" (Promines, 2015).
- Its ownership and administration by ITRI, and the set of incentives thus created. Certain stakeholders perceive that iTSCi and its affiliation and links to ITRI member companies (which include the only two smelters buying tin from the DRC: MSC and Thaisarco) have resulted in lower prices for miners and

[74] Accessible via www.un.org/sc/suborg/en/sanctions/1533/work-and-mandate/expert-reports. As accessed on the 30.10.2017. See for example UN GoE (2015, 2017).

[75] According to iTSCi representatives referred to in Promines (2015).

upstream traders. iTSCi is also perceived as having a monopoly position as a standard, stifling the development of alternative approaches and is currently still the only provider of traceability information in the 3Ts in the DRC[76].

- Vulnerability to fraud. iTSCi has been noted by UN GoE reports as being sensitive to fraud (e.g. under-declaration of weight, re-using tags, illegal sales of tags) and infiltration. Of particular concern is the infiltration of Congolese minerals in Rwandan supply chains[77].
- While issues of (attempted) fraud and infiltration are likely to emerge in any standard implemented in regions characterized by the lack of implementation of a regulatory framework, capacity, resources, and faulty governance, these issues can be limited if the standard has effective built-in alerts that flag anomalies and allow stakeholders to address them. Yet UN GoE reports repeated mentions of fraud point towards the fact that iTSCi has had a tendency to fail to flag infiltrations and allow them to go unnoticed for significant stretches of time.

These shortcomings create a parallel market for 3T products, meaning that not only supply chains can be contaminated by material that finances groups committing human rights abuses, but also diminishing the overall incentives for upstream operators to comply with, costly[78] conflict-free sourcing. This is exacerbated by price differences between the DRC and Rwanda[79], which further incentivize smuggling towards and infiltration in the latter country.

Finally iTSCi, while releasing more data than required by the OECD DDG, does not share data at a level of disaggregation that would allow to assess the impact of the certification on local communities for stated reasons of commercial sensitivity and intellectual propriety protection.

As a result stakeholders are sceptical about the adequacy of the disclosure of risk events and the time frame of their disclosure. Furthermore iTSCi has shown to be lacking when it comes to providing data to non-members or responding to information requests, both through its website and ad hoc response to specific information requests (Promines, 2015).

While the prior points paint a difficult context it should be noted that, all things equal, DRC's 3TG sector governance when it comes to legality, formality, production conditions and involvement of armed forces differs from other minerals sectors where neither iTSCi, nor any other standard has been implemented to date, in particular the copper and cobalt sector. This is particularly visible in areas where both 3TG and copper/cobalt operations can be found based on the author's fieldwork in South-Eastern DRC.

4.1.3. BSP

The Better Sourcing Program (BSP) is a private sector technology-based real-time information sharing solution that has been designed to cater to the needs of the mineral sector. Tailored to the minerals industry, BSP validates supply chains against 16 key criteria enshrined in the separate BSP standard. Which is comprised of *status* – i.e. minimum – criteria, that ensure conformance with the OECD DDG, and *progress* criteria that go over and above the requirements of the OECD DDG and are concerned with environmental impacts, community relations, labour rights, and OHS, among others. Offering assurance and validation of upstream

[76] Note that in that regard the AFP can theoretically provide traceability services (even if the costs entailed prevent it to function as such) and that BSP is scheduled to start 3T traceability operations in the DRC in the near future.

[77] Recently substantial cases of infiltration have been documented by the Congolese national committee against mining fraud (CNLFM) in a 15 minutes film titled *Nord Kivu et la Fraude Minière*. This movie was made available to participants requesting it at the OECD 12th Forum on Responsible Mineral Supply Chains (Paris, 17-20.04.18)

[78] According to two case studies from ARM (2017) in Rwanda, iTSCi tagging costs represent between 3% and 5.4% of the operators revenue. Note that due to sample size, the spread of costs is likely to be wider. This information also does not consider informal payments such as *per diems* (see *DRC country capsule*).

[79] UN GoE (2015) reports Congolese traders mentioning a 20% price differential.

procurement to smelters, BSP is compliant with the requirements of the RMAP[80]. While currently focusing on supply chains from Rwanda and the DRC, BSP's technological platform is neither region nor mineral specific and can be adapted to any supply chain.

BSP relies on the implementation of management systems across the supply chain, as well as ongoing risk evaluation and structured risk mitigation tailored to specific supply chains. Its monitoring is not limited to extraction sites and transport routes but also includes the impacts generated by operations on nearby communities.

Data is collected by trained BSP field agents and local partners via a smartphone app, while traceability is provided through the use of a third party system: GeoTraceability, which provides supply chain traceability coupled with geographical information, using a technology combination of mobile phones, GPS and GIS analysis. This allows traceability data collection to be tailored to each supply chain and collect information at each and every supply chain articulation, in essence allowing BSP to function as a flexible closed pipe system from the mine sites to the smelter.

To complement this traceability and ensure a formal, beneficial to all, supply chain BSP also undertakes a Know Your Customer (KYC) of all the parties and formalizes their relations through the implementation of legal contracts between the parties. The existence of legal contract for upstream operators provides a stability that facilitates progress on BSP's progress criteria and is central to the BSP approach but has turned to be a very time-consuming process.

To date BSP has been implemented in the ASM gold sector (via a closed pipe pilot in the DRC, that has not yet produced exports), the 3Ts (Rwanda and forthcoming operations in the DRC) and has undertaken site assessments for a cobalt exporter in the DRC.

That BSP certification uses minimum and progress criteria gives the system flexibility, broad implementation potential, and allows for better communication for downstream buyers and users. Minerals that fully comply with minimum criteria and to a sufficient extent with progress criteria, or that demonstrate sufficient progress, can make use of the BSP labels; while under the same certification, supply chains that demonstrate compliance with minimum criteria but not enough progress on progress criteria can still be demonstrated as conflict-free and in compliance with the requirements of the OECD DDG.

The "real time" nature of BSP when it comes to information sharing has two direct impacts for the system. First it flags down problematic minerals before they are exported, allowing downstream users to exclude them from their intake and thus maintain full, proactive, compliance with selected standards, and force suppliers to address incidents prior to export. Second, standardized incident response based on international best practice is inbuilt in BSP's software; when reporting an incident the operator receives immediate guidance on mitigating and addressing the incident reported according to international best practice.

BSP is a market-based system paid by the user. Yet, on occasions, BSP has worked with sponsors to ensure that otherwise financially impossible supply chain set-up occurred, with the ongoing monitoring and reporting being financially sustainable once set up, as can be the case with iTSCi.

Started in 2013 with first implementation on the ground taking place since 2015, and the first exports taking place in August 2016 from Rwanda, BSP is a new entrant among standards. As such there are no independent evaluations of its implementation or a clear overview of the standard's performance. However, confidential incident reports consulted by the author have shown the standard's capacity to block suspicious batches before export and request the implementation of the appropriate measures in a proactive way, on two separate occasions.

[80] See: www.conflictfreesourcing.org/training-and-resources/complementary-programs/. As accessed on the 30.10.2017

It is foreseen that incidents information will be shared by participants with downstream buyers as demands for responsible minerals grows. However to date, and after 9 months of sustained operations, no such request has been made from any buyer further downstream than a smelter. Illustrating both the recent entry of BSP in the market and the lack of consumer demand for responsible minerals.

BSP has initially suffered from the fact that it is "*co-owned and managed by the directors of RCS Global, a consulting firm specialising in conflict minerals due diligence and assurance amongst other things, as well as Benjamin Clair, a previous employee of RCS* [note: Benjamin Clair is no longer affiliated to BSP since early February 2018]. *The directors are aware of potential conflict of interests, and have made efforts to address any that might arise.* […] *RCS Global has given a definitive undertaking that it "will under no circumstance audit a BSP supply chain or company.""* (Promines, 2015:102). And while the issue's salience has been diminished due to the separation maintained by the companies, it nonetheless does affect the perception of the scheme by certain parties.

4.1.4. RJC

Of all standards that promote responsible mining Responsible Jewellery Council (RJC) is arguably the most present across downstream operators in the EU.

RJC is a London-based not-for-profit standards setting and certification organization. As its name suggests it is geared towards the jewellery sector and promotes responsible business practices along the entire supply chain for gold and palladium group metals, and diamond[81]. The RJC designed and manages two complementary standards: the Code of Practices (CoP) and the Chain of Custody (CoC) Certifications, both under revision in late 2017 (HRW, 2018). While CoP compliance is mandatory to maintain membership, CoC compliance is voluntary. The former focuses on supply chain issues, such as business ethics, human rights, social and environmental performance; while the latter focuses on the flow of material through the supply chain, defining requirements for chain-of-custody systems. RJC members agree to undergo periodic audits by external auditors against the RJC standards.

While its current thoroughness and mode of audits has been recently criticized (HRW, 2018) the RJC CoP remains one of the most complete standards implemented as it looks at all types of impacts from mineral extraction, refining, and usage across all levels of the value chain (BGR, 2017b). As such consensus building between its stakeholders is noted as being very complex and time consuming as stakeholders representing multiple commodities and supply chain steps are present, each with its specific interests. The RJC has expended significant efforts to ensure the cross-recognition of its standard[82] resulting in a reduction in the necessary number of audits for its members.

While its adoption in the mid– and downstream is strong with 537 manufacturers, 370 diamonds cutters and polishers, 61 retailers, and some of the world biggest refiners[83] being members. Its implementation in the upstream gold sector is more limited. While diamond mining operators members of the RJC include some of the world's biggest names (Rio Tinto, or De Beers for example) gold miners are only represented by four more modest companies with strong responsible commitments and mostly located in Latin America[84]. This disinterest from upstream gold miners and not so from diamond miners is likely to be explained by the nature of RJC standards; contrary to diamonds, gold has a broader customer base than the jewellery sector and its operators are thus less incentivized in undertaking a narrow industry certification process. However the fact

[81] Work is ongoing to extend the standards' scope to include coloured gemstones.

[82] RJC CoC (2012) is cross-recognised by Fairmined, Fairtrade, the DMCC, the LBMA, and the RMI.

[83] Such as PAMP SA, Valcambi SA, Argor-Heraeus SA, Johnson Matthey & Brandenberger, Metalor Technologies SA, or Rand Refinery (Pty) Ltd.

[84] Current gold miners member of RJC include 2 Peruvian operators, 1 Honduran operator and 1 US operator.

that RJC offers a framework to manage social conflict with local ASM communities has been highlighted as a feature of significant interest by MSM operators in Colombia.

With standard uptake in the upstream limited to either big well-known diamond LSM companies or smaller gold M-LSM companies with significant prior social and environmental commitments, it comes as little surprise that upstream members willing to undertake RJC certification do so with limited challenges. In that regard it will be interesting to see whether RJC's newest gold operator member SOTRAMI, a small-scale Peruvian operator supported by the BGI, will experience implementation difficulties. While RJC CoP has not suffered from significant implementation challenges in the upstream, SMEs in the downstream have found reaching compliance difficult at times. These challenges have mostly been related to issues of OHS, policy and implementation, and, reporting[85]. The two latter are closely aligned to the salient issues identified in BGR (2017) regarding SME compliance with DF1502. A fourth challenge of particular relevance to the EU has been noted in regards to provisions against money laundering and the financing of terrorism as most audits of diamond traders (clustered in Antwerp) result in one or two KYC documents missing; illustrating the difficulty of undertaking due diligence for SMEs. An observation closely aligned with BGR (2017) as well.

