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Sustainability Schemes for Mineral Resources: A Comparative Overview

Impressum

- Editor:** Bundesanstalt für Geowissenschaften und Rohstoffe
(Federal Institute for Geosciences and Natural Resources)
Stilleweg 2
30655 Hannover
(Federal Institute for Geosciences and Natural Resources)
- Funded by:** The underlying research project NamiRo is funded by the German Federal Ministry of Education and Research (BMBF) within the funding priority Social-Ecological Research (SÖF) and the funding programme Sustainable Economy (Nachhaltiges Wirtschaften).
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Stilleweg 2
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- Date:** March 2017 (revised version)
- ISBN:** 978-3-943566-94-9 (PDF)
- Photographs:** © Bundesanstalt für Geowissenschaften und Rohstoffe
Left: Heap leach facility for gold processing using cyanide (Peru)
Middle: Minerals containing gold ore from artisanal small-scale mining (Colombia)
Right: Water basin of a recirculation circuit in artisanal small-scale mining (Colombia)
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Sustainability Schemes for Mineral Resources: A Comparative Overview

By Karoline Kickler, Dr. Gudrun Franken

March 2017 (revised version)



Acknowledgements

The project NamiRo (Sustainably produced mineral resources) as financed by the German Federal Ministry of Education and Research (BMBF) (grant no. 01UT1404, 01/2015 until 12/2017). It is part of the BMBF programme Sustainable Economy (Nachhaltiges Wirtschaften) under the funding priority Social-Ecological Research (SÖF).

We sincerely thank all German stakeholders from the mining and metal industry, manufacturing sector, governmental institutions and non-governmental organizations who took part in the project's workshops in 2015 and 2016 based in Hannover and Kassel and especially the NamiRo advisory board (see Annex II). Their thoughts and comments provided on various issues of sustainability schemes for mineral resources informed the approaches used in this report.

Furthermore, we direct our special thanks to the schemes' representatives for their cooperation and provision of clarifications, corrections and amendments on the profiles developed based on publicly available information. We hope this study provides input especially to following-up harmonization projects and working groups for further use and development. Schemes' responsible organizations that gave feedback on their profiles are the following:

- Alliance for Responsible Mining (ARM)
- Aluminum Stewardship Initiative (ASI)
- Bettercoal
- BGR's Technical Cooperation project with ICGLR¹
- Conflict-Free Sourcing Initiative (CFSI)
- Fair Stone e. V.
- Global Reporting Initiative (GRI)
- Initiative for Responsible Mining Assurance (IRMA)
- International Cyanide Management Institute (ICMI)
- International Finance Corporation (IFC)
- London Bullion Market Association (LBMA)
- Mining Association of Canada (MAC)
- Responsible Jewellery Council (RJC)
- World Gold Council (WGC)
- XertifiX e. V.

We also sincerely thank Mara Iris Lönartz for her help on the assessment of sustainability issues of various mining schemes during her time as an intern at the BGR.

¹ The scheme profile for ICGLR's RCM and CTC as adapted in the DR Congo was reviewed by Philip Schütte from BGR's Technical Cooperation project with ICGLR

Abbreviations and Acronyms

3T	Tin, tantalum, tungsten
3TG	Tin, tantalum, tungsten and gold
ASSF	Australian Steel Stewardship Forum
ARM	Alliance for Responsible Mining
ASI	Aluminum Stewardship Initiative
ASM	Artisanal and Small-Scale Mining
BGR	Bundesanstalt für Geowissenschaften und Rohstoffe (Federal Institute for Geosciences and Natural Resources)
BMBF	Bundesministerium für Bildung und Forschung (Federal Ministry of Education and Research)
BMZ	Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung (Federal Ministry for Economic Cooperation and Development)
CFSP	Conflict Free Smelter Program
CTC	Certified Trading Chains
CN Code	International Cyanide Management Code (Cyanide Code) For the Manufacture, Transport, and Use of Cyanide in the Production of Gold
EITI	Extractives Industries Transparency Initiative
GRI	Global Reporting Initiative
ICGLR	International Conference on the Great Lakes Region
ICMI	International Cyanide Management Institute
ICMM	International Council on Mining and Metals
IFC	International Finance Corporation
IRMA	Initiative for Responsible Mining Assurance
ISEAL	International Social and Environmental Accreditation and Labelling Alliance
ISO	International Organization for Standardization
ITRI	International Tin Research Institute
iTSCi	ITRI Tin Supply Chain Initiative
LBMA	London Bullion Market Association
LSM	Large-scale Mining
MAC	Mining Association of Canada

NamiRo	Research project “Nachhaltig gewonnene mineralische Rohstoffe” (“Sustainably produced mineral resources”) funded by the BMBF
OECD	Organization for Economic Cooperation and Development
OECD Due Diligence Guidance	OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas
OHS	Occupational Health and Safety
PPA	Public-Private Alliance for Responsible Minerals Trade
RCM	Regional Certification Mechanism
RINR	Regional Initiative against the Illegal Exploitation of Natural Resources
RJC	Responsible Jewellery Council
SDF	Sustainable Development Framework
SH	Stakeholder
TSM	Towards Sustainable Mining
UNEP	United Nations Environmental Program
WGC	World Gold Council

Executive Summary

Society's interest in the **responsible production of mineral resources** is not only growing due to legislative pressure or increasing media reporting on human rights or environmental grievances in association with mining, but also due to responsible products that have been offered by some suppliers in recent times (e. g. mobile phone, jewellery, etc.). Reported incidents of conflict financing or child labour in some parts of the world drive customers to involve ethical aspects into their purchasing decisions. Similarly, companies in the manufacturing supply chain are driven by binding and non-binding expectations on supply chain due diligence manifested by international legislation such as the U.S. Dodd-Frank-Act and the upcoming obligations under the EU Regulation on Conflict Minerals or by guidelines such as the OECD Due Diligence Guidance for Responsible Supply Chains. Moreover, mining companies are increasingly taking efforts to assure good practices of production, participate in certifications and assurance programs and communicate their efforts to the market.

Numerous sustainability schemes were created to address selected social, environmental and economic grievances. Requirements, however, differ largely between schemes. Furthermore, schemes also use different ways of implementation, for instance, by varying approaches to assurance, capacity building and impact reporting. This scheme diversification has two sides. On the one hand side it allows to develop tailor-made solutions for specific problems and targeted stakeholders. On the other side, it currently generates to some extent information overload, disorientation and skepticism among stakeholders and likely undermines recognition and further uptake of sustainability schemes in the market. This has led to efforts stimulated by different stakeholders to compare and harmonize schemes where considered reasonable. This will not circumvent tailor-made solutions but will restrict differences to areas in which they have an added value. Harmonized schemes could be more attractive to stakeholders as costs of implementing them are lower.

To inform stakeholders and to support the harmonization efforts already going on in the sector, this report provides a **comprehensive overview of nineteen sustainability schemes** from the mining and metal sector. Selection criteria for the schemes included current dissemination, stakeholder participation and commodity focus, sustainability issues, target countries and supply chain tiers involved. We analyzed the schemes' various objectives and scopes, their respective supply chain coverage and differences in standard catalogues and requirements. We outline drivers for diversification and recommendations for harmonization. Furthermore, in-depth scheme profiles provide structured details on their characteristics such as standard-setting, type of conformity assessments, auditor status and frequency of assessments, grievance mechanisms and transparency on company performance. The comparative analysis of selected schemes was based on a desk research analysis using publicly available information, mainly from the schemes' websites. In addition, the profiles were sent to the respective organizations and most organizations took the opportunity to review their profile.

Interestingly, the analyzed schemes are mostly set up as non-profit organizations independent of the initiators, which are either associations, companies from the supply chain, financial institutions, multi-stakeholder corporations or governmental bodies. Depending on the founders' objectives different **commodities** are addressed: Schemes addressing mining are mostly not commodity specific (IFC, GRI, IRMA, ICMM, MAC), even though there are two mining schemes for gold (Cyanide Code and WGC). In contrast, schemes that cover the supply chain are always specific for selected commodities. For instance, tin, tantalum, tungsten and gold (the "so-called conflict minerals") are addressed by six schemes (CFSP, iTSCI, RCM, LBMA, WGC, CTC). Gold is particularly addressed by Fairmined, Fairtrade and RJC, partly in association with other valuable mineral resources like platinum and silver. Diamonds (RJC), aluminum (ASI), coal (Bettercoal) and natural stone (XertifiX, Fair Stone) are commodities addressed by one or two schemes when regarding our selection of schemes.

A look at the **coverage of the supply** chain indicated that the majority of schemes target the mining and processing stage (ICMM, GRI, IFC, MAC, IRMA, WGC, Cyanide Code) or the entire supply chain (Fairmined, Fairtrade, XertifiX, Fair Stone, RJC, ASI, Bettercoal). Some schemes only cover the upstream part of the supply chain (iTSCi, RCM, CTC) or the smelter and refinery level (CFSP, LBMA) due to their focus on conflict minerals. Five out of seven schemes for the entire supply chain also provide a product label (or several labels) at the consumer level (Fairtrade, Fairmined, RJC, Fair Stone, XertifiX) and address artisanal and small-scale mining (ASM), large-scale mining (LSM) or all company scales.