4.1.5. SGBPs

State Gold Buying Programs (SGBPs), and by extension any potential state buying programs targeting other minerals, can be considered a first, gradual, approach to the imposition of standards in highly informal ASM sectors. While SGBPs' main objective has often been to collect revenue and bolster national gold and foreign currency reserves, they offer opportunities to raise and monitor standards in AM and SSM operations and institute a basic level of traceability, depending on design and implementation specifics[86]. As such certain SGBPs could be considered proto-certification schemes that bring a certain level of assurance on materials, while others would actually raise the risks of supply chain infiltration and contamination.

In most SGBPs, gold is bought via accredited gold-buying stations, often operated by the country's national bank or treasury, at a percentage of the world market price. In some SGBPs production requirements are imposed to the seller. While in some countries gold is sold directly by ASGM miners, in others middlemen and traders have a role to play, negatively impacting the imposition of standards unless due diligence is part of the SGBP.

By bringing the, often informal, ASGM sector, in contact with authorities SGBPs offer an opportunity to build trust and goodwill, and to gradually introduce standards and formalize activities, a requisite of all standards. When "*sellers come to sell gold to SGBPs, the state has an opportunity to set or insist on the application of international due diligence and responsible practice standards that traders and their suppliers must meet* [for their minerals to be purchased]. *Where legally possible, compliance with such standards can be gradually introduced and strengthened so to incentivise ASGM operators to comply with regulations and good practice standards gradually in cases where they would initially not be able to do so.* [Furthermore] *If government lacks the capacity to monitor and enforce regulations in the ASGM sector, an SGBP can be set up to complement a voluntary system of regulations.* [AM and SSM] *operations can choose to participate in order to receive special incentives, conditional on their compliance"* (IIED, 2016:11). As a result, whether SGBPs can be considered a form of, limited, certification depends on the type of SGBP that is implemented, the initial objectives of the SGBP, and the roles and obligations of participating traders, if any.

No questions asked SGBPs are programs that purchase any gold offered, without conducting any due diligence or requesting any practices to be implemented or avoided. Historically these programs have been

[85] Communications with Bethan Robson Herbert, certification and impacts manager at the RJC.

[86] For further details on SGBPs see IIED (2016).

the most successful in capturing ASM gold as they do not impose any demands on ASGM miners and tolerate intermediaries, some also offer higher than market gold prices as a further incentive. However these programs present risk for supply chains as they aggregate ASM sector production with no checks, potentially mixing responsibly and non-responsibly produced gold and incentivizing smuggling from neighbouring countries.

On the other hand, programs that aim to co-opt AM and SSM producers and introduce standards need to provide miners (and when applicable intermediaries) with an adequate mix of positive and negative incentives to foster uptake. Ideally an incremental strengthening of requirements should be paralleled by supporting measures providing the necessary training, formalisation of mining titles (if proper conditions are met) as well as positive incentives. To be successful SGBPs introducing requirements require real local outreach and presence. This is particularly true in the case of gold, which can easily exit (or never enter) official value chains as it is easy to smuggle or sell on informal/illegal markets and can be readily used as currency. SGBPs are thus highly sensitive to state capacity in areas of gold production.

4.1.6. Linking the upstream to the downstream through the midstream: RMI/RMAP

This section has so far presented standards dedicated to upstream or full supply chain certification. However mid-stream certification instruments should not be forgotten as they link the upstream to the downstream and, with the exception of closed-pipe supply chains, are the only cost effective way for downstream users to ensure their sourcing is conflict-free or responsible. The leading standard to demonstrate OECD DDG compliance for 3T smelters is one of the Responsible Minerals Initiative (RMI)'s tools, the Responsible Minerals Assurance Process (RMAP), a voluntary third party audit of smelters. Which allows smelters and their downstream clients to demonstrate compliance with DF1502 requirements. The RMI and the RMAP were until recently known as the Conflict Free Smelter Initiative (CFSI) and the Conflict Free Smelter Program (CFSP) respectively, names that may still be more recognizable to a number of operators.

RMAP requests smelters to demonstrate through an audit that they have management systems in place to ensure that no conflict minerals are being sourced, this includes: management level commitments, a strong (publicly accessible) policy, internal material controls (including a reconciliation process), and document collection procedures to support traceability and origin determination[87]. As such RMAP relies on smelters identifying their supply chain and obtaining assurance from their upstream suppliers that minerals have been sourced in compliance with the OECD DDG.

RMI also provides downstream users with the RMI designed free and standardized CMRTs, which are used by downstream companies to disclose relevant information on their supply chains up to the smelter level, and have become the standard metric of conflict-free compliance in the downstream sector.

[87] See www.conflictfreesourcing.org/about/faq/. As accessed on the 30.10.2017

4.2. Country capsules

Table 3 - RGI scales of selected countries

RGI scale		Peru	Bolivia	Rwanda (based on the similar WB indicators)	DRC
Good (>74)					
Satisfactory (60 – 74)	*Overall RGI Score*	*62*	*54*	*Unknown*	*33*
Weak (45–59)					
Poor (30–44)	*Enabling environment*	*62*	*49*	*1st or 2nd* *Inferred ranking against Bolivia, DRC, Peru*	*12*
Failing (<30)					

Standards are not implemented in a vacuum and their results depend on the governance environment found on the ground. This section offers insights as to how the functional characteristics described in the previous section have turned into implementation successes or challenges. The presented country capsules have been chosen both because they represent different levels of governance, as illustrated by their Resource Governance Index (RGI) scores from the Natural Resources Governance Institute (NRGI[88]) and because they represent two pairs of contiguous countries where the same standards are implemented.

In the cases of the DRC and Rwanda, both countries have been the loci of standards, schemes, policies and regulations concerned with conflict minerals. As a result there is an existing implementation record for multiple standards, including those previously highlighted as of interest. Furthermore their discrepancies in terms of governance quality and the existence of substantial smuggling of minerals from the former to the latter highlights the issues posed by mineral smuggling.

While Bolivia and Peru do not present such extreme divergences in their governance indicators, several of said indicators nonetheless diverge significantly enough to impact implementation and have impacted standards and efforts towards responsible mining in both countries through different channels. Furthermore these two countries also present substantial mineral smuggling from the former to the later.

[88] Formerly Revenue Watch – Accessible via: https://resourcegovernance.org/. As accessed on the 30.10.2017

4.2.1. Democratic Republic of the Congo

Table 4 - RGI of the DRC

Enabling environment	***12***
Voice and accountability	*22*
Government effectiveness	*5*
Regulatory quality	*12*
Rule of law	*6*
Control of corruption	*17*
Political stability and absence of conflict	*7*
Open data	*16*

Following decades of simmering and open armed conflict in which warring parties profited of the country's mineral riches, the Democratic Republic of the Congo (DRC) is the origin and focus of conflict minerals legislation and efforts in the 3TGs. To date 9 standards have been implemented in the DRC, including: BSP, CTC and iTSCi. With stakeholders' focus extending to additional minerals and non-conflict human right violations the DRC is poised to stay in the limelight as it produces over 5% of the world mined copper and half of the global cobalt output [89,90], two metals whose consumption is forecast to continue growing significantly, particularly for cobalt (Olivetti, et al., 2017) and whose mining in the DRC represents human rights and governance challenges. As exemplified by its RGI score, the DRC's mineral governance is lacking, in particular when it comes to the conditions on the ground; DRC's mining enabling environment is only out-matched by Eritrea's and its government effectiveness score is the lowest among the ranked mining environments. Coupled to its ongoing and historical conflict, political deadlock and instability, and a dependency on mineral exports this has translated into:

- The regular presence of armed forces and groups on mining sites[91] and on transportation routes (IPIS, 2016; IPIS, 2017);
- High levels of child labour in AM and SSM sites (Amnesty, 2016; Vérité, 2015)
- A high corruption environment (both at the operational level and for the attributions of rights, as highlighted by recent scandals92), with a number of non-legally defined payments accepted as routine and in many cases enforced with zeal by authorities and their agents93 (Global Witness, 2016);
- Significant environmental impacts on both livelihoods and public health from both AM, SSM operations and flagship LSM operations (Banza et al., 2009; Bread for all, 2014).
- Intimidation and legal persecution of human rights defenders in the DRC extractive industries, including mining (Global Witness, 2016b; IRIN, 2011; and ACAJ-ACBL, 2014).
- Strong political leverage of powerful mining sector actors, including of some ASM "cooperatives".

[89] Based respectively on 2014 and 2015 production data obtained from the United States Geological Service's online resources

[90] While the true extent of DRC's cobalt ASM sector is impossible to fully document due to the existence of incredibly complex and murky trading chains, the DRC's cobalt ASM sector on its own is certainly the world's second cobalt producing country, quite possibly overproducing China and Canada (2nd and 3rd global producers) combined.

[91] See, for example: http://ipisresearch.be/wp-content/uploads/2015/03/201704_cod_EasternDRC_A0.png

[92] Such as the Och-Ziff Capital Management scandal. For information on the case refer to: York, 2016; Patterson, 2016; and Wilson 2016.

[93] These include: customary taxes (*taxes coutumières*), "perdiems" to mobilise State Agents (among other things to fill-in paperwork required by the DRC's traceability controls), and routine registration payments at tolls.

Contrary to Rwanda, in the DRC a number of agencies have different and direct mandates when it comes to the management of the mining sector[94]. Chief among them are the National Ministry of Mines and its Provincial counterparts, Provincial tax authorities, CEEC, SAESSCAM, customary authorities, and Mining Police (PMH)[95]. Furthermore all mining sites, including artisanal ones, also count with presence of agents of DRC's intelligence agency the ANR. On certain sites presence of elements of the Congolese Army (FARDC) or of the Republican Guard[96] is regular. A presence that is in contravention of both forces' mandates.

SAESSCAM/ SAEMAPE[97] is the state ASM sector support and strengthening agency, it is in charge of all aspects related to ASM technical support and operates as a single point of payment from AM and SSM mines to export. CEEC is the State agency in charge of mineral assessment and certification, training of assessors, and of the implementation of conflict free standards, among other attributions. Both agencies in conjunction with the provincial division of mines play a crucial role in the implementation of conflict free mineral standards and the issuance of documents necessary to obtain exports certificates, but are all systematically and vastly underfunded and overstretched. On occasions their agents have personal interests in ASM activities and/or benefit from illegal operations (Promines, 2015, Global Witness, 2016, Eurac, 2017)[98].

Both the ASM sector and LSM operators coexist with the existing formal state infrastructure and its informal rent-seeking activities, in occasions colluding with it[99], yet most informal payments to civil servants do not award operating companies any competitive advantage over other companies. In certain regions of the DRC, in particular the Katangese Copperbelt, significant swathes of land are titled to LSM companies[100], this creates specific issues relating to resettlement but most notably to ASM/LSM interactions. Lack of available exploitable occurrences leads to AM and SSM miners operating on privately- or SOE-owned LSM operations, where they can enter in conflict with LSM operators. Security responses to these incidents have often turned violent, and sometimes deadly (Bread for all, 2014). In other cases SSM operators can enter into agreements with LSM companies to operate on their concession, more often than not this happens on titles belonging to the SOE Gécamines; however the majority of such arrangements observed are not based on a formal contract or any written document, leading to issues regarding the SSM operators' legality.

To operate legally AM and SSM operations need to be organised as cooperatives in the DRC, and while registered operators technically operate within this framework, existing cooperatives are structured in a way that does not represent or redistribute benefits to its members or the diggers working for the cooperative.

[94] Note that the author does not make any mention of agencies in charge of the environment, labour, standardisation, nuclear energy, etc… Even though all these agencies play a role in the mining sector and/or mineral supply chains.

[95] The PMH is a distinct police force uniquely tasked with the policing and protection of mining sites. Yet in August 2017, in Lubumbashi, mining security managers spoke of a reorganisation of polices forces that weakened that distinction in the Haut-Katanga Province. The author has been unable to verify this claim or whether it applies to other provinces.

[96] The *Garde Républicaine* is not a FARDC unit but a military unit depending directly of the Presidency.

[97] DRC's SAESSCAM has changed its name to SAEMAPE (a fully French acronym) in late 2017. At the time of writing this is not yet been reflected on the agency's website.

[98] For example Promines (2015) reports that "*In fact the vast majority of state agents at mine sites (up to 90%) is not on the official institutional payroll, instead remunerated through* [expenses and perdiems] *and taxes*". And a 2015 report commissioned by GIZ and the ICGLR notes that "*In light of the many challenges the organisation faces, SARW (2012) and other stakeholders have gone as far as to suggest that SAESSCAM should either be closed or reorganised (including privatisation or full provincial decentralisation (Pact, 2010)). However at the same time, specific SAESSCAM offices are noted as being well trained and very diligent in their work, namely: Kolwezi and Goma (Pact, 2010)*" (GIZ and ICGLR, 2015).

[99] As in the aforementioned Och-Ziff Capital Management case.

[100] For example the cities of Lubumbashi, Likasi, and Kolwezi are built above valid mining titles.

Cooperatives are often noted as being formalised structures with political clout that feed upon the work of diggers rather than representing them[101] (EURAC, 2017). As a result formal mining operators do not operate as a single actor, but instead represent at least three, sometimes opposed, sets of interests: MSM and LSM operators, SSM operators (cooperatives), and AM diggers (and washers, transporters, etc…). Informal mining operators represent yet another category of interests, most closely aligned with the interests of diggers operating as part of cooperatives.

As a result of this governance framework and regional, national, and local political dynamics the implementation environment in which standards operate is characterised by:

- Instability, conflict, insecurity, absence of the rule of law, and general impunity (Promines, 2015). Exemplified by the current flare-up of violence in the Kasaïs and Kivus, which has led to the death of two UN Experts and their translator in dubious circumstances and has already impacted the operations of certain standards. With President Kabila unlikely to speed the beleaguered electoral process[102], instability is unlikely to diminish in the near future.
- Entrenched political interests in the mining sector that would not beneficiate from the disclosure brought by standards. The case of the presidential family involvement in mining operations being emblematic[103].
- Misalignment of incentives between state agents and the agencies they represent, which favours corrupt practices. Which is further compounded by the low level of skills of agents and the legal requisite of state agent presence during traceability processes[104], this creates various vulnerabilities for traceability and certification processes. Among others, it has been reported in certain cases that SOE Gécamines has purchased ASM production, declaring it afterwards as its own mine production (Öko-Institut, 2011). This situation has been further exacerbated by the redrawing of a number of provinces in 2015, most notably of Katanga, DRC's mining engine, where full transition from a unique mining administration to four different entities is still underway for the services working with ASM operators.
- Operators aiming to be in full compliance with the cumbersome institutional framework and applicable rules can only do so at a significant cost, leaving little room for the implementation of financially sustainable standards. Additional unwritten rules and expectations also apply, further raising the cost of compliance and barriers to entry for standards. For example, while not required by law, it is expected that traceability systems operating in the DRC have a MoU with the Ministry of Mines (Promines, 2015) a time consuming process.
- While compliance is cumbersome most AM and SSM operations operate informally and with no guidelines in regards to child Labour, corruption, OHS, environmental impacts mitigation, or community relations. Responsible mining is a very far-fetched objective for these operations and the required gap closing is very significant. Similarly responsible sourcing is not a key concern for ASM traders as long as they can obtain the required paperwork to sell the minerals they purchased.
- There is an attractive alternative market for untagged Congolese 3T in neighbouring Rwanda due to price differences and weaknesses in iTSCi implementation (mostly related to its reliance on state agencies, lack of third party monitoring, and reactive mitigation caused in turn by its reliance on paper based systems).

This situation has specifically impacted standard implementation as:

- Standards have to operate in an extremely complex environment, where provisions have to be made to ensure that connectivity and infrastructure challenges are surmounted while implementers' safety is

[101] The most documented example being CEMAK (see among others: Amnesty International, 2014; World Bank, 2008; CASM, 2007; Global Witness, 2006).

[102] See for example Radio Okapi, 13.10.2017, *la MP attend « des dates réalistes pour la tenue des élections et non des dates politiques »*. Accessible via: www.radiookapi.net/2017/10/13/actualite/politique/rdc-la-mp-attend-des-dates-realistes-pour-la-tenue-des-elections-et. As accessed on the 30.10.2017

[103] See Congo Research Group (CRG, 2017) for details.

[104] DRC Ministry of Mines and DRC Ministry of Finances, 2014, *Manuel des Procédures de Traçabilité des Produits Miniers : de l'Extraction a l'exportation*, 2nd edition.

ensured. Furthermore efforts towards responsible mining have to be built from scratch for all AM and SSM operations.

- Involvement of governmental counterparts is necessary, either due to standards design or legal requirements. However agents' capacities and incentives have greatly impaired the efficacy and efficiency of schemes. iTSCi, as the sole traceability system extensively implemented, has been regularly noted as being abused for personal gain by the governmental agents in charge of its implementation.
- Given the regulatory framework it is challenging to reach compliance and ensure transparency in a cost-effective and market sustainable way, in particular for gold (Blore 2014; Promines, 2015).
- Due to conflict and economic triggered migrations, lack of alternative livelihoods and state agents' limitations there is concern that local community self-defence groups, or their patrons, are playing a role in exploitation of minerals at certain mine sites, even those already green-flagged (Promines, 2015). Risks confirmed by UN GoE reports (2015 and 2017 for example).
- Integration of schemes into legislation, as in the case of CTC, has distorted the standard due to the related additional demands. As a result implementation has been more complex and less effective (BGR, 2017b).

While the prior description paints a difficult picture it should be noted that in terms of legality, formality, operational conditions and involvement of armed forces the 3TG sector governance differs from other sectors where no standards have been implemented to date, in particular the copper and cobalt sector, as witnessed by the author during fieldwork in the Haut-Katanga and Lualaba Provinces.

The DRC is considered a level 3 country by the RMI, as such smelters sourcing from the country are under the obligation to disclose additional documentation showing conformance with the OECD DDG for both themselves and their sources. This can be done either by having an independent third party assess individually all sources, or through the use of a conformant scheme. The latter is often favoured by smelters due to cost and practicality.

4.2.2. Republic of Rwanda

Table 5 - Inferred RGI of Rwanda

Enabling environment Ranked against Bolivia, DRC, Peru based on similar World Bank indicators	1st or 2nd (inferred)
Voice and accountability	*3rd*
Government effectiveness	*1st*
Regulatory quality	*2nd*
Rule of law	*1st*
Control of corruption	*1st*
Political stability and absence of conflict	*1st*
Open data	-

Neighbouring the DRC, Rwanda offers a stark contrast in matters of governance. While the country is not ranked by the RGI, similar World Bank indicators describe a country whose enabling environment is *satisfactory*. Rwanda also depends much less on its extractive sector; while mining operations represent 40-47% of Rwandan total exports, they only represent 0.5 to 1% of government revenues, 1-2% of total employment (RNRA, 2013), and are the second foreign exchange earners after tourism (IGF, 2017).

The country is part of DF1502 coverage and is a natural route for the export and smuggling of minerals from Eastern DRC. Rwanda is also key to the world tantalum supply chains, as it contributes to 28% of the world

production. And while Rwanda's corruption levels compare favourably to its neighbour, corruption still exists[105], and could even be more difficult to bring to light than in the DRC due to the close knitted nature of its institutions[106]. A number of standards have been implemented in the country, including iTSCi, the pilot CTC, and BSP.

Following the Rwandan Genocide in 1994 a renewed focus was put on the sector as an engine for recovery and a transition from a publicly to a privately run sector was undertaken; a process that ended in 2006. Contrary to a number of African countries, Rwanda's privatization process went through achieving broad alignment between international development principles and national development targets. This translated into an overreaching reform agenda that included revised legislation, and the development of aligned policies, tax structure and titling process (Perks, 2016). As the vision of the reform prioritised the ASM sector, dedicated policies aligned with the overall objectives of the reform were implemented, including traceability and technical know-how strengthening. A focus clearly visible as SSM operations in the form of private ventures or cooperatives (all grouped under a single nation-wide federation) and AM miners are the largest 3T producers to this day, accounting for the vast majority of mineral production (BGR, 2014). And while most SSM operations are not yet in compliance with their environmental requirements, which are the same as the applicable standards for LSM operations, additional efforts are underway to close that gap (IGF, 2017). As a result of this particular privatization and reform path the number of government agencies that are involved in the management of the sector, including traceability and certification, are much more limited and streamlined than in neighbouring DRC. And while a lack of communication between these agencies and an overstretch of the agencies are still noted (IGF, 2017), the overall situation in terms of capacity, ease of business, and on the ground implementation and enforcement compares very favourably to the DRC and the vast majority of the continent.

Relevant sector governance responsibilities are shared between the:

- Ministry of Natural Resources, which is responsible for the development of policies, laws, and regulation as well as coordination and supervision of all the activities in the mining sector[107]; and the,
- Rwanda Mines, Petroleum, Gas Board[108] that holds the mandate to improve mining operations and implementation of the national mining policies and strategies and is entrusted with supervising, monitoring, and ensuring the implementation of issues relating to the protection and promotion of natural resources in programs and all activities of all national institutions (IGF, 2017).

Matters relating to the environment (including ESIAs) are shared between the Rwanda Development Board and the Rwanda Environment Management Authority. While issues concerned with environment are enshrined by law and regulations, and traceability mechanisms are well implemented and supported, there are no clear provisions for community consultations at the national level, a shortcoming from the point of view of responsible mining compounded by the lack of a robust civil society, limiting incident reporting greatly (IGF, 2017), and reflected in the country's *voice and accountability* ranking.

To date Rwanda has pushed for the implementation of mineral traceability and conflict-free certification to satisfy DF1502 demands that targeted level 3 countries. And while the efforts made to implement conflict-free regulations in Rwanda, and results obtained, are unique their implementation nonetheless presents ongoing challenges due to the predominant role played by AM and SSM (either directly or through sub-contracting arrangements in LSM operations) and the illicit mineral trade from neighbouring DRC. Illustrating these

[105] For example Transparency International's Corruption Perception Index ranks Rwanda 50th/176 with a score of 54/100, a score mostly unchanged since 2012. See www.transparency.org/news/feature/corruption_perceptions_index_2016, as accessed on the 30.10.2017, and ARM (2017)

[106] According to an interviewee who wishes to remain anonymous.

[107] As well as in the Water, Forestry, Land, and Environment sectors.