A specific approach to traceability of material from mine to retail is the so-called “**closed pipe**” **supply chain** used by some schemes and companies. It requires certified material to be either physically separated throughout the entire supply chain or mass-balanced from smelter level onwards. All actors in the supply chain are known and partly suppliers and mineral quantities produced even are pre-determined through trade contracts. This greater control and transparency of the supply chain and minerals’ origins provides incentives for mining companies such as long-term partnerships, better contracting or pricing conditions which can complement traditional assurance mechanisms for ensuring compliance. Long-term cooperation through a scheme can take place directly between a buyer and supplier(s) based on existing trade relations (e. g. Fair Stone) or rather on the level of groups of buyers and suppliers (e. g. Bettercoal, Fairmined). Schemes currently use various traceability systems, assurance mechanisms and incentives to ensure compliance with their standard requirements. Use of existing research outcomes on effective incentive systems (e. g. principal-agent theory) and further mining specific investigations could catalyze schemes’ process of finding suitable leverages and tools for fostering compliance beside classical audit mechanisms.

Our sample of schemes suggests that currently there are far more sustainability schemes addressing **LSM** (53 %) than **ASM** (16 %) or all company scales (31 %). Even if ASM generates only a very small part of the global mineral production it can be stated that ASM is a relatively important target of sustainability schemes in mining which is due to the high number of workers and known grievances in relation to child labour or mercury use, for instance. Schemes for ASM are restricted to high value minerals and metals which can be mined with low mechanization and investment. While LSM is largely represented by mining schemes and entire supply chain schemes, ASM is only addressed through (upstream or entire) supply chain schemes due to its need for support by the downstream supply chain (see “closed pipe”). For further harmonization of ASM and LSM schemes, there is a need for a common definition of ASM drawing back on existing concepts, like level of mechanization, investment and production.

Schemes for all **company scale**, i. e. 3TG and natural stone, define minimum requirements to be implemented regardless of company size and capacity. This way a scheme can be rolled out more broadly but with less effect on performance of large companies. In contrast, LSM or ASM schemes can adapt their requirements to the specific target group and therefore may be more effective in impacting companies’ performances. Medium sized companies are not specifically addressed through any “tailored” schemes with individual requirements and currently seem to take part in LSM schemes as a minority (e. g. RJC) or in schemes that address all company scales (e. g. in natural stone schemes). It remains to be discussed if medium sized companies should be more effectively integrated into sustainability schemes and which are the reasons for having been omitted so far. Moreover, there are several ways of better integration, e. g. either by individual schemes, more adaptable ASM or LSM schemes or a broad incremental standard system that integrates medium sized companies next to other company scales through increasing requirements.

We have observed **incremental standard catalogues** at one third of schemes addressing mining which motivates companies of various sizes and sustainability performances to stepwise improve their practices and comply with a growing number of mandatory requirements each year (Fairmined, Fairtrade, Fair Stone, XertifiX) or to improve on a voluntary basis with an individual pace (MAC, GRI). Moreover, we noticed that ASM companies may grow out of ASM schemes through production improvements but may still need scheme participation and that there might be a need to address medium sized companies more directly.

Hence, it needs to be clarified if there are aspects of sustainability that well performing ASM companies and medium sized companies may still want to demonstrate or foster through a scheme. Either one overarching tiered system or several smaller schemes allowing ongoing participation could be used to integrate various company scales into a modular standard system. In agriculture, there are already modular standards in use that define requirements for various commodities (e. g. fish, vegetable and fruit). If this concept would be transferred to mineral schemes, this would result in a holistic standard with information which requirements apply to the various mineral resources, mine types and supply chain tiers, for instance. Such a standard catalogue would allow schemes to make reference to a common reference standard and adapt it to their individual scope and area of application by choosing a number of given requirements without the risk of lacking comparability among schemes in the end. To avoid standard diversification through differing modular application, it is conceivable that a number of standard types are jointly defined for certain applications and mutually accepted. This does not necessarily mean to reduce the number of schemes, quite the contrary, there is potential for sustainability improvements in most mining sectors and countries which demands for concerted effort. It would, however, reduce costs for companies active in more than one scheme and might reduce implementation barriers.

Requirements of sustainability schemes upon the same issue may vary according to the applied **management approach and practices**. It would be helpful if schemes could align their management practices with existing environmental or safety management standards, such as ISO 14001 or OHSAS 18001, or develop a mining-specific list of management steps. Moreover, we classified four different types of 'requirement groups' for companies: Self-commitment and reporting requirements (GRI, ICMM, MAC), management requirements beyond self-commitment and reporting with mandatory implementation of further mitigation measures (Fairmined, Fairtrade, CTC, IRMA, IFC, RJC, Fair Stone, XertifiX, Bettercoal, ASI, Cyanide Code), conflict minerals-specific requirements (WGC, LBMA, CFSP, iTSCi, RCM) and traceability requirements (schemes spanning several supply chain tiers). We indicated which requirement types are posed by the schemes at the various supply chain tiers. ASI, RJC and XertifiX partly demand compliance with sustainability requirements, such as human rights, also along the supply chain whereas other companies only address mining and sometimes exploration with sustainability and the supply chain with traceability or due diligence requirements. For more harmonization a discussion is also needed to agree on the degree of sustainability required along the supply chain or to define several ambition levels. International guidance demands that internationally recognized human rights need to be respected by businesses regardless of their size, sector and operational context, however schemes are challenged to control compliance along the supply chain despite high validation costs.

Since **commodity-unspecific schemes** have already been created for mining the question arises if this is possible and desirable for the entire supply chain, too. Several existing schemes already integrate up to four commodities into one scheme and various stages of the supply chain (RJC, RCM, CFSP, CTC, Fairmined, Fairtrade). More commodities in one scheme may demand a more complex standard catalogue with mineral specific requirements or separate standard documents for each mineral. Existing schemes in mining or agriculture show how a standard document is well structured to include several commodities. However, scheme diversification currently seems more triggered by the respective industry sectors and their interest to develop a standard addressing their needs and objectives. Hence, diversification also seems to be an important factor for acceptance among mining actors. A tradeoff between diversification of tailored and accepted standards and simplification of the standard landscape would be to develop a common reference standard which then still can be utilized and implemented individually by the various industry associations or schemes, if desired. This, however, would require dialogues between various industries as a major prerequisite for developing a joint resource-unspecific standard for the entire mineral supply chain. Further obstacles might be the considerable standard-setting process integrating a multitude of commodities, supply chain tiers and thus stakeholders. Another constraint might be the cost of extensive standard-setting. However, complexity and cost of standard-setting may be reduced by using existing standards for the intended scopes (e. g. IRMA or IFC for industrial mining according to best practices, CFSP for smelters) and integrating them into a commodity-unspecific supply chain standard. Despite all constraints, an 'all-mineral commodities' supply chain standard has the potential to reduce the negative

effects of standard diversification among supply chain oriented schemes while allowing for individual implementation and control through commodity sectors.

In order to make schemes' mining standards comparable we developed a **consolidated framework** of sustainability issues on the basis of the analyzed schemes. Since there is no common approach of structuring sustainability issues with respect to issues and sub-issues, we developed an overall hierarchy. In a bottom-up approach 86 mining-relevant sustainability sub-issues were identified and grouped into fourteen sustainability issues and these into five overarching categories which were inspired by ISO 26000 and amendments proposed in the NamiRo workshops. We took into account frequent issues (e. g. forced labour, personal protective equipment, internationally protected areas), as well as rather specific issues which might be of interest to certain stakeholders (e. g. offshore mining, ecosystem services, mine dewatering). Moreover, we underlined issues about local or national value added (e. g. local procurement) and business ethics (e. g. bribery) to better integrate the socio-economic dimension. The resulting framework may help schemes to find a common structuring of sustainability aspects and support current discussions on harmonization of standard requirements. Companies and other stakeholders can use the framework and definition tables to better get to know mineral schemes' issue focus. For example, IRMA and Bettercoal are the broadest schemes by covering the maximum of sub-issues (more than 60 sub-issues). However, it has to be noted that a broad range of issues does not necessarily relate to the comprehensiveness of requirements or implementation mechanisms.

We then assessed the **schemes' comprehensiveness** with respect to their addressed sub-issues in the consolidated framework. The extent in requirements per sub-issue was estimated by using "text length" as a proxy despite potential differences in writing style or chosen degree of detail. A scoring scale with five classes was used to illustrate the results. It was also noted where external documents were referenced for further guidance. In fact, even a more detailed analysis would give no further insight whether theoretical requirements from standards (or e. g. "codes" and "programs") are transformed into action and impact on the ground. Schemes themselves only start drafting impact and monitoring systems to evaluate their influence on company performance or sustainability in general. In future, harmonization options should, apart from standard setting, also address operationalization through more uniform auditor guidelines and impact measuring systems.

With respect to **issues represented in mineral schemes**, it becomes obvious that most sub-issues in the category "human and workers' rights" and the issue "basic community rights" are widely integrated across schemes and references are noted for most of the sub-issues. This is most likely due to the many international guidelines existing on human rights. In contrast, for the issue "value added" for communities and states there is no referencing except for tax payments transparency (EITI) and support of nearby ASM which raises the question if further guidance documents are available or needed in order to demonstrate important aspects of economic benefits from mining. Concerning the environmental categories "use of natural resources" and "emissions and land reclamation" there are several issues with hardly any referencing of external documents: energy use, material use, water use and extraction, closure and land rehabilitation. Overall, many sub-issues in the fields of environment, social welfare, value added and governance are not complemented by external reference documents. Future research could investigate if there is a lack of guidelines for the stated issues.