[108] Until recently (March 2017) part of the Rwanda Natural Resources Authority.

difficulties was the decision taken at the end of 2016 by Rwandan authorities to suspend all companies operating and selling minerals from exploration titles, creating overnight a vast number of illegal mines that State agencies had not enough resources to fully police. As a result child labour rates have increased in the now illegal sites (ARM, 2017). That mineral production is ongoing in these sites illustrates the fact that while most of the country's production is certified by iTSCi, certain gaps allow minerals to enter the certification system fraudulently, a fact often linked to mineral production from the DRC by UN GoE reports (2015; 2017, by example). Smuggling of minerals from the DRC being further driven by significant price differentials[109]. Yet, despite this price differential, AM miners that cannot comply with the (costly) conflict-free certification requirements are forced to sell to traders significantly below market price[110].

Interestingly it appears that for artisanal miners selling tagged minerals, the tagging process incentivizes consolidation of the sector by disincentivizing independent operations (IGF, 2017), mirroring CTC's adoption shortcomings amongst small AM and SSM operators.

Rwanda's mining framework and relatively capable agencies have proven a fertile ground for implementation of conflict mineral standards. However two central issues remain and have shown to be challenging to address using the nearly universally implemented iTSCi framework:

- Infiltration from material external to the mines or the country is known to be an enduring issue as highlighted by UN GoE reports (2015; 2017). For example using iTSCi production data Promines' (2015) comparative study reports that in Q1 iTSCi material from Rwanda amounted to 102% of Rwanda exports.
- Weak CSOs significantly affect the quality of social issues monitoring. A factor compounded by the lack of community consultation guidelines for government agencies and the lack of such demands within the predominant iTSCi framework.

On the other hand, technology based systems, namely BSP, while still in their early implementation have shown capacity to halt the export of suspicious individual material batches until full compliance was ascertained. Furthermore technology based monitoring has also demonstrated its ability to capture and highlight community related incidents to purchasing smelters. Illustrating the capacity of technology based "near real time" systems to keep abreast when operating in complex and shifting environments characterized by a multitude of small operators and potential material infiltrations, both key characteristics of the Rwandan mineral sector.

[109] See *DRC country capsule*

[110] Interview with Frank Butera, Executive Secretary Rwanda Mining Association.

4.2.3. Republic of Peru

Table 6 - RGI of Peru

Enabling environment	***62***
Voice and accountability	***80***
Government effectiveness	***59***
Regulatory quality	***85***
Rule of law	***57***
Control of corruption	***56***
Political stability and absence of conflict	***55***
Open data	***39***

Outside of the context of conflict minerals and its regional focus, Peru is the country with the most extensive experience in the implementation of standards, in particular in the gold ASM sector with the successful implementation of the: RJC CoP, Fairmined, and Fairtrade, as well as the BGI. Peru is also making use of an early iteration of a flexible SGBP as part of its ASM formalisation project, and is starting the implementation process of the Minamata convention. Furthermore Peru is one of the eight non-OECD members that adhered to the Recommendation of the Council on the OECD DDG[111], which calls for promoting the observance of the OECD DDG by companies operating in or from its territory, taking measures to actively support its integration into corporate management systems, as well as ensuring its widest possible dissemination.

Peru's *satisfactory* RGI score on the *Enabling Environment* indicators reflects a rather sound situation on the ground. However it should be highlighted that governance in remote areas such as the department of Madre de Dios, a major illegal ASGM production area, is significantly lower than in more urbanised and better-connected regions[112], additionally its *poor* score on the *Open Data* indicator is surprising considering that the country is the first implementer of the Extractive Industries Transparency Initiative (EITI) in Latin America.

Peru is the second largest producer of copper, zinc and silver in the world, and the leading producer of gold, lead and zinc in Latin America (KPMG, 2016). In 2016 mining represented 9.5% of the Peruvian GDP, and included some of the country's leading exports, such as ores and concentrates of copper which represented 29.5% of total exports (ECLAC, 2016).

Peru's ASM sector forms an important part of the country's mining landscape, particularly in terms of job provision[113]. It is however associated with grievances and legal and governance issues linked to its informality and illegality, mercury pollution, and widespread presence of forced labour and sexual exploitation linked to ASM communities (Vérité, 2013). These issues are particularly salient in peripheral regions, which have scant governmental presence (KMPG, 2016), which also coincides with significant ASM production hubs. In parallel gold smuggling to Bolivia has become a growing problem since the Peruvian Government's crackdown on illegal operations[114].

[111] While not legally binding, the Recommendation reflects the common position and political commitment of OECD members and non-member adherents.

[112] See, for example: Vérité (2013).

[113] ASM is estimated to provide 150,000 direct jobs, which support more than 500,000. The Ministry of Mines and Energy registered a total of 9,780 mining operations, including 1,575 SSM and 5,335 AM operators (MME, 2016), as the informality of the sector is likely to lead to an underestimation of the share of ASM operators, this should be treated as a lower benchmark.

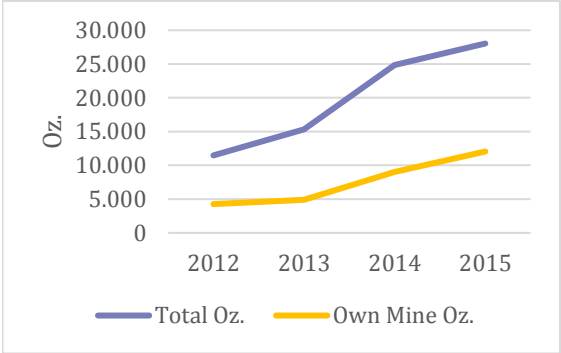
[114] See, for example: Insight Crime, 02.05.2017 *Peru-US Gold Case Shows How Importer Shifted Gears*. Accessible via: www.insightcrime.org/news-analysis/peru-us-gold-case-shows-how-importer-shifted-gears; Insight Crime, 26.11.2014,

MINEM, the main central government agency for the mining sector, has the authority to regulate mining activities and grant mining concessions. Other relevant stakeholders in the Peruvian mining sector include the National Superintendence of Customs and Tax Administration, the National Service of Environmental Certification; the National Water Authority; regional authorities and decentralised entities, such as the regional offices for mining formalization; mining associations, private companies, industry agencies and chambers, the third sector and the academia.

Another key stakeholder is '*Activos Mineros'*, a state owned enterprise established to implement and manage gold trading agreements with trading companies buying ASM gold in remote mining locations as part of the country's ASM formalisation process. Implemented in 2012[115], Activos Mineros has managed to channel more than half of the country's estimated ASGM production in 2016. To do so it has relied on a no-questions asked SGBP up to now. To date operators have only provided mine site location data under this framework, which will soon be verified by authorities[116].

Currently Peru possesses the only RJC certified miner that sources part of its ore from artisanal miners: Minera Yanaquihua S.A.C. (MYSAC), located 160 kilometres northwest of the city of Arequipa. It treats approximately 130 tons of ore per day, which is extracted by contractors, micro-contractors and artisanal miners working independently on the MYSAC concession. While it cannot be affirmed that RJC certification is the only driver behind it, it can be inferred from a clear uptake in production, as illustrated in Figure (Priester and Vasquez, 2016), that the systems that were implemented to achieve certification, including cohabitation mechanisms, and trainings provided to the artisanal miners have had an influence in this production uptake. Furthermore as a result of certification driven changes formalisation of AM operators is progressing (Priester and Vasquez, 2016), ASM-LSM tensions have been diffused, the company gained a better social license to operate, and mercury use has been phased-out (RJC, 2014; RJC 2015). This certification process was supported by the NGO *Solidaridad*.

Figure 6 - MYSAC production



Despite these successes an identified challenge for compliance with RJC CoP demands is ensuring traceability during the processing of gold ore. For operational security reasons the company currently has to sub-contract this process, and transports its activated carbon to processing plants in Arequipa and Lima where traceability gets lost. A possible solution to this challenge would be for MYSAC to develop an in-house desorption plant, as producing doré in-house would ensure traceability. However this would also expose the company to significant operational risks.

SOTRAMI, an ASGM operation, is currently starting the process to gain the RJC certification with the support of BGI. That SSM operations or LSM operations integrating AM wishing to obtain RJC CoP certification seek

Peru's Illegal Miners Trafficking Gold to Bolivia. Accessible viawww.insightcrime.org/news-briefs/peru-illegal-miners-trafficking-gold-to-bolivia. Reuters, 25.11.2014, *Lucha contra minería ilegal de oro en Perú crea nueva ruta de contrabando por Bolivia. Accessible via*:

http://lta.reuters.com/article/domesticNews/idLTAKCN0J91WL20141125?pageNumber=1&virtualBrandChannel=0. As accessed on the 30.10.2017 for all links

[115] Through the *Decreto Supremo N° 012-2012-EM.*

[116] Communications with Guillermo Medina Cruz, National Coordinator Peru, Better Gold Initiative. 05.10.2017

the support of knowledgeable third parties is an illustration of the difficulties AM and SSM operators face when progressing towards compliance with complex-standards.

Furthermore MYSAC has reported a lack of interest from refiners in purchasing certified gold as '*they just want to have gold*'[117]. Based on MYSAC's experience, this remains one of the main challenges for the implementation of RJC CoP in Peru.

Peru is neither considered a level 3 or 2 country by the RMI, as such smelters sourcing from the country are under no obligation to undertake further due diligence.

4.2.4. Plurinational State of Bolivia

Table 7 - RGI of Bolivia

Enabling environment	**49**
Voice and accountability	***73***
Government effectiveness	***41***
Regulatory quality	***32***
Rule of law	***21***
Control of corruption	***48***
Political stability and absence of conflict	***63***
Open data	***66***

While the implementation of BGI has recently started in Bolivia and complements the implementation of a limited number of Fairmined and Fair Trade sites, the country's most interesting effort to date has been its failed efforts to implement an SGBP, which offers valuable insights for standards operating across the globe as Bolivia's overall extractive sector governance framework score is close to the RGI's average, and thus similar to a number of mineral producing countries. As for a number of such countries Bolivia's exports are dominated by raw materials from its extractive industries; hydrocarbons and mineral and metals exports accounted respectively for 45% and 37% of the country's exports in 2011[118], making the sector a key concern for the government.

Bolivia licensing system is unique, as it comprises four types of mining licenses, namely: licenses belonging to the national SOE COMIBOL; cooperative mining licences (mostly SSM in size); SSM private licences; and, MSM private licences (SPDA, 2014). In addition to these licensed mining operations an estimated 45,000 AM and SSM gold miners operate illegally, including 13,500 children; half of these are working for no pay and at risk of trafficking (GITOC, 2016).

The peculiar licensing landscape found in Bolivia is a consequence of the restructuration of its national mining company (COMIBOL) in 1987 and the subsequent layoff of around 20,000 miners, the overwhelming majority of which were absorbed by the cooperative sector (Priester, 2013), leading, among other factors, to the very strong political leverage enjoyed by mining cooperatives in the country. These are indeed able to block the country's functioning to protect their interests, and have done so in the past, even leading to episodes of violence[119]. Of note is that the common understanding of what cooperatives are may not fit a number of Bolivian

[117] Declaration of Mr. CCC, worker at Minera Yanaquihua, Solidaridad Video 07/03/2017, min. 23:50; available at: www.solidaridadnetwork.org/news/video-solidaridad-works-on-improving-the-lives-of-gold-miners-in-peru. As accessed on the 30.10.2017

[118] Based on Ministry of Mines and Metallurgy data from Priester (2013)

[119] For example, the dispute between the National Mining Cooperatives Federation (FENCOMIN) and the Bolivian Workers' Centre (COB) in 2016, which led to protests across the country and during which Deputy Interior Minister Rodolfo Illanes was abducted, tortured, and beaten to death (HIIK, 2017).

cooperatives; while a few are true cooperatives, a majority of them resemble more closely small private companies that are organised according to cooperative law in order to retain their mining title. In such cases existing members rarely mine and rather contract miners to do so for them in exchange of a salary (Michard, 2008).

Other key stakeholders include the different ministries in charge of mining, including the Ministry of Mines and Metallurgy and its agencies, the Presidency (which oversees COMIBOL and other SOEs), the Ministry of the Environment and Water, Prefectures, private companies, industry agencies and chambers, as well as, CSOs and academia. It should be noted that stakeholder presence, in particular of the aforementioned government entities is geographically limited, and especially so in remote areas, which often overlap with ASM production areas.

As of 2012 recorded mining production is dominated by MSM (48%) and Cooperatives (45%), the remainder being registered as SOE COMIBOL's production (Priester, 2013). Non-inclusion of ASM production data due to limitations in production data collection, and indications that ASM sector miners (including cooperatives) register part of their production through COMIBOL (Bocangel, 2007) likely biases production figures in favour of the latter.

In addition to the aforementioned transfer of miners, machinery and mining titles were also transferred from COMIBOL to cooperatives. There has since been scant investment in machinery or know-how both by cooperatives or the State and as a result cooperatives productivity is very low[120], similarly their capacity to mitigate the environmental impacts of their operations is very limited (Priester, 2013). Illegal ASGM practices are noted as being even less environmentally responsible with operations taking place in at least 8 protected areas and using on average 36 kg of mercury for each kilogram of gold produced. Other impacts of ASM mining include water, air and soil pollution, primarily through mining acid drainage, and, faulty/inexistent OHS practices.

Furthermore ASM practices in regions neighbouring Peru and Brazil, a zone of social conflict, insecurity and very limited state presence, have been linked to human trafficking, including of minors, for labour or sexual exploitation in mining towns on the other side of the border (GITOC, 2016). Cross-border flows do not stop at labour. Following a crackdown on illegal mining from Peruvian authorities, Bolivia has become an international export hub for illegally produced Peruvian ASM gold[121], including playing a part in an operation that allegedly smuggled gold worth US$ 3.6 billions from illegal mines across Latin America to the US between 2012 and 2015[122]. An inferred role supported by the six-fold discrepancy between declared Bolivian gold exports and production[123].

Since 2006 an estimated 68 tons of alluvial gold from the Amazon and the border with Peru entered the Bolivian market through trading chains based on middlemen re-selling purchases to larger traders (Michard, 2008; Gomiam, 2011), this gold is then smuggled out of Bolivia, and worth an estimated US$ 3 billion (GITOC, 2016).

[120] For a roughly equal share of declared production as private MSMs, the cooperative sector employs 12 times as many miners.

[121]See: Insight Crime, 26.11.2014, *Peru's Illegal Miners Trafficking Gold to Bolivia*. Accessible via www.insightcrime.org/news-briefs/peru-illegal-miners-trafficking-gold-to-bolivia ; and, Reuters, 25.11.2014, *Lucha contra minería ilegal de oro en Perú crea nueva ruta de contrabando por Bolivia*. http://lta.reuters.com/article/domesticNews/idLTAKCN0J91WL20141125?pageNumber=1&virtualBrandChannel=0. As accessed on the 30.10.2017 for all links.

[122]See: Bloomberg, 16.03.2017; *Gold Company Manager Charged in Vast Peruvian Smuggling* Plot. Accessible via: www.bloomberg.com/news/articles/2017-03-16/gold-company-manager-charged-in-vast-peruvian-smuggling-scheme. As accessed on the 30.10.2017

[123]See Reuters, 25.11.2014, *Lucha contra minería ilegal de oro en Perú crea nueva ruta de contrabando por Bolivia*. http://lta.reuters.com/article/domesticNews/idLTAKCN0J91WL20141125?pageNumber=1&virtualBrandChannel=0. As accessed on the 30.10.2017

Following failed attempts to discourage ASGM miners from selling to these informal traders, the Bolivian government initiated its SGBP, the Bolivian Gold Company (EBO), to mitigate these challenges. EBO intends to buy directly from ASGM miners and its objectives include the gradual formalisation of the activity, and thus the implementation of regulations and better practices. Gold purchased through EBO could thus be considered as going towards responsible practices.

However lack of cooperation between government and cooperative stakeholders led to the parallel implementation of a non-governmental gold-buying programme established by the National Federation of Cooperatives: COMERMIN, which critically is exempted from taxing the gold it buys from miners (Toro, 2014), allowing it to offer better prices than EBO and thus weakening the latter. Furthermore COMERMIN's objective of gradually cutting out intermediaries, and thus shortening trading chains, did not push for requirements on sellers, and COMERMIN has historically had a better reputation amongst AM and SSM miners than government agencies (IIED, 2016). Finally the Bolivian Central Bank was allowed to purchase gold from both EBO and COMERMIN.

To date EBO has failed to attract significant sales to its buying stations having purchased a paltry 174 kg of gold between 2010 and 2014. A failed implementation that can be attributed to diverse factors, in particular:

- Lack of state capacity in ASGM regions, compounded by an overlapping lack of infrastructure and security;
- Limited and remote buying stations which require miners to travel and thus add significant operational costs to their sales to EBO;
- Better purchasing conditions offered by the competing COMERMIN and entrenched traders, which also provide pre-financing, and with which they have long-term trust based relations. Furthermore COMERMIN's operations are backed by the political and social muscle of mining cooperatives, a key ally of President Evo Morales.
- The EBO suffered from an overly-bureaucratic model staffed with few and ill formed agents, which contrasted with the operations of the highly-experienced (informal) intermediaries.

Bolivia is neither considered a level 3 or 2 country by the RMI, as such smelters sourcing from the country are under no obligation to undertake further due diligence.

5. Findings and identified gaps

5.1. Across supply chains

Due diligence and supply chain transparency mechanisms that issue certifications in the mid– to downstream fully depend on the successful implementation of certifications in the upstream. If these upstream certifications cannot be relied upon the entire certification architecture is compromised. That the current DRC conflict-free certifications are virtually entirely based on one scheme with notorious and noted shortcomings thus presents a risk to downstream implementers and users. Would iTSCi lose legitimacy or confidence, the conflict free supply architecture would no longer be able to function, with the exception of the few producers using alternative traceability providers.

Implementation is, and is likely to continue to be, driven by regulation or business-to-business (b2b) demand, accompanied in certain cases with efforts to protect company reputation and brand value. There is little consumer demand for responsibly sourced minerals at this time. A possible reason is that individuals, including those that prefer to source responsible products, generally do not realise the ubiquity of mine produce in their daily lives. Even individuals well informed about the natural resources or industrial sector may be blind to the ubiquitousness of certain minerals[124].

As there is little consumer demand for sustainably sourced minerals most downstream operators are content to simply undertake administrative box-ticking exercises and have little interest in the quality of the information they receive from the upstream. As such little pressure has been generated from the downstream to ensure that upstream schemes are operating effectively. Similarly, expert interviews have pointed that refiners sourcing from ASM are often satisfied with ensuring the applicable legislation has been demonstrably implemented, unless they have specific commitments and public policies in place that go above and beyond compliance with the letter of the law.

There is at the time no sufficient understanding of the incentives driving usage of certification initiatives and due diligence schemes amongst: insurers, financiers, and ESG information providers to these industries. Similarly the understanding of the position of trading and mining companies towards certification initiatives and due diligence schemes is too often treated as a single position for each of these stakeholders, not recognising the pronounced differences in business models and thus incentives towards ESG transparency and social acceptability of operations amongst the different types of companies composing these stakeholders.

Up-, mid-, and downstream operators undertaking compliance, and in particular certifications driven by regulatory compliance at times carry these exercises with limited investment over and above achieving strict compliance. The extent to which standards are implemented and generate ownership has a significant impact on both the willingness and capacity of upstream operators to engage in Development Partnerships.

This b2b demand could be strengthened by requirements during public procurement processes, in particular for industrial/construction materials such as aluminium[125]. In these situations final users (construction companies, or goods manufacturers) would either be required to integrate a given percentage of responsibly sourced minerals in their delivery. Or, in the case of public tenders, the percentage of minerals to be responsibly sourced could form part of the bid' evaluation, which would then be monitored and enforced.

As responsibly mined minerals that are traded, bought, and used under the label of responsible minerals by downstream actors are currently mostly produced through closed-pipe supply chains originating from ASM (with the notable exceptions of diamonds) due to cost and supply chain flexibility considerations it is most

[124] As an illustration, the author would like to recommend the following: Think about talc and how it could be important to your daily life. Then visit Wikipedia. Chances are that you will be surprised.

[125] For which the Aluminium Stewardship Initiative (ASI), a responsible standard, is being finalised.

probable that responsible sourcing mechanisms will use a similar architecture to conflict-free sourcing whenever possible – i.e. where bottlenecks can be identified in the mid-stream. Illustrating this likely mode of operation, IRMA currently "seeks to partner with organizations already filling this space [traceability and assurance providers] that also have sector-specific expertise and credibility" in much the same way as the supply of conflict-free 3TGs according to its website[126].

To the difference of conflict-free supply chains, which have emerged due to wide ranging regulatory demands that forced the uptake of standards by smelters to satisfy downstream companies, it is unlikely that demands for responsible minerals (which will not be a regulatory demand for the foreseeable future) will change the entire supply ecosystem, in particular as their geographic scope is global. Hence it is likely that to the difference of conflict free minerals, responsible minerals will not be sourced through smelters processing only responsible minerals. This opens three different scenarios at the smelter level:

- Smelters will make mass-balance statements, clarifying which amount of their production is from responsible origins. Which downstream users can then communicate?
- Certain smelters will maintain physical separation of responsibly mined minerals to comply with downstream demands.
- Certain smelters will solely smelt responsible minerals.

While the two last scenarios might, under certain circumstances and with the correct systems in place, allow for batch traceability to the mine site, they are costly scenarios. The first scenario would result in much easier, cheaper and faster adoption, provided that downstream users can communicate effectively.

Standards' success depends on both, the governance environment in which they operate and on how their functional characteristics play into each other. Standards have limited options to change these characteristics once established, as reversing decisions taken is more difficult as time goes by. This lack of adaptability may be particularly salient for standards with a broad stakeholder basis and an extensive consultation process. For example consensus building for the RJC is a complex and long-winded process due to the diversity and number of stakeholders[127]. Standards that maintain a clear demarcation between their standard and the instruments they use to implement said standard (such as specifically tailored data collection questionnaires) have theoretically the potential to be more flexible.

Due to a generalized lack of independent third party monitoring, when standards fail, this can remain undetected for a long time, unless brought to public attention by investigative journalism or NGO reports[128].