All in all, we pointed out several options and steps that could help to harmonize existing schemes or to think about when creating new ones. We are aware of the fact that the ideal world of one referencing system is daring, however, a development towards a common tiered and modular standard that can be adapted to various conditions and still ensures comparability seems to be a valuable long-term goal to be pursued. Even with an already considerable number of implementing schemes harmonization of standards, improved incentive and assurance mechanisms and consistent transparency on schemes' outcomes and impacts could support alignment and recognition of schemes. Potential benefits associated with harmonization in the mentioned areas, are enhanced understanding, credibility and uptake of sustainability schemes by the market and other stakeholders.

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1 Introduction

Mineral resources are globally traded according to their material quality while information on their production and processing conditions are generally not communicated in the supply chain. Companies producing with high environmental and social standards may therefore face a competitive disadvantage due to the extra costs they are bearing and their achievements are often not valued by the market. However, manufacturers as well as end-customers are requesting more and more information on sustainability aspects of production. Also investors are developing sustainable investment options. Thus, there is an overall interest of actors in the supply chain to make information on environmental and social performance in mineral production transparent.

Sustainability schemes for production of agricultural commodities are already well established in the market, for mining and minerals they have been developed in recent years for several commodities. There are schemes addressing only the mining and processing level or schemes focusing further parts of the supply chain. Additionally to the supply chain scope, there are many more differences in schemes' objectives, for instance, by particular addressing small-scale or large-scale mining, by the mineral commodities or sustainability issues addressed, in terms of aspiration (minimum or best practice requirements) and with regard to the targeted geographic region. To cut a long story short: Sustainability schemes are simply as diverse as their founders' objectives and chosen approaches.

This diversity of sustainability schemes in mining, however, is outgrowing stakeholders' capacity to study the numerous differences between various schemes. Therefore, this report aims at providing a comprehensive overview of the current landscape of voluntary schemes in mining and the mineral supply chain. This report was compiled within the research project "NamiRo: Responsibly produced mineral resources" under the funding program "Sustainable Economies" of the German Federal Ministry of Education and Research (BMBF). The project's objective is to develop recommendations for a widely accepted standard or certification system for responsibly produced minerals based on the experiences with existing sustainability schemes. The differences of commodity markets also play an

important role for finding appropriate solutions and recommendations. In order to achieve practicality and acceptance of the results among German stakeholders the project is accompanied by a multi-stakeholder process which involves the different viewpoints into the research process.

This report can help customers and policy makers to better understand current sustainability initiatives and certification schemes, but also provides support to mining, processing and trade companies who want to inform themselves on schemes applicable at their businesses. In Europe, for instance, a Regulation on the so-called Conflict Minerals (tin, tantalum, tungsten and gold, i. e. 3TG) will come into effect which will demand certain importing companies to provide reports and assurance on their due diligence practices implemented in relation to sourcing of 3TG from conflict affected regions (European Commission, 2016). With this report companies along the supply chain confronted with new regulatory, supply chain or societal expectations on sustainability, can obtain an overview of schemes' sustainability requirements and organizational features. Moreover, investors are increasingly interested in the information provided by sustainability schemes, their credibility and the robustness of the provided data that partly inform ratings and other financial activities. That's why we also investigated information on schemes' governance and transparency. Our report offers findings from the analysis of nineteen selected sustainability schemes for mineral resources and is structured in three sections:

- A comprehensive overview of the landscape of sustainability schemes along the mineral supply (chapter 2)
- A consolidated framework for sustainability issues in mining and comparison of standard requirements (chapter 3) with subsequent recommendations (chapter 4)
- In-depth tabular scheme profiles with information on schemes' objectives, implementation status, standard-setting, requirements, assurance process, transparency on results, etc. (Annex I)

2 Overview of Sustainability Schemes for Mining and Metals

2.1 Analytical Approach

In order to generate an overview of sustainability schemes for mining and metals a desk research analysis on selected schemes was performed, including the finalization of in-depth scheme profiles. Then we described and compared schemes' scope with regard to various aspects, such as commodity focus, supply chain coverage, mining company scales and type of requirements included.

Nineteen sustainability schemes were selected based on their relevance for the mining and metal businesses based on their current dissemination or recognition by stakeholder participation in the scheme development process. Moreover, the selection aimed at covering a wide range of mineral resources and target implementation countries, different supply chain tier levels and sustainability issues. In the course of this report, figures and graphics will contain the abbreviation of the scheme name (e. g., ITSCI, CFSP, Fairtrade, Fairmined, RCM, CTC, Cyanide (CN) Code, Fair Stone, XertifiX) or the already more widely used acronyms of the administrative body (e. g., GRI, IFC, ICMM, WGC, MAC, IRMA, LBMA, RJC, Bettercoal and ASI) (Table 1).

Various types of organizations that have developed sustainability schemes were identified: finan-

cial institutions (IFC, LBMA), mining and metals associations and institutes (WGC, MAC, ICMM, ITRI, CFSP), individual companies along the supply chain of certain commodities (RJC, Bettercoal, ASI), multi-stakeholder collaborations (IRMA, Cyanide Code, XertifiX, Fair Stone), governments and intergovernmental bodies (CTC in DR Congo, ICGLR's RCM) or other organizations working on sustainability reporting (GRI) or alternative trade (Fairmined, Fairtrade). Many founders then established a non-profit organization to manage and coordinate the scheme. The selected schemes are either not commodity specific, address groups of minerals, such as precious metals (diamonds, gold, platinum) or the so called conflict minerals (tin, tantalum, tungsten and gold) or are tailored to single commodities, such as aluminum, coal or natural stone (Figure 1).

The report's information was gathered by a desk research analysis. The major source of information was the schemes' websites and the certification manuals and further material provided by the schemes, e. g., yearly progress reports, audit summary reports or schemes' impact reports. The scheme profiles in Annex I, which provide further in-depth information, were also sent to the schemes' responsible organizations for feedback in order to add missing or more recent information or clarify certain aspects.

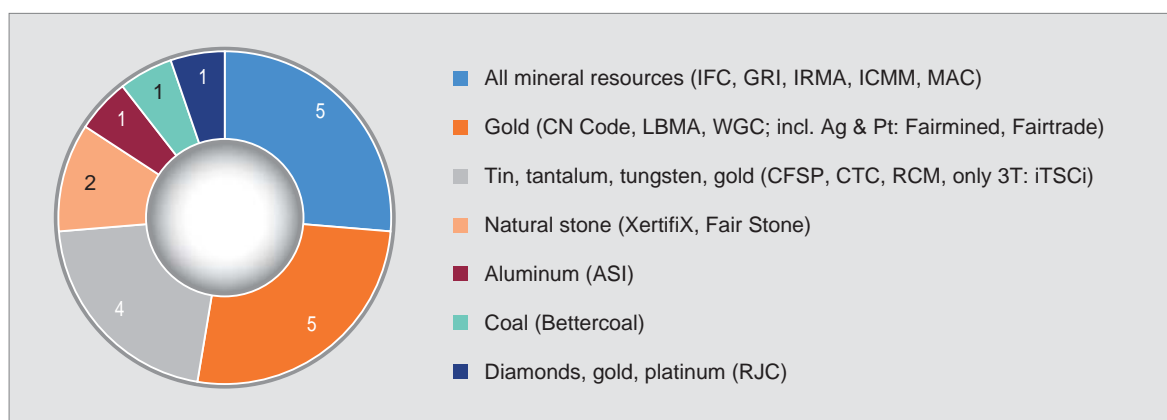


Figure 1: Mineral commodity focus of the nineteen analyzed sustainability schemes for mineral resources (abbreviations acc. to table 1)

Table 1: Mineral commodities addressed by the nineteen sustainability schemes selected for analysis, the schemes' responsible organizations and the abbreviations used for this report.

Mineral Commodity	Sustainability Scheme	Responsible Organization	Abbr.
All mineral resources	Environmental and Social Performance Standards	International Finance Corporation (IFC)	IFC
	Standard for Responsible Mining	Initiative for Responsible Mining Assurance (IRMA)	IRMA
	Towards Sustainable Mining (TSM)	Mining Association of Canada (MAC)	MAC
	Sustainable Development Framework (SDF)	International Council on Mining and Metals (ICMM)	ICMM
	GRI Reporting Principles and Standards Disclosure and Sector Supplement	Global Reporting Initiative (GRI)	GRI
Gold (and partly silver)	International Cyanide Management Code (Cyanide Code) For the Manufacture, Transport, and Use of Cyanide In the Production of Gold and Silver	International Cyanide Management Institute (ICMI)	Cyanide Code
	Conflict Free Gold Standard (WGC)	World Gold Council (WGC)	WGC
	LBMA Responsible Gold Guidance	The London Bullion Market Association (LBMA)	LBMA
Gold and associated silver & platinum	Fairmined Standard for Gold from Artisanal and Small-scale Mining, including Associated Precious Metals	Alliance for Responsible Mining (ARM)	Fairmined
	Fairtrade Standard for Gold and Associated Precious Metals for Artisanal and Small-Scale Mining	Fairtrade Labelling Organizations International e. V. (FLO)	Fairtrade
Gold, tin, Tantalum & tungsten	Conflict-Free Smelter Program (CFSP)	Conflict-Free Sourcing Initiative (CFSI)	CFSP
	Certified Trading Chains (CTC); adapted by the DR Congo	The Ministry of Mines of the Democratic Republic of Congo (DRC)	CTC
Tin, tantalum, tungsten	Regional Certification Mechanism (RCM)	Regional Initiative against Illegal Exploitation of Natural Resources (RINR)	RCM
	ITRI Tin Supply Chain Initiative (iTSCi) membership program agreement summary (only for 3T)	International Tin Research Institute (ITRI)	iTSCi
Diamonds, gold & platinum ²	RJC Code of Practices and RJC Chain-of-Custody Standard	Responsible Jewellery Council (RJC)	RJC
Aluminum	ASI Performance Standard and ASI Chain-of-Custody Standard	Aluminum Stewardship Initiative (ASI)	ASI
Natural stone	Fair Stone – International Standard for the Natural Stone Industry	Fair Stone e. V.	Fair Stone
	XertifiX Criteria	XertifiX e. V.	XertifiX
Coal	Bettercoal Code	Bettercoal	Bettercoal

² Platinum group metals

For example, if no information about a grievance mechanism could be found, we assumed that there was no grievance mechanism provided by the scheme. However, the review of the profiles by the responsible organizations could help us to specify the information, for example by adding the grievance mechanism if this was explicitly noted by the corresponding scheme organization. Fifteen of nineteen responsible organizations gave feedback on their profiles, corresponding to a 79 % feedback rate (Table 2). The comments received were checked and largely considered but if necessary shortened in length. Further information was also gained from third party literature, like company reports and reviews commissioned by NGOs or universities as well as from peer reviewed journals.

Table 2: Sustainability scheme profiles that were reviewed by the respective responsible organization and feedback on the report.

Scheme	Review of Scheme Profile	Feedback on the Report
IFC	Yes	Yes
IRMA	Yes	
MAC	Yes	
ICMM	No	
GRI	Yes	
Cyanide Code	Yes	Yes
WGC	Yes	
LBMA	Yes	
Fairmined	Yes	Yes
Fairtrade	No	
CFSP	Yes	
CTC	Yes	
RCM	Yes ³	
iTSCi	No	
RJC	Yes	Yes
ASI	Yes	Yes
Fair Stone	Yes	
XertifiX	Yes	
Bettercoal	Yes	Yes

³ Reviewed by BGR's Technical Cooperation project with ICGLR

2.2 Requirements along the Mineral Supply Chain

We have analyzed several characteristics of schemes along the supply chains such as which part of the supply chain they address, which commodities are incorporated and what approach they use with regards to management. Also schemes address different company scales and related to that also apply different types of standard catalogues. Also the objective of schemes plays an important role for the design of standards.

Grouping of Mineral Schemes according to Supply Chain Coverage

Fig. 2-2 gives an overview of the supply chain tiers addressed by schemes in general. We indicated if schemes focus on artisanal and small-scale mining (ASM), large-scale mining (LSM) or all company scales (RCM vaguely distinguishes between ASM and LSM) and if they are restricted to or focusing on specific countries. The classification of schemes into ASM, LSM or all company scales are outlined in Annex II and is based on the actual implementation and not the stated theoretical scope because the stated scope is not always confirmed by practice (Table 01).

The supply chain is displayed according to the metal supply chain. Natural stone is already sold in wholesale or retail at the importer level and coal is consumed by the importing utility companies which is neglected in the figure for the sake of simplicity and uniformity. Four supply chain groups can be identified (as illustrated in figure 2):

Group 1: Schemes only for the mining and processing level (7 schemes)

Two out of the seven schemes for mining are commodity-specific (gold). Most of the schemes were developed by mining associations and multi-stakeholder collaborations, next to one financial institution using the standard as a binding obligation for borrowers.

Group 2: Schemes for due diligence practices of smelters and refineries (2 schemes)

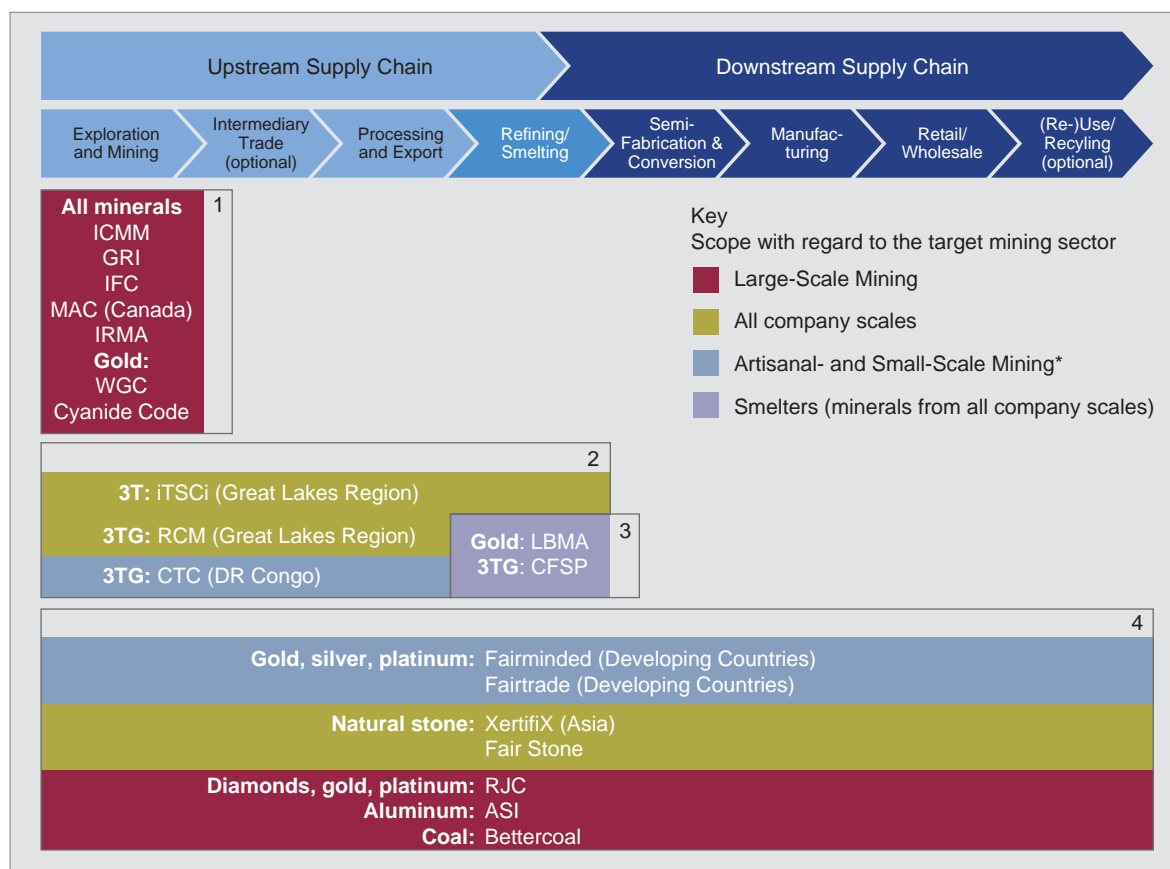


Figure 2: Grouping of sustainability schemes according to supply chain coverage, commodity focus and target region.

1 = exploration and mining (incl. on-site processing); 2 = upstream supply chain until exporter (RCM, CTC) or smelter (iTSCi); 3 = refining or smelting; 4 = full supply chain; * = For the purpose of this classification, we include both manual and semi-mechanized/industrial mining operations as covered by CTC and Fairmined/Fairtrade.

Schemes currently only address 3TG (LBMA, CFSP) which is due to the fact that the schemes have been initiated in response to the US Dodd Frank Act §1502 which required reporting on 3TG sourcing of listed companies.

Group 3: Schemes covering the upstream supply chain (mine to export or smelter) (3 schemes)

Currently applied for 3TGs in line with the OECD Due Diligence Guidance's recommendation of using smelters as given bottlenecks in the supply chain (OECD, 2016, Supplement on Tin, Tantalum and Tungsten). CTC also addresses the upstream supply chain despite going beyond conflict and the OECD Due Diligence Guidance. It focuses on national level and thus addresses mining and traceability up to the point of export.

Group 4: Schemes covering the entire supply chain (7 schemes)

This approach is applied for stone, aluminium, gold, diamonds, silver and platinum. They provide traceability beyond the smelter and track the mineral commodity from the producer to the end consumer (Fair Stone, XertifiX, RJC, Fairmined, Fairtrade, ASI). Their requirements go beyond conflict due diligence and largely chose the closed-pipe approach to encourage long-term cooperation and improvement.

The majority of schemes target the mining and processing stage or the entire supply chain. Five out of seven schemes which cover the entire supply chain also provide a product label at the consumer level (Fairtrade, Fairmined, RJC, Fair Stone, XertifiX). Labels are used by ASM and LSM schemes, as well as by schemes for all company scales.