A number of efforts using digital tools are currently being undertaken to simplify data collection, reporting, analysis and communication regarding natural resources. These have the potential to complement future EU efforts, such as the Joint Research Centre Raw Materials Information System (JRC RMIS), or be adapted to the areas of interest of the EU. The list includes, but is not limited to: Trase (https://trase.earth/) which already receives EC funding, EICC's Risk Readiness Assessment (www.eiccoalition.org/standards/rra/), Global Forest Watch's Commodities Watch (http://commodities.globalforestwatch.org/), the Enhanced Pollution Monitoring (http://crosstech.cc/epm/en_US/services/) which received ESA seed capital, or UNEP's MapX (www.mapx.org) of which the EC is a partner, and possibly the OECD Portal for Supply Chain Risk Information[129].

[126]See www.responsiblemining.net/downstream-markets/. As accessed on the 20.03.2018

[127] Communications with Bethan Robson Herbert, certification and impacts manager at the RJC.

[128] For example see the cases of: Valcambi SA sourcing of gold from "Burkina Faso", actually Togo (Public Eye, 2015), and Kaloti Jewellery International's gold sourcing failures and its related cover up (Global Witness, 2014).

[129] The OECD Portal for Supply Chain Risk Information will only be online starting in 2019, as a beta version. See www.oecd.org/daf/inv/mne/oecd-portal-for-supply-chain-risk-information.htm. As accessed 04.05.18.

While emerging technologies offer substantial potential to simplify information sharing, analysis, reporting, and preventing information tampering (post data entry) it should be stressed that the implementation of digital technologies in itself will not solve one of the biggest issues for responsible mineral sourcing and supply chain traceability: data collection. Human and institutional factors will remain determinant.

The OECD has undertaken an alignment assessment of industry initiatives with the OECD DDG[130]. The assessment offers insights into the alignment of standards with the OECD DDG and their possible recognition under the EU CMR.

While targeting smelters to implement standards in mineral supply chains is a cost effective strategy, it does not allow for downstream users to implement full traceability up to the mine sites, for the few that whish to do so.

Furthermore it is unclear if this approach will be replicable for minerals that do not depend on a limited number of smelters or non-metallic minerals such as gemstones, mica, or talc for example.

Regulatory compliance driven standard uptake fosters the most uptake as they apply to all operators. Voluntary standards tend to be implemented only by the most advanced operators. This self-selection has been identified as a key issue going forward for IRMA uptake (BGR, 2017b). In order to foster uptake the standard will be using both a certified and a candidate certification level, the latter with less demanding requirements.

Standards that present a combination of minimum and progress criteria allow both ASM operators to get certified as demands are first limited and then nudge them towards higher levels of responsibility, while also pushing LSM operators towards full alignment with international best practice. Additionally they spread the cost of reaching "full compliance" over a more extended period of time while creating less operational disruptions.

Incentives, both negatives and positives can be ill-adapted[131]. Yet non-premiums known (or theorised) incentives can arise from the processes implemented in order to reach certification (as the MYSAC's rise in production illustrates). However these results are very context and company dependent and should only be factored-in as incentives in a manner that is both very cautious and fully takes into account individual circumstances.

When it comes to incentives it should be understood that incentives are not only monetary but include other aspects such as confidence between actors and the preference for stable long-term commercial relationships. Issues such as pre-financing and related provision of inputs are also important for operators, in particular when operating in remote/informal areas. Finally the desire of most individuals to be considered "good citizens" should not be discounted as self-perception of the operators can be a strong incentive for standard adoption.

On the other hand negative incentives are found to generally be missing, as few standards can sanction their members over and above exclusion (BGR, 2013), which is mitigated by re-application. And even then, the "simple" exclusion of major participants in standards can prove very sensitive as standards will find it difficult to exclude major members that by their participation give credibility to the standard. Exclusion is thus generally

[130] Specifically the RMI, iTSCi, RJC, London Bullion Market Association (LBMA), and Dubai Multi Commodities Centre (DMCC)'s standards. For further details see OECD (2018).

[131] When financial incentives for standard uptake are offered, it is important to consider to whom the price is passed. Illustrating this challenge "*National Bank of Ethiopia developed an SGBP that buys gold at 105 per cent of the LBMA price. This price is passed on to Ethiopian goldsmiths and jewellers, who are obliged by law to buy gold only from the National Bank of Ethiopia or its authorised agents. While successful in capturing gold, there is a risk that in the long run the increased price could undermine the competitiveness of Ethiopian gold products on the international market, and encourage informal markets. This has had the side effect of encouraging the downstream actors – particularly goldsmiths and craftsmen – to look for illegal gold inputs available in neighbouring countries or parallel markets*" (IIED, 2016:26).

used only as a very last resort. It has been noted by NGOs that while responsible mining efforts can produce life-changing impacts in the upstream, their overall contribution to the world production remains limited at best and can be over-emphasised by downstream users wishing to create a better public image without fundamentally altering their operations. In that respect BGI has been singled out as allowing the Swiss gold smelting industry to enhance their image to an extent that is not in line with BGI's contribution to their production.

Finally, a number of actors present in the EU that are not often considered as relevant have been mentioned during interviews with local experts as potential stakeholders in responsible sourcing. In particular retail banks to facilitate bank and credit access, as well as foundations undertaking publicly available relevant research.

5.2. In the downstream

SMEs are an important yet hard to reach constituency, in particular for those SMEs that reside in MS' remote areas, limiting their exposure to developments within their industries and impeding knowledge sharing. This can be offset through contact with their representative bodies (chambers of commerce, business associations, etc.) or MS' responsible agencies (RINA Consulting, 2017), or through the establishment of regional forums to facilitate knowledge sharing and peer networking (BGR, 2017).

Industry associations and industry initiatives are key players as they bring members interest to the fore, help them to implement regulations, and serve as a point of contact for the myriad SMEs present within the EU's MSs.

Downstream companies, in particular SMEs, lack clarity as well as capacity to respond to responsible mineral sourcing. One of their biggest constraints is that their supply chain due diligence can be blocked by a single uncooperative supplier and that, being small consumers, they often lack the leverage necessary to obtain the needed information. Furthermore they often lack the resources needed to effectively implement supply chain due diligence and make sense of the demands made to them by different stakeholders. As a result compliance with DF1502 is seen as a cost with very limited benefits from the downstream perspective and leads to treating compliance as a required box ticking exercise.

Reporting has emerged as a particularly difficult topic both for compliance with DF1502 and RJC CoP. Reporting may represent a sticking point for large companies as well and especially so when they report proactive actions in the field. For example companies engaging with child labour in their supply chains, instead of sourcing elsewhere, cannot escape acknowledging that part of their sourcing is mined by child labour, and, find it difficult to convince public opinion that this engagement, without severing commercial ties, is the right thing to do, when changing suppliers would negatively impact local communities, including the very children that such actions intend to protect.

Due to the number of intermediaries between them and mine sites, operators do not see how their intervention can carry up to the mines. This perception is also shared by large companies. As a result there is a perception that this is an issue downstream companies cannot do much about and there is thus very limited ownership of the problem.

Agencies implementing or supporting the implementation of the EU CMR at both the EU and MS level can capitalise on their existing experience relating to FLEGT, REACH and RoHS implementation[132], and by extension to efforts towards responsible mineral sourcing.

[132] Communications with Julie Timon, Policy Officer, DG TRADE and Gudrun Franken, Head of unit Mining and Sustainability, BGR.

5.3. In the midstream

Demand from smelters for responsible minerals seems to be, currently, very low. This is illustrated by MYSAC's experience, even though they produce a high value product (gold) with a high potential for a "responsible mineral" premium due to its luxury status. For industrial metals that are largely "invisible", such as iron, producers are even less likely to be able to capitalize on the same potential demand.

A number of actors in the midstream feel that the compliance weight and responsibility placed on their operations due to their position within supply chains are disproportioned and that other actors in both the up- and downstream should take more responsibilities. At the same time representatives of host countries express the wish that further monitoring of smelters in home countries be conducted.

5.4. In the upstream

To the knowledge of the author no systematic and replicable research has been undertaken on the effects of standard implementation on their region of focus, we are as such unable to evaluate the impact of conflict-free and responsible sourcing in the field. This lack of information is particularly critical when it comes to conflict minerals regulations and the corresponding standards, as there is limited evidence that conflict-free requirements have had the intended impacts on human rights abuses while they may have caused significant economic and livelihood losses for some of the poorest communities in the world. In other words, it is as of yet unclear whether enforcing conflict-free sourcing has led to a reduction or to a positive shift of patterns of human rights violations in target countries or areas, as government forces are now reported to be responsible for the majority of human rights violations (Promines, 2015), while at the same time it is also unclear whether any changes offset the impacts these requirements have had on ASM communities' livelihoods, due to the temporary de-facto ban on DRC minerals that DF1502 introduced due to companies' preference for divestment instead of costly on-the-ground verification. Finally it is also unclear whether conflict free sourcing has significantly impacted the finances of armed groups or if these groups have shifted to other sources of financing to maintain their activities, as suggested by Promines (2015).

In a nutshell despite significant implementation efforts it is as of now unknown whether policies designed to help at risk populations through supply chain interventions are making things better or worse. And in the case of conflict minerals, whether measures have impacted the funding and operational ability of armed groups that commit human rights abuses.

The majority of standard implementation in the upstream occurs in regions where institutional quality and enforcement is lacking, in particular for standards focusing on ASM. This creates specific difficulties as no standard can currently meaningfully operate in the absence of the rule of law. A key issue is the fact that standards require operations to be legal, even in regions where legal compliance might simply not be possible due to the absence of the rule of law. Indeed, ASM experts can consider more relevant whether an AM (or, in cases, even an SSM) operation is legitimate with local communities rather than whether it is legal according to national regulations.

Implementing agencies in host countries tend to focus on measures that are aligned with their areas of expertise such as technical and technological solutions for geologic or assay services or regulations and laws for central authorities. Influencing policy response and design.

Costs are an important factor in the uptake of standards, especially if certification costs are not recouped by any premium. Compliance is costly and operators will find a way to liquidate their stocks on parallel markets if compliance costs are too high, the higher the value/bulk ratio of the commodity the easier it is. Artisanal miners that cannot comply with standards due to their cost depend on traders purchasing non-compliant material

significantly below market price, which in turn impacts negatively both dependent communities, supply chains, and the standard itself.

Cost factors are also important for the standards themselves, iTSCi and BSP have shown that while they are financially sustainable once implemented in most cases they need "sponsors" to implement the standards on AM and SSM sites. Scalability may therefore be more limited by initial financing than long-term operational sustainability.

Smaller upstream operators face disproportionately higher costs than larger operators, as not only do they have less capacity to start with and have to close a wider gap, but the overall relative cost of each gap closing action is relatively higher as their income is more limited.

Furthermore compliance with exports administrative requirements, and their full understanding, can be particularly difficult for small operators, even certified ones[133].

Parallel markets, especially if associated with price differentials, strongly reduce compliance incentives. Parallel markets often emerge in border areas (Reno, 2000) where they are particularly difficult to curtail due to issues of remoteness, coordination between the agencies of different countries (and sometimes, outright enmity or conflict between said countries). Parallel markets are often regional problems that require concrete regional solutions.

Parallel markets are particularly damaging to responsible sourcing when supply chains can be infiltrated for a long time without being noticed. Reliance on state agencies and paper-based systems appear to put depending standards at a greater risk.