Table 3: Company Scales and Commodities addressed by sustainability schemes for minerals resources.

Company Scale	% of schemes	No. of schemes	Commodities Addressed	Schemes' names
Smelters	–	2	Gold, 3T	LBMA, CFSI
All mining scales	31 %	4	Gold, 3T or natural stone	iTSCi, RCM ⁴ , Fair Stone, XertifiX,
ASM	16 %	3	Gold, 3T, platinum, silver	Fairmined, Fairtrade, CTC
LSM	53 %	10	Gold, silver, diamonds, platinum, aluminum, coal or schemes for all minerals	RJC, ASI, Bettercoal, Cyanide Code, ICMM, MAC; IFC, IRMA, GRI, WGC

⁴ RCM explicitly addresses ASM and LSM, however, with nearly identical requirements.

Our sample of schemes suggests that currently there are far more sustainability schemes addressing LSM than ASM or all company scales (Figure 2). While seventeen of nineteen schemes contain requirements for the mining and processing level, ten of them can be applied to large-scale mining (53 %). Only three schemes can be applied to small-scale mining (16 %). Four schemes (31 %) are applicable to all mining scales and mostly set the same minimum requirements for all company scales.

Only the RCM distinguishes varying sets of minimum requirements for large-and small-scale mining (red and yellow flags), however, the difference is minimal by adding two requirements for industrial mines: environmental compliance and compliance with regard to community relations. With regard to company size and commodity focus, schemes addressing all company scales are restricted to 3TG or natural stone while schemes addressing particularly ASM are restricted to high value minerals and metals, such as 3TG, platinum and silver, which can be mined with low mechanization and investment. Schemes addressing particularly LSM are including schemes for precious minerals, aluminum, coal and in particular, there are schemes that may apply at all kinds of commodities.

Commodity Specificity of Sustainability Schemes

The reason for scheme diversification has already largely been associated with specific industry associations but also other organizations which often proactively or as reaction to guidelines and

obligations, create new schemes allowing them to exert control on the standard setting and assurance process and the specific issue focus. Finally, the effort of a particular commodity's industry or organization might be less visible in an overarching scheme. Also to gain broader acceptance multi-stakeholder collaborations like IRMA formed to develop a standard reflecting not predominantly industries' interest but also the needs of workers, local communities and NGOs, for example.

Diversification is also often justified by two further drivers: Commodity specific requirements and differing processing and trading routes, i. e. supply chains. The first argument seems weak in the light of our findings: There are several resource-unspecific schemes at mine level proving that resource specific requirements can be well integrated in mining schemes. There is merely no certification scheme for the entire supply chain yet that integrates all kinds of commodities. An example of a new emerging scheme for the entire supply chain is "Responsiblesteel" with the respective organization Steel Stewardship Council which was developed by the Australian Steel Stewardship Forum (ASSF). The ASSF wants to "provide certification of compliance with nominated sustainability criteria for all sectors of the steel supply chain" (ASSF, 2017) and wants to cover the full life cycle of steel. Obviously, the lack of an existing entire supply chain scheme allowing for application at the steel industry, under certain country conditions (Australia) and issue focus (footprint, life cycle assessment, etc.) may be the reason for the creation of another sustainability scheme for the mineral supply chain.

Even if a scheme is easily transferable to another commodity, still this demands that such schemes are open-minded and flexible to integrate other commodity industries and interests. On the contrary, such other industries need to be willing to build on existing schemes and take into account their view. As a result, consensus-finding between various industries is one of the major constraints for developing resource-unspecific schemes covering the entire supply chain. Since IRMA as a resource-unspecific standard for mining was developed by various industries, in principle, this standard could be integrated in a supply chain standard for all commodities and to that further supply chain requirements could be added, e. g. based on existing Chain-of-Custody standards or smelter programs. Furthermore, the question remains to which degree the various supply chain tiers in the mineral supply chain also need to implement sustainability improvements. Current schemes for supply chains either decide to stress improvements at the mine site level or take a more holistic approach and set basic requirements along the entire supply chain (RJC, ASI, Fair Stone). Implementation of such a common supply chain standard could then still be realized by the various industry associations or schemes, if desired.

In fact, there are examples of entire supply chain schemes that integrate several commodities into one scheme. RJC, for instance, integrates three commodities with various processing (diamonds, gold and platinum). RCM, CFSP and CTC address four different commodities (3TG) while Fairmined and Fairtrade include rather similar commodities (silver and platinum associated with gold). Obviously, there are ways of addressing a limited number of commodities in one supply chain scheme even if this demands a more complex system with several requirements or separate standard documents for each mineral. It remains to be shown if it is also possible to create an 'all-commodities'-full supply chain scheme despite the presumably higher complexity and cost of integrating all important actors from all minerals. The standard-setting process of the IRMA's Standard for Responsible Mining impressively illustrates that the development of a comprehensive and legitimate scheme, applicable to all commodities in the mining sector, already demanded, due to several reasons, more than a decade. This puts the feasibility of developing an entire supply chain scheme for all minerals into question.

Management Focus of Sustainability Schemes

Requirements of sustainability schemes upon the same issue may vary according to the applied management approach and practices. We classified four different types of requirements for companies which mining and metals schemes focus on or combine with each other (Figure 3): Self-commitment and reporting requirements, management requirements beyond self-commitment and reporting, conflict minerals-specific requirements and traceability requirements. We indicated which requirement types are posed by the schemes at the various supply chain tiers along mineral supply chains. Eleven out of nineteen schemes demand requirements from mining beyond commitment and reporting with a broad issue focus (IFC, IRMA, ASI, RJC, Fairmined, Fairtrade, CTC, Fair Stone, XertifiX, Bettercoal and Cyanide Code). There is also a scheme that addresses only a small number of sustainability issues but with various management practices beyond commitment and reporting (Cyanide Code). Seven of the eleven broad schemes (ASI, RJC, Fairmined, Fairtrade, CTC, Fair Stone, XertifiX) integrate the subsequent supply chain into the scheme and follow mineral commodities along the supply chain and therefore demand tracking of responsibly produced commodities by applying all relevant aspects of the individual traceability system (Table 4). Components can be physical labelling (e. g. QR-Code, Bar-Code, ID-Label attached to mineral load), documentary traceability (e. g. labelled trade documents), mass balance traceability, use of software and databases, among other.

Five schemes focus on conflict mineral due diligence at various points of the 3TG supply chain and therefore contain conflict minerals-specific management requirements (WGC, iTSCi, RCM, LBMA, CFSP). Those schemes were especially developed to address basic sustainability issues of conflicts minerals and therefore aim at a similar set of management practices and issues applicable according to the Due Diligence Guidance (e. g. commitments and risk mitigation measures against worst human rights abuses and the financing of illegal armed groups, traceability of minerals, transparency of tax payments, reporting, etc.).

Only three schemes concentrate on self-commitments and reporting requirements (GRI, ICMM and MAC). Self-commitments and reporting means

Table 4: Traceability systems applied by sustainability schemes for mineral resources.

Scheme	Description of traceability systems
Fair Stone	Quick Response (QR)-Code label and order number for packing units; documentary traceability; traceability app and software “Tracing Fair Stone”
XertifiX	ID-Label (physical mark with ID-number) for ingots and export boxes of processed stones
ITRI	“Bag & Tag” system for 3T ore sacks with barcode-plastic label for closing ore sacs and log book-keeping at each supply chain tier to document the transport routes from mine site to smelter
RJC	CoC-Transfer Documents support the traceability demanded by the Chain-of-Custody Standard, optional RJC logo for the CoC Material
Fairtrade	Identification mark on all related trade documents; depending on the business model full physical traceability (Fairtrade mark applied) or traceability up to the refiner and mass balancing ⁵ (“Gold Sourcing Program”; no product label)
Fairmined	Fairmined-ID on all related trade documents; depending on the business model full physical traceability (“Labelled”: hallmark applied) or traceability up to first authorized buyer/mass balancing (“Incorporated”, no product label); reports of the supply chain actors go into ARM’s information system
LBMA	“Top-down” approach: for mined gold: estimated weights and assay results, shipping and transportation documents, export and import forms; for recycled gold similar documents; in addition recognition of RJC CoC Transfer Documents or Fairmined/Fairtrade gold which helps refineries to perform LBMA Due Diligence
RCM	“Top-down” approach: traceability systems of choice from exporter back to the mine site (e. g. iTSCi for 3T)
CTC	“Bottom-Up” approach: traceability systems of choice from mine to exporter (e. g. iTSCi for 3T or national documentary mechanism: Manual de tracabilité de Congo)
CFSI	“Top-down” approach: traceability systems of choice from smelter to mine (e. g. iTSCi for 3T); mass balancing within the smelter audit; upstream supply chain due diligence performed by smelter
ASI	Requirements for traceability system under development
WGC	WGC’ Conflict Free Gold Standard is not a supply chain standard but helps subsequent supply chain actors to prove in their due diligence that LSM gold is conflict-free. The mine site location and transport routes are documented and reported in the Conflict-Free Gold Report and risk-based due diligence is conducted on the basis of the OECD Supplement for Gold in the OECD Guidance