Government agencies and their staff do not necessarily respond to the same set of incentives. This is rarely, if ever, reflected into stakeholder mappings. When agents are not paid a salary by their agencies, or when this salary goes unpaid often, agents will need to generate alternative revenues and thus accept payments that debilitate the standards they monitor, or facilitate (or even participate in) informal and/or illegal practices.

Audits can only take a snapshot of the operations, and with the ASM sector being extremely dynamic, with conditions that can change within a few days and entire AM or SSM sites or cluster of sites appearing or disappearing within a few months (IPIS, 2015), certifications obtained by sites can sometimes no longer reflect the conditions on said sites once the audits are finalized.

Due to ASM dynamism, the size, terrain and poor infrastructure of a number of mineral producing countries, country level and non-dynamic CAHRAs designations are problematic and risk creating a number of false negatives and false positives when raising red flags for necessary further due diligence.

Due to the number of certifications implemented in certain areas there is *audit fatigue* amongst often-audited operators. Production disruptions caused by auditing visits represent a further cost to achieve compliance, often strengthening a reluctance amongst operators to undertake "*yet another audit*".

In countries where compliance is already costly, as in the DRC, mitigating issues by undertaking additional steps or imposing additional requirements can add an unsustainable level of costs to both the operators and to standards, creating disincentives for the participation of operators and further squeezing out the margins that allow operators to pay for the standards to be implemented. In other words, responding to shortcomings by designing additional rules may render existing financially sustainable standards unsustainable.

As the cases of Bolivia and the DRC illustrate, ASM cooperatives are not necessarily weak actors socially and politically speaking. Both countries also illustrate the fact that a number of such operations are only cooperatives in name, and that their mode of operation runs contrary to cooperative principles and may actually

[133] As reported during the project's workshop in Bogotá by a Fairmined-certified Colombian SSM operator

foster the exploitation of miners. Mandating the organisation of ASM into cooperatives, which is often seen as a good opportunity for local governance and poverty alleviation on paper, may thus create challenges that are rarely acknowledged.

Finally, as regularly emphasised by miners during workshops, approaches that aim to impose standards on their activities (via formalisation, regulation, or certification) rarely consider miners' cultural attachment to mining activities (when relevant) or their pride as hard-working members of society, instead focusing on heavy (or at least perceived as such by miners) top-down approaches that tend to treat them as unaware of the ins and outs of their activities, or worst treat them as criminals. This includes the design of cleaner ore extraction and processing technologies that do not take into account local logistics, availability of energy or spare parts, or the specifics of the local mineralisation.

6. Recommendations for EU action

As a premise to our recommendations, the author and STRADE team would like to state that they agree with BGR (2017b) findings that existing core standards are extensive and sufficient and that pushing for the creation of new core standards risks creating more confusion amongst stakeholders and potentially audit fatigue. Hence our recommendations focus on facilitating standard uptake and enforcement in the upstream, while mitigating their negative effects on legitimate livelihoods, and reducing compliance costs in the EU (downstream). Or, in other words "*The crucial point is the successful and broad implementation of responsible mining schemes rather than the elaboration of further frameworks*"[134]. Furthermore as demand for responsibly sourced minerals is to date incipient and vastly outclassed by the, regulatory-driven, demand for conflict-free minerals these recommendation focus to an extent on the latter as the successful implementation of the EU CMR framework offers a template for responsible mineral sourcing. As a consequence of these points, the author believes that, if envisioned, the addition of additional risks to the OECD DDG (such as environmental impacts, or unfair payments to local populations) should not be made directly into the standard, but rather in dedicated supplements.

At the same time, STRADE acknowledges that while the positive impact of standards and due diligence initiatives is not yet proven in their upstream areas of implementation; however, they not only offer assurance that consumers are not financing activities that run contrary to EU values, but they also offer a solution that is more readily implementable than the required overhaul of governance structures and capacity that they intend to complement. Therefore a long-term and sustained European engagement for good governance and government capacity building is essential and should have long-term priority. On the other hand supply chain standards offer an opportunity to create change at the global level, on a much shorter notice, and at a lower political cost. However their impacts on human rights enjoyment in their areas of implementation first needs to be carefully and urgently assessed. If required these standards should be amended or complemented to ensure that on balance they do not adversely impact human rights enjoyment in third countries while upholding core EU values in the EU and abroad. In other words, implementation should seek to "do good" while ensuring that at a minimum to "do no harm", in line with the EU Policy Coherence for Development and 'Official Development Assistance plus' concept[135].

Therefore STRADE recommendations focus on how the EU can support the successful implementation of responsible sourcing, including the avoidance of negative side-impacts, while contributing to long-term good governance and governance capacity building.

Within this framework, the relevant EU and MS institutions should do the following:

6.1. EU laws and regulations and institutions

Encourage responsible mineral sourcing via its public procurement rules either via regulatory demands or through preferential bid evaluation for bids containing responsibly sourced metals and minerals in particular in the infrastructure and public transportation sectors.

The EC should map all EU funded projects dealing with natural resource governance, supply chain management, and related technologies (such as: remote sensing, blockchain and similar technologies, etc…)

[134] STRADE Project, 2016, European Policy Note n° 07/2016, *Voluntary initiatives in the mining sector and their principles and criteria on environmental sustainability.*

[135] For further details on the EU Policy Coherence for Development, see https://ec.europa.eu/europeaid/policies/policy-coherence-development_en. As accessed on 02.05.18 and STRADE Policy Brief 08/2017 (http://stradeproject.eu/fileadmin/user_upload/pdf/WP3_3_1-Policy-Brief-D-3-7_08-2017_v03_final_20170925.pdf)

and ensure that potential synergies are identified. Information on the relations between these projects should be publicly available and easy to access. Both the VERAM Roadmap[136] and FORAM[137] offer potentially suitable starting resources to do so.

For the forthcoming definition of the CAHRAs, adopt a methodology that allows CAHRAs both to be identified at the sub-national level (in particular for large countries with localised high-risks) and be adapted over relatively short periods of time to reflect changing conflict patterns. Complementarily, adapt reporting tools for the downstream as required.

Fund supply chain R&D with the objectives of bringing down the costs of certification and monitoring, and analyse and disseminate information about supply chains. In particular, focus on how:

- Community monitoring can be implemented and credibly integrated in risk assessment instruments;
- Remote monitoring could drive down costs and transition into dynamic site monitoring;
- Network analysis and big data approaches can generate transparency about supply chains and identify key, non-smelters, actors for the dissemination and strengthening of standards across supply chains;
- To encourage the transition to digital based standards;
- Blockchain can be capitalized in the natural resources sector to encourage the systematic and automatic exchange of information across parts of the supply chain and limit the tampering of data post data-entry. Other technologies, also for the simultaneous update of information across different data-silos, may come at a lower cost (in particular energy-wise), as they work at a slower speed and lower verifiability. Which technology is preferable ought to be based on a careful cost/benefit analysis;
- BGR's AFP fingerprinting can help lower fraud in mineral traceability through randomized and/or targeted testing.
- To support the implementation of core standards by supporting the creation of alternative certification and traceability schemes, that are fully compatible with reference core standards, in particular the OECD DDG in order to offer a broader variety of option for certification and traceability that can adapt to specific supply-chains (region and mineral-wise); To avoid creating further confusion amongst stakeholders this proposed standard diversification should be paralleled by the creation of a requirements and equivalence matrix (see dedicated recommendation in section 6.3 below) as well as specific mention as to the core standard(s) thus implemented.
- To finance implementation of certifications in AM and SSM operations in efficient and sustainable forms, be it through donor and/or government investment or participative financing from local mining communities
- Traceability and due diligence can be cost-effectively implemented in mineral supply chains that are not characterised by chokepoints in the mid-stream.

For practices that are detrimental to human rights, the EU and its institutions should assess which regulations at the EU and MS level can make use of the information that will be disclosed for CMR compliance or as part of non-financial reporting. The case of the *California Transparency in Supply Chains Act* can offer a blueprint.

6.2. EU input into standards and instruments

Undertake an impact assessment of how standards have impacted the conditions they sought to change. In the case of conflict minerals carry out or commission a systematic study that assesses whether implementation of conflict-free standards following DF1502 positively impacted the levels of human rights abuses in Eastern DRC, limited the funding of armed groups committing human rights abuses (including Public Forces), and whether any such gains created were not offset by the impacts of the resulting temporary *de facto* embargo

[136] For more information on VERAM Roadmap see http://veram.eu/#!/. As accessed on the 02.05.18

[137] For more information on FORAM, see www.foramproject.net/. As accessed on the 02.05.18

on Congolese ASM minerals. If the evaluation finds that de-facto embargoes have appeared and negatively impacted the conditions they sought to change, design the proper incentives to dis-incentivize region-based embargoes and incentivize the implementation of more fine grained due diligence measures that would allow buyers to source from mines that while in areas of conflict or high risk are certified, validated or deemed to be (and demonstrably so) free of human rights violations in order to avoid region-based mineral embargoes.

Undertake periodic assessments of the functioning, integrity, and responsiveness of standards (including the handling of non-conforming members), in particular of those standards whose malfunctioning would present systemic risks to conflict-free or responsible mineral sourcing due to their central role in regards to certification, traceability or due diligence.

Similarly the impact of the EU CMR on the upstream should be monitored from the onset, and inform the implementation of the policy. These impact assessments should be regularly evaluated and form the basis for decisions regarding potential modifications of the policy. Including central decisions such as the extension of the policy to other minerals or geographies, mitigation of policy negative impacts, and, if deemed appropriate, policy termination. This would be consistent with the EU Policy Coherence for Development and 'Official Development Assistance plus' concept.

Support the diversification and market-entry of schemes implementing core standards and thus lessen the systemic risk of a single scheme failing and jeopardising conflict-free and responsible sourcing supply chains.

As part of the engagement with standards and standard setting bodies, in particular the OECD, encourage and facilitate the update of standards to reflect operationalization shortcomings that have become visible during implementation.

Support the transition towards digital data gathering and distribution, focusing particularly on systems that are tampering proof once information has been entered into the system and that allow for the (more or less) immediate dissemination of said information.

As part of the engagement with standards and standard setting bodies encourage and facilitate the harmonization and cross-recognition of standards, and horizontal and vertical interoperability.

Where appropriate support and encourage the transition of standards towards allowing stepwise improvements (such as standards with minimum and progress criteria).

As part of this support ensure that reporting templates are aligned with GRI MMS' progressive grading.

6.3. EU support to its constituents, including companies

Raise awareness on the ubiquitousness and necessity of minerals in the daily life of EU's citizens and their production conditions to create consumer demand and a market for responsibly sourced minerals.

Clearly and publicly communicate to all stakeholders, what the EU's expectations will be for conflict free and responsible minerals. This includes specifying which standards it will recognize.

As part of this outreach EU authorities should have a dedicated outreach strategy for SMEs, which should fully integrate the findings of RINA Consulting (2017) study and focus on the favoured source of information for SMEs regarding legislative demands, namely "*national governments/agencies closely followed by the European Commission and national trade associations/chambers of commerce*".

Part of this outreach should present the benefits of traceability and due-diligence not related to regulatory compliance, such as identifying new market opportunities or supply chain improvements. Relevant MS agencies or national trade associations/chambers of commerce should be capacitated to support SMEs in capitalizing upon these potential benefits.