⁵ Mass balancing does not require costly physical segregation of certified minerals from uncertified minerals and makes sure that only the produced amount of certified minerals is eventually sold in respective amounts in products. Thus, it is impossible to state in which specific end product the certified mineral is contained but it has the advantage that it reduces costs and allows certified minerals to enter supply chains (Better Cotton Initiative, 2016) despite small production amounts which is especially important for refining and smelting of mineral resources.

companies have to officially commit themselves by publishing company policies about the sustainability principles and objectives of the scheme and report upon achieved performance outcomes mostly by using given indicators. Schemes demanding requirements beyond self-commitment and reporting, demand companies to implement requirements by applying a whole range of management practices for better performance in the selected sustainability issues. Those management practices in mineral schemes are largely reflected by well-known management system standards and comprise actions, such as commitments, risk

assessments, mitigation measures, monitoring, reporting and due diligence, as only a few examples. Due to the various sequence of management practices listed in each scheme, it should be considered to review management practices and align these with already existing environmental or safety management standards (e. g. ISO 14001, SA 18001) for a more uniform structure across standards. Furthermore, it is conceivable that requirements could be depicted in different columns to clearly distinguish between management steps (e. g. mitigation measure against climate change), general objectives (e. g. reduce GHG emissions/

Supply Chain Phases			Upstream Supply Chain				Bottle-neck	Downstream Supply Chain				Use/Re-Use Phase	
Supply Chain Tiers	Exploration	Mining & Processing	Intermediary	Export	Smelting/Refining	(Re) Import ⁶	Semi-Fabrication	Material Conversion	Manufacturing	Wholesale & Retail	Recycling/Smelting		
Commodity	Scheme												
	GRI	r	r	r	r	r	r	r	r	r	r	r	
All minerals	IFC	x	x		x		x	x	x				
	IRMA	x	x										
	MAC		c, r										
	ICMM		c, r										
Aluminum	ASI	x, t	x, t	t	x, t	t	x, t	x, t	t	t	x, t	x, t	
Diamond*	RJC	x, t	x, t	x, t	x, t	x, t	x, t	x, t	x, t	x, t	x, t	t	
	CN Code	x											
Gold	WGC		d										
	LBMA				d							t	
Gold, silver, platinum	Fairmined	x, t	x, t	t	t	t	t	t	t	t	t	t	
	Fairtrade	x, t	x, t	t	t	t	t	t	t	t	t	t	
	RCM	d	d	d	d								
Tin, Tungsten, Tantalum, Gold	CFSP				d	**	**	**	**		**	t	
	iTSCI (only 3T)		d	d	d	**	**	**	**		**		
	CTC	x, t	x, t	t	t								
Natural Stone	Fair Stone	x, t	x, t	-	-	t	-	-	t***	t	-	-	
	XertifX	x, t	x, t	x, t	x, t	t			-	-	-	-	
Coal	Bettercoal	x	x	**	**	**			-	-	-	-	

x Implementation of sustainability requirements beyond commitment and reporting (may include due diligence on conflict risks and human rights violations)
c, r Sustainability commitments in company policies (c); Sustainability reporting requirements (r)
t Requires traceability and tracking of origin of raw material, i.e. mine or secondary source
d Requires supply chain due diligence on conflict risks and human rights violations (may include c, r and t on conflict risks and human rights violations)

Figure 3: Schemes' type of requirements along the mineral (model) supply chain.

* = diamond, gold and platinum; **= Downstream actors can access data on mines/smelters to perform due diligence but are not subject to the scheme; *** = With Fair Stone the manufacturer is the stone mason who is not specifically addressed by XertifX which concentrates on stone trading; - = supply chain tier is not part of the stone or coal supply chain.

⁶ Footnote on ports and terminals which may be engaged in sustainability schemes, e. g. Bettercoal.

increase the energy efficiency) and the explicit measures or explicit statutory limit values proposed (e. g. use of energy efficient pumps, energy consumption value). Supposedly, the more structured and concrete the standards' (management) requirements, the easier is implementation and alignment with other schemes' requirements.

As an example for differing management foci, we can compare MAC with RJC, for instance. While MAC concentrates on reporting on the individual progress in issue-specific management activities, RJC demands implementation of certain management measures across a broad range of issues. In other words, MAC's TSM is a tool that helps to raise companies' management practices above the level of Canadian legal requirements for high-risk mining issues. Through further management interventions MAC hopes to also raise absolute performance in sustainability (e. g. less injuries per annum). On the contrary, RJC's focus is less on communication but rather on implementation of certain objectives and management approaches for a wide range of topics and in various countries (developing and developed countries). One could argue, that reporting-oriented schemes should make sure that they don't lose sight of absolute improvements of sustainability while measuring management activities (e. g. CO₂ emission reduction in developed countries). However, we mention also later in this report that most schemes, independent of the management approach, lack a proper impact monitoring and cannot give evidence for actual improvements on the ground. It needs to be added at this point, that some improvements may be only visible on mid-term or long-term (e. g. water quality and protection of biodiversity) and that schemes should probably be supported by countries' public institutions which are usually responsible for environmental monitoring.

Some main findings concerning the distribution of the four requirement types across the supply chain tiers of various mining schemes are highlighted in the following (Figure 3):

- RJC, ASI and XertifiX are the only schemes with the coverage of the entire supply chain, demanding requirements beyond traceability from upstream or downstream supply chain actors. RJC and ASI are the only schemes demanding basic human rights and other sustainability requirements also from the downstream supply chain. ASI chose to additionally concentrate on sustainability hotspots along the supply chain. For instance, ASI directs special interest to the sustainability performance of smelters (e. g. greenhouse gas emissions at existing and new smelters below eight tons CO₂-equivalents per metric ton aluminum).
- In contrary, Fair Stone, Fairmined, Fairtrade and CTC apply management practices beyond traceability only at the mining and processing stage, not addressing potential non-compliances to human rights or environmental conservation throughout trade and manufacturing due to their chosen scope.
- CFSP, iTSCi and Bettercoal provide information services for downstream companies worldwide about their suppliers' compliance (smelters' material from conflict-free mine sites and responsible coal mines, respectively) but don't include downstream companies directly into the sustainability program and assurance process which is why those companies are solely marked with asterisks in Figure 3.
- GRI is a reporting standard which can be applied by each supply chain tier individually without a connection between suppliers through traceability. Hence, the focus is placed on individual performance improvements rather than collaboration along the supply chain.
- The very beginning and end of metals supply chains are addressed only by a minority of schemes: Mineral exploration is addressed by five out of nineteen schemes (GRI, IFC, IRMA, ASI, RJC) and only LSM schemes, while recycling is integrated by six out of nineteen schemes (GRI, ASI, RJC, LBMA, Fairmined, CFSP). Recycling is mostly addressed by tracing back the origin of secondary material (e. g. proving that metals originate from conflict-free sources).
- Only ASI directs sustainability requirements beyond traceability at the recycling stage ("re-melters"), by demanding treatment and recycling of dross and review of alternatives to land filling, for instance.

- Figure 3 can help to inform future discussions on mutual recognition of similar schemes (see scheme profiles, Annex I).

All these observations show that there are various degrees of supply chain coverage and application of sustainability objectives to the various supply chain tiers. Obviously, some supply chain schemes want to put the sustainability focus on the mine site level, however, it needs to be discussed by stakeholders of the mineral scheme landscape in how far this can be justified. International guidance, like the UN Guiding Principles for Business and Human Rights would suggest to include human rights aspects throughout the whole supply chain (United Nations, 2012). However, the cost of enhanced assurance largely is a problem for all supply chain schemes. This finding underlined how important sound and straight forward assurance systems are, especially for supply chain schemes.

Addressing Various Company Scales in Sustainability Schemes

Another driver of scheme diversification is the difficulty of imposing the same requirements on ASM and LSM unless minimum requirements are applied. As a result, schemes were especially developed for or by one of the two sub-sectors so that the requirements are adjusted to the target group in terms of practicality and feasibility. For instance, mining and trade associations will develop standards accepted by its large-scale industrial member companies, while organizations like Fairtrade try to find requirements implementable and feasible for small-scale mining organizations.

Interestingly, the Alliance for Responsible Mining (ARM) is currently developing an additional Entry Standard for Gold from ASM, indicating that the Fairmined Standard is still too ambitious for the majority of ASM organizations in South America. Furthermore, only few medium-sized companies participate in schemes which in practice are mostly applied by LSM. For instance, only some RJC members are medium-sized gold or platinum mining companies next to a few large-scale diamond companies (RJC auditors take into account business scale when assessing compliance). The Cyanide Code, with its minimum requirements for all company scales, includes gold producers

with an annual gold production from below 25.000 ounces (700 kg) up to 6 million ounces (170.000 kg) which illustrates the great difference in production scale. In more detail, the annual production of signatory gold mines suggests that medium-sized companies depict a minority and that small-sized companies so far most likely don't take part in the scheme.

Varying Definitions of Small-Scale Mining

When collecting data about schemes considering large and small-scale mining one has to be aware that schemes use different definitions for small-scale mining. While the Cyanide Code considers companies producing as little as 25,000 ounces of gold annually (e. g. 700 kg) as "small companies", for Fairmined a small-scale mining organization is characterized by a productivity not exceeding 4 g per day and registered miner at time of entering the system and a maximum of 8 g per day and registered miner through performance improvements (e. g. a maximum of 240 kg at entering and up to 480 kg in case of 300 employers and 200 workdays). The RJC and WGC refer to the OECD definition of ASM which is not marked by distinct productivity levels but rather the lower degree of mechanization and capital investment:

"Formal or informal operations with predominantly simplified forms of exploration, extraction, processing and transportation. ASM is normally low capital intensive and uses high labour intensive technology. ASM can include men and women working on an individual basis as well as those working in family groups, in partnership or as members of cooperatives or other types of legal associations and enterprises involving hundreds or thousands of miners. For example, it is common for work groups of 4–10 individuals, sometimes in family units, to share tasks at one single point of mineral extraction (e. g. excavating one tunnel). At the organizational level, groups of 30–300 miners are common, extracting jointly one mineral deposit (e. g. working in different tunnels), and sometimes sharing processing facilities." (OECD 2016, Supplement on Gold).

Also the International Conference on the Great Lakes Region (ICGLR) defines ASM as "mineral extraction undertaken generally by individuals,

small groups of individuals, or cooperatives working with hand tools or very basic forms of mechanization.” (ICGLR, 2011). Hilson and McQuilken (2014) stated that with the globally growing recognition of ASM several organizations have developed their own dynamic definition of ASM and continue to do so. UNESCO (2011, quoted in Hilson and McQuilken, 2014) state that ‘There is no consensus on what constitutes a small-scale mining operation; neither is the boundary between ASM operations clearly defined. This is partly because definitions vary by country. Despite differences in definition, common attributes stand out: most miners are seriously under-capitalized, rarely operate as proper business enterprises and lack appropriate and modern technology’. In contrast, the natural stone schemes do not define small- and large-scale quarrying at all and designed minimum standards applicable to all kind of production and company sizes. If more mutual recognition (“harmonization”) of standards and frameworks is desired on the issue of ASM organizational scope and production practices, it will be necessary to further align the definitions of ASM from both, ASM and LSM schemes.

If middle-sized companies are generally a minority in LSM schemes and schemes for both sub-sectors, this poses the question if medium-sized companies are actually mostly outside of schemes’ intended scope. If requirements are adapted to the needs of LSM or ASM, we need to further ask, why schemes so far not individually address medium-scale companies. An explanation could be that non-profit and other marketing organizations (Fairmined, Fairtrade) advocate for the struggling ASM sector, while LSM has the capacity to initiate its own programs and to respond to criticism with regards to related negative impacts e. g. environmental degradation and social conflicts. We further know that medium enterprises from the downstream metal supply chain are struggling with increased supply chain management costs and missing financial benefits, for instance, when dealing with conflict minerals due diligence and reporting (BGR, 2015). Furthermore, it remains to be proven if medium sized mining companies likewise ASM lack the capacity to participate in sustainability schemes or if there is just missing incentives, awareness or need for them to do so.

Tiered Standard Catalogues

In addition, to the different sets of requirements for different company sizes, we have also observed the phenomenon of incremental or tiered standard catalogues (e. g., a time-dependent enhancement of the requirements) at 35 % of schemes addressing mining (6 of 17) which allows companies of various sizes or sustainability performances to stepwise improve their practices and comply with a growing number of mandatory requirements each year (Fairmined, Fairtrade, Fair Stone, XertifiX) or to improve on a voluntary basis with an individual pace (MAC, GRI). The use of incremental standard catalogues seem to be a good tradeoff between the two goals of sustainability schemes to on the one hand set ambitious requirements that allow for progress and on the other hand are not too costly or demanding in order to attract participation in the scheme (Steering Committee of the State-of-Knowledge Assessment of Standards and Certification, 2012). A scheme can have a high impact only if it stimulates a large number of companies to improve their performance considerably.

The Committee recommends vaguely that incremental standard systems with increasingly higher standards may be appropriate in some cases. They point out the importance of capacity building mechanisms and strong incentives or requirements for participants under this types of standards in order to ensure continuous improvement at a steady pace and prevent stagnancy and green washing. In order to reach transformative change, it is also considered critical for future standards to interact with government bodies in appropriate ways from the outset to take advantage of their strengths. Moreover, the integration of other sustainability tools is advised with the purpose of stimulating greater impact (The Steering Committee, 2012).

If tiered systems allow companies to learn and develop their capacity and production scale it is conceivable that companies may eventually need to switch from schemes with minimum requirements to schemes with better practices while they improve. Fairmined already experienced the case that a certified mine would not apply at the standard’s scope anymore due to the increased professionalization and production rate per year and worker higher than defined for the ASM scheme (ARM, 2016). One may argue that the mine was

merely ready to leave the supportive ASM scheme and like other industrial mines simply comply with respective country laws. However, it needs to be clarified if one huge tiered system or several schemes allowing ongoing participation would be useful and if there are aspects of sustainability that relatively “good performers” may still want to demonstrate or foster through a scheme.

In fact, tiered standard catalogues for ASM seem more rigorous due to additional mandatory requirements, while LSM or ASM/LSM schemes allow for more flexibility concerning the pace of improvement and the selected improvement measures. This creates the impression that the ASM sector is treated more rigorously. However, one should keep in mind that many ASM organizations often operate on a very basic sometimes minimum standard level, unlike LSM, being more associated with specific human rights violations such as child labour. On the opposite side, LSM companies already mostly comply with the country laws and regulations which however may not always be well designed, enforced or sometimes disregarded (corruption) which may be the reason why sustainability issues are still a major topic in mining, not only in developing countries. Apparently, independent of company scale and minimum requirements or tiered systems, the scheme should be effective in enforcing compliance to their standard.

All the observations give rise to the questions if it is possible and desirable to include a whole range of company scales into a modular standard system, by which one can adapt standard requirements not only to the company scale but also to the specific commodity, supply chain and country conditions. That way, one might avoid one of the reasons for the growing number of specialized and differing sustainability schemes.

Supply and Demand Driven Schemes

Generally, schemes can be more demand driven or more supply driven schemes. For demand driven schemes, those for natural stone and coal are good examples. Relating to Fair Stone and XertifiX, the importer has to proactively sign up, reveal its suppliers and engage them into performance improvements and standard compliance. Also in case of Bettercoal, the buyer applies some pressure to the supplier: The energy entities check the mines'

performances and base their purchase decisions on the coal suppliers' performance results. As an incentive for suppliers, such schemes offer better contracting conditions, training of employees and other support. Even if the mentioned schemes may have been criticized on other aspects, their general approach so far has led to considerable participation of processing and mining companies or quarries, respectively.

The Closed-Pipe Approach

Some full supply chain type schemes establish so-called “closed pipe”-supply chains which means that minerals and metals are physically separated and traceable from mine site to retail (or alternatively mixing of certified and non-certified material at smelter level with a mass balancing approach in the downstream supply chain). Additionally, “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) may be involved to sell the material to a pre-determined customer at a given price. Such closed pipe systems allow for greater control over and transparency of the supply chain (PPA, 2015). Therefore closed-pipe systems are especially relevant for non-transparent and complex supply chains, like for high-value low volume minerals or 3TG from small-scale mining. But the approach is currently also applied to European natural stone import (XertifiX, Fair Stone) which however incorporates only a few intermediaries in the upstream supply chain and ends at the importer who mostly is the wholesaler, too. In this case, the closed-pipe approach is used because a long-term partnership and trustful collaboration between importers and supplier is seen as a key for success by schemes.

The closed-pipe approach has also been implemented for tin or tantalum by downstream companies in pilot projects in DR Congo (e. g. by Philips or Fairphone; PPA, 2015) by using existing upstream schemes and arranging collaborations or contracts with the respective scheme participants and downstream suppliers. Moreover, in case of large-scale coal production and import the supply chain is quite (typo) comprehensive, so that a closed pipe is not needed. Instead, European energy entities designed Bettercoal as a flexible long-term supplier

improvement and information tool enabling the communication and collaboration between the groups of buyers and suppliers.

In contrast, Fairmined or Fairtrade show an independent development of supply and demand, as schemes were not originally initiated and driven by a downstream industry. In this case, certified production is decoupled from direct purchasing decisions, and thus is more susceptible to over- and underproduction. The schemes' price premiums as well as training and support measures makes ASM producers enter the scheme, formalize step-wise according to country law and produce certified gold under increasing sustainability requirements. Sufficient demand is a major factor for the success of such scheme designs which require strong marketing, consumer awareness of sustainability issues and so-called willingness-to-pay for certified products. As such, the ASM schemes and any other certification system will depend highly on the societal conditions in purchasing countries (e. g. education, ethics, distribution of wealth, living expenses, etc.).

Then, there is a group of entire supply chain schemes that follow a third option like RJC. While CoP-certification is mandatory for all RJC members along the supply chain, CoC-certification is voluntary and thus sustainable sourcing of precious metals according to the RJC CoP is rather optional. "CoC Certified businesses may use the logo for general promotional purposes, and on or in conjunction with CoC Material, but must ensure that any such use is not likely to cause confusion with non-CoC Material." (RJC's FAQ on the CoC Standard). Nevertheless, "RJC also works with multi-stakeholder initiatives on responsible sourcing and supply chain due diligence. The RJC's Chain-of-Custody Certification for precious metals supports these initiatives and can be used as a tool to deliver broader Member and stakeholder benefit." (RJC, 2017). In contrast, schemes for natural stone and ASM gold include trade of certified minerals as a central part of the scheme through mandatory requirements. Through its more vague sourcing approach, RJC may be lacking a powerful "purchase leverage" to foster sustainable practices back at mine level (currently 5 CoP-certified mining companies). Nonetheless, RJC impressively engages refiners and downstream jewellery manufacturers (currently more than 160 CoP-certified

members) in the scheme, many of them small and medium sized companies.