Identify and target key players in the EU whose adoption of responsible mineral sourcing practices would drive uptake due to their business connections. Network analysis has shown great potential to identify such actors at a limited cost[138]. And could be integrated into the JRC RMIS[139], where it would facilitate the traceability of minerals down to their probable region of extraction for downstream companies. The Trase platform (https://trase.earth) provides an interesting and highly understandable template to do so. Also note that a beta version of the OECD Portal for Supply Chain Risk Information[140] will be made available in early 2019, this instrument will facilitate implementations of the OECD DDG steps 1 and 2.

Design and distribute to all stakeholders the appropriate reporting frameworks for EU CMR compliance and reporting on their engagement in the upstream sector, and if still relevant by then DF1502 compliance. This would include specific reporting and communication guidelines and templates for operators using, or relying on suppliers using, mass balance approaches. As well as companies undertaking long-term engagements that exposes them and their supply to heightened, and known, risks until their engagement is sufficiently advanced.

Reporting should be aligned with both the EU Non-Financial Reporting Directives and relevant and well-adopted (to minimize costs to downstream implementers) standards, such as the GRI MMS.

To avoid whitewashing, reporting guidelines and templates should ensure that companies cannot overstate their engagements or the proportion of their mineral production/consumption that is sourced responsibly. Furthermore, to ensure clarity in the reporting, vocabulary used to report probability and risks should be standardized. Aligning this vocabulary with the risk assessment vocabulary used by EU intelligence agencies has the potential to further avoid possible confusion.

Create a resource centre that will address the needs of EU downstream companies, in particular SMEs, in regards to responsible mineral sourcing and EU CMR and DF1502 compliance. This resource centre could be integrated into the JRC RMIS. In line with the findings detailed in BGR (2017) and this report's findings, the resource centre should provide the following resources in all EU languages[141], ensure that translations are of a good quality and that the language can be understood by all. It should also automatically alert signatories to any change in regulation or its application. Said resource centre should include:

- Relevant data available on supply chains;
- All available trainings on responsible supply, due diligence, and reporting;
- Information on legal and policy requirements;
- Include a questionnaire to determine whether regulations are applicable to the operator;
- A hotline;
- An overview of the relevant and applicable standards and the areas they comply with;
- Contact details to relevant services at the EU and MS level;
- A frequently asked questions (FAQ) section;
- Standardized templates to make supply chain enquiries;
- Standardized templates for reporting (see prior recommendation).

[138] See in particular Mizuno et al., (2016)

[139] For information on the proposed structure of the JRC RMIS, see the *STRADE Draft concept for a data and knowledge information system on mineral mining and trade and related environmental and socioeconomic issues*. Available at http://stradeproject.eu/fileadmin/user_upload/pdf/STRADE_Draft_concept_information_system_20170920.pdf As accessed on the 12.12.2017.

[140] For further details see www.oecd.org/daf/inv/mne/oecd-portal-for-supply-chain-risk-information.htm, as accessed on the 02.05.18

[141] Provision of the information in other major languages used in the mineral, electronics, aviation, automotive and construction sectors such as Mandarin, Cantonese, Japanese, Korean, Russian might be considered as adding value. Official UN languages that are not EU languages should be given priority (Mandarin and Russian).

In order to simplify downstream operators reporting and lessen audit fatigue in the upstream: design a requirements and equivalence matrix. A matrix of certifications that takes into account standard cross-recognition and requirements. This matrix should allow operators to rapidly assess what degree of conformity they have vis à vis each core standards based on the certification of their material or operations – i.e. how conformant the operator is with standard X simply by being conformant with standard Y and what are the remaining gaps to be fully conformant with standard Z. The certification matrix could also be used to provide a single consolidated score of how "responsible" the operator mineral sourcing is.

Support industry associations to increase their leverage regarding responsible mineral demands on mid- and upstream operators.

Cooperate with industry initiatives, in the up-, mid-, and downstream, to foster change in the upstream via the establishment of Development Partnerships.

As part of the establishment of Development Partnerships, and to offset the lack of leverage from downstream operators on the upstream whilst pursuing EU's objectives regarding responsible mineral production: design a fund in which downstream actors can invest as a private effort to foster EU efforts, thus gaining leverage on the upstream and federating their efforts.

Specifically the fund could finance standards' scalability and monitoring, supply chain R&D, supply chains shortening, the adoption of better practices by AM and SSM mining operators and offer credit for the adoption of better practices. It is recommended that contributions from companies be earmarked for more visible investments that can fit companies' CSR narratives.

6.4. EU and MS interactions with third countries

In line with STRADE's European Policy Brief: Aligning EU cooperation with resource-rich developing and emerging countries' needs – key elements for creating win-win partnerships and a strategy for sustainable mineral supply[142]:

- Establish clear coherent "overarching principles" for aid and cooperation in line with the objectives of the EU Code of Conduct on Division of Labour in Development Policy;
- Integrate host countries mineral agendas into project planning to facilitate implementation of forthcoming projects concerned with the mineral or the natural resources sector;
    - As part of these projects, privilege a transition from fractured studies to focused project implementation with visible results
    - Complement host countries data gathering and analysis via the coordinated funding of relevant field research, in regions and sectors linked to EU imports.
- Support the design and piloting of mineral sector Development Partnerships[143].
- Support national mining dialogue forums with representatives of mining (affected) communities and the civil society. As well as inter-ministerial roundtables and the formation of taskforces to ensure that there is no siloing and that policies are not contradictory and when possible complementary.
- Encourage host countries to implement direct communications channels from miners and mining-affected communities to central authorities.

[142] Policy Brief 08 / 2017, accessible via http://stradeproject.eu/fileadmin/user_upload/pdf/WP3_3_1-Policy-Brief-D-3-7_08-2017_v03_final_20170925.pdf

[143] The MDNP (EU-Latin America Mineral Development Network Platform) project, which sets up an online platform to connect EU und Latin American businesses in the mining sector (along the whole mining cycle), offers an interesting example of such partnerships. See MDNP's website for further details: http://mdnp.i3code.net/

- Support cross-border and regional cooperation forums/bodies to facilitate the stemming of illicit cross-border flows and related governance challenges debilitating traceability and due diligence in the upstream.
    - Support should be directed to the forums/bodies that have a proven track record of facilitating positive and sustainable concrete cross-border and/or regional cooperation
- Encourage multidisciplinarity in agencies to broaden the menu of policy responses as well as facilitate communication with complementary agencies with different technical expertise and the creation of ad hoc or formal issue-based and solution oriented taskforces. Encourage whenever possible the representation of the regions of extraction in the decision making bodies, within a fully meritocratic framework.
- Continue programs training government agents on the subject of responsible mining with an emphasis on concrete implementation. Including;
    - Advisory on the establishment of incentive frameworks for responsible mining uptake, implementation, monitoring, and reporting;
    - Sensitizing to issues of communication and confidence building with mining communities both for the implementation of measures, the design of said measures, and the design of cleaner modes of production.
- Continue efforts strengthening the rule of law in host countries in general and in the extractive sector in particular. This includes:
    - Strengthening local government institutions and involved CSOs
    - This strengthening should take into account that agencies and individual agents might be working under different sets of incentives;
    - Strengthening parliamentary oversight capacity at the institutional and MP level, including training where necessary;
    - Strengthening the implementation, monitoring and inspection, and reporting capacity at the mines level;
    - Provision of advisory and monitoring, and inspection assistance at the mines level;
- Contribute to the support of anti-corruption efforts;
- Integrate the understanding of illegal minerals trade and markets in its project implementation, while supporting the creation and implementation by host governments of mitigation measures that are resilient to the impacts of the illegal mineral trade.
- Support government, or independent credible host country efforts to produce information on mining and its impacts, in particular databases that can be integrated into the primary data used by the forthcoming JRC RMIS.
- Support recognised NGOs well accepted by host governments and active in the sector. ARM in Colombia offers a clear example of the positive role these third parties can play.

Ensure that efforts made to design, implement, strengthen and promote EU CMR compliance in host countries simultaneously strengthen the governance of other mineral sectors, including sectors with limited to no connection to the EU, such as construction materials.

Requirements for certifications and subsequent export to EU markets under EU CMR will be difficult to understand for ASM operators, similarly to the requisites for formal operation and exports. EU institutions should partner with host countries to provide consolidated guides directly to ASM miners that will present them their rights as well as all the relevant information for formal operation, certification, formal exports, and exports

to EU countries in a clear, understandable, and actionable language in a single document. In addition to being short and easily understood when relevant these documents should be printed on waterproof supports[144].

Formal general export and customs procedures and administrative requirements can be overwhelmingly complex for smaller operators. Easing export requirements to the EU for certified operators can provide a clear non-monetary incentive for these operators and strengthen responsible mineral supply to the EU. This easing of export requirements can theoretically be integrated in a progressive certification scheme to continue providing incentives for adoption of best practices until full alignment.

Ensuring responsible mineral supply to the EU should include efforts to foster interest in certifications and ownership of those in the upstream by helping upstream operators to recognise the non-commercial benefits of certification and support their efforts to capitalize on said benefits.

6.5. Others

Join relevant international forums or industry initiatives where the EU can exert leverage on the development of best practice such as the Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development (IGF).

Support and commission standard monitoring by independent third parties (local and international NGOs, CSOs or private service providers).[145]

Support and fund investigative journalism in the natural resources sector[146].

Encourage the demand for responsible minerals from smelters and request smelters to provide information on their responsible sourcing of minerals through a mass balance approach, using existing responsible sourcing standards.

In the longer term, if necessary and congruent with both EU policies and market demands, fund the upgrade of identified smelters supplying large volumes to the EU downstream operators to ensure the capacity for physical separation of responsibly mined material (unless mass balance approaches are the vastly favoured approaches).

Explore how EU-based non-traditional actors can be supporting stakeholders in realising EU objectives while operating based on their own interest. Examples include ensuring alignment between foundations undertaking publicly available research on the natural resources sector and EU research needs, or the participation of EU retail banks as banking institutions for ASM miners, which are often turned down by banks in host countries.

Undertake or commission research on the clustering of mining and mineral trading companies relative to their interests in good governance and the social acceptance of their operations.

[144] For example both a guide to miners human rights and legal taxes for miners that operate in environments where informal taxation by State agents is common, or a guide on OHS need to be carried by AM miners in their pockets, where they are likely to get wet and thus not taken on site if not waterproof.

[145] Any NGOs or CSOs to be supported should be scrutinised through their past work and reputation in order to ensure that they actually act in line with the EU's goals. Especially in Latin America, some NGOs/CSOs are known to be radical anti-mining advocates, which might contradict a successful cooperation aiming to advance responsible mining and sourcing practices.

[146] Organisations such as the International Consortium of Investigative Journalists (ICIJ), Organized Crime and Corruption Reporting Project (OCCRP), or CORRECT!V have done very relevant work in the mining sector for example. In other cases, the reporting of journalists that published key pieces has been made possible by external funds, for example Michael Kavanagh's for www.bloomberg.com/news/features/2016-12-15/with-his-family-fortune-at-stake-congo-president-kabila-digs-in

Undertake or commission research on financers' and insurers' attitudes towards certifications and due diligence as well as the potential uses of these in their business operations and how to align them with responsible sourcing.

Undertake or commission research on responsible sourcing risks affecting the minerals and metals listed in the 2017 list of Critical Raw Materials for the EU.

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8. Annexes

8.1. Blockchain and responsible mineral sourcing (GIZ)