Another scheme which is in development for the entire supply chain is the ASI. So far no plans were expressed to introduce a purchase mechanism along the supply chain, a price incentive or a product label. In case a scheme does not offer a product label, the industry's efforts cannot be easily communicated to the market. Such schemes will more likely struggle to hold out the prospect of rising demand and sales as a benefit of scheme participation. Hence, schemes without product labels need to offer other incentives to trigger participation. Interestingly, ASI is strongly supported by the downstream aluminum supply chain and a few mining companies (Rio Tinto Alcan, Hydro) – just like RJC. However, ASI will cover companies producing a high range of everyday products and thus may reach more attention. While aluminum recycling and energy saving seems a strong driver for downstream companies to participate in ASI, it remains to be seen which incentives will eventually be integrated into ASI to attract more mining companies – or if a reputational incentive is sufficient.

2.3 Description of Schemes along Mineral Supply Chains

Schemes Developed for the Mining and Processing Level

The group of the mining and processing-focused schemes (GRI, ICMM, MAC, The Cyanide Code, IFC, IRMA, WGC) depict the "pioneer" sustainability schemes and were developed already between 2002 and 2006. Only the more recent activities of the World Gold Council in 2012 belong to the group of schemes affected by the conflict minerals regulations of the 2010ies.

The cross-sectoral **GRI Guidelines** for sustainability reporting were initiated already as early as 1997 when the Global Reporting Initiative (GRI) was founded. Initially, the US non-profit organization the Coalition for Environmentally Responsible Economies (CERES) wanted to create an accountability mechanism for companies

following the CERES Principles for Responsible Environmental Conduct – with the original target group being investors. However, the established multi-stakeholder Steering Committee demanded to go beyond environmental issues and to create a framework also taking into account social, economic, and governance issues. In 2000, the first version of the GRI Guidelines was published, being the first framework worldwide for comprehensive sustainability reporting which transformed a niche practice to one globally adopted among big enterprises today (GRI, 2016). The Guidelines with its reporting indicators principally aim at not only supporting companies, but also governments, NGOs and other organizations to understand, measure and communicate the critical impact of their business on sustainability issues. Major sustainability risks, key performance indicators, management systems and actions taken are reported on a regular basis. The rationale of GRI is that transparency as the catalyst for change and that public interest should drive organizations' decision making. The target is therefore also to support decision makers in considering aspects of sustainability and thereby create a more sustainable economy. In 2004, a GRI-ICMM working group finished its work upon the sector-specific GRI Mining and Metals Sector Supplement⁷ which added mining-specific reporting indicators to the generic GRI G3 Guidelines. The GRI Guidelines alone do not cover the “key aspects of sustainability performance that are meaningful and relevant to the Mining and Metals sector” (GRI, 2013) and according to GRI should be used by all organizations in the sector. Under G4 GRI reporting, companies have two options for reporting, either “Core” or “Comprehensive”, which basically differ by the amount of indicators reported per material issue (GRI, 2013). However in October 2016, the new “GRI Standards” were released which is a modular standard and that should allow for easier review of single standards. General Disclosures for reporting contextual information, Management Approach for reporting management of material impacts and Topic Specific Standards need to be reported. The EU commission simultaneously develops a non-binding guideline on non-financial reporting for public-interest entities⁸ with more than 500 employees that draws upon the EU Accounting Directive (2013/34/EU) and

Non-Financial Reporting Directive (2014/95/EU) (European Commission, 2016). However, the GRI guideline will stay relevant within the EU because companies will be flexible in the choice of the reporting guideline as long as some core aspects and non-financial Key Performance Indicators are covered. Consequently, companies will probably draw on their already existing GRI reports or other sustainability frameworks (UN Global Compact, OECS Guidelines for Multinational Enterprises, ISO 26000, etc.) and add missing information to comply with the EU reporting obligations (European Commission, 2016).

The **International Council on Mining and Metals (ICMM)** is a CEO-led organization of 23 global mining and metals companies and 34 associations founded to strengthen the industry’s “social license to operate⁹” through commitment to and reporting on sustainable development issues. In more detail, ICMM aims at ensuring society’s trusts and respects based on the industry’s social and environmental performance and the positive contributions to communities and society as a whole. In the mid-late 1990s before ICMM was founded, the industry was facing a crisis where commodity prices had dropped, investors were reluctant, legal restrictions threatened land access and criticism from the civil society was growing. Against this background, the industry-led Global Mining Initiative¹⁰ (GMI), formed in 1999, initiated the foundation of ICMM. GMI was led by the World Business Council for Sustainable Development (WBCSD) who commissioned the International Institute of Environment and Development (IIED) to undertake a 2-year multi-stakeholder consultation process on “Mining, Minerals and Sustainable Development (MMSD)” to discuss the sector’s role in transition towards sustainable development. In response to the identified challenges, ICMM was founded in 2001 out of the preexisting industry organization the International Council on Metals and the Environment (ICME). ICMM’s approach to foster sustainable development was originally named the **Sustainable Development Framework (SDF)**. The SDF demands its current 23 ICMM company

⁷ Under G4, the supplement is now called the “Mining and Metals Sector Disclosures”.

⁸ Stock listed companies, banks, insurance companies and other

⁹ ICMM definition of the social license to operate: the ongoing approval or acceptance of a company’s activities by the local community and other stakeholders. This informal endorsement can be gained and renewed through meaningful dialogue and responsible action.

¹⁰ Nine of the largest mining and metals companies launched the Global Mining Initiative in 1999 to prepare the sector for the 2002 World Summit on Sustainable Development.

members to commit to the ICMM 10 Principles and six Position Statements that complement the principles with further details. In 2004, after developing with GRI the GRI Mining and Metals Sector Supplement, ICMM members also committed to GRI reporting in 2005 (in 2008 also ICMM commits to GRI reporting). Further membership requirements are the independently assured reporting in the Sustainable Development Report on the process and result of identifying material sustainability risks and opportunities, the systems in place to manage these and finally the achieved performance. Therefore, the Sustainability Report together with the GRI Report serve as a means of performance measurement against the ICMM commitments in the environmental, socio-economic and governance area. It is mandatory to report in the “Core” option under G4 beginning with the 2015 reports. Membership moreover demands independent assurance of the identification of material sustainable development risks, implementation of systems to manage those material risks and the performance outcomes.

In 2002, again ICMM became active together with the UN Environmental Program (UNEP) in the field of sustainability schemes by developing the cyanide-focused **International Cyanide Management Code (Cyanide Code)** for the Manufacture, Transport and Use of Cyanide in the Production of Gold as an industry voluntary program for gold mining companies. Funding was provided from the gold mining industry which might explain why this standard until late 2016 hasn't applied to silver mining, despite cyanide also being utilized in silver processing. In 2017, signatory applications from silver mining companies will be accepted by the International Cyanide Management Institute (primary silver mines using cyanide). The Cyanide Code was a direct reaction to the spills and accidents involving cyanide solutions at gold mines such as the January 2000 incident at a Romanian gold mine and therefore targets better management of cyanide, particular at operations with limited experience or in countries without regulatory programs. The Cyanide Code was the first resource specific standard followed by efforts of German stonemasons and importers establishing the certification systems for natural stone.

The Mining Association of Canada (MAC), as a national industry association, also rolled out a sustainability program mandatory for its members to

prevent serious incidents, like spills, at all mining and processing related facilities: **Towards Sustainable Mining (TSM)**. It has been set up as a trust-building tool for local and national stakeholders who often question that mining and processing facilities are managed responsibly. Thus, schemes like the ICMM's Sustainable development Framework (SDF) and TSM are often referred to as initiatives that strive to gain (back) the “social license to operate” especially among regional communities and therefore aim at improving mining's overall image. This became apparent again in 2014, when a tailings pond breach occurred at the Mount Polley mine in British Columbia which is operated by Imperial Metals, being a “young” MAC member for two years at that time. Though no injuries and drinking water degradation occurred, this has led MAC to launch internal working groups in order to improve TSM's tailings management documents. In contrast to ICMM that draws on GRI reporting indicators for checking how commitments are turned into practice, MAC developed its own performance indicators for six core issues of mining, to predominantly measure improvements of management systems. The indicator protocols were subsequently developed until 2012 for six out of eight core issues. A seventh protocol for water is expected in the coming years. (MAC, 2016)

The **IFC Performance Standards** were created in 2006 for private borrowers by the development bank IFC, in order to ensure that financing of mining projects adheres to the concepts of sustainable development. The IFC Performance Standards catalogue, next to the GRI catalogue, were the earliest most comprehensive catalogue of requirements, however, both of them were not mining-specific at that time. In the project approval process, IFC however also applied technical reference documents with examples for Good International Industry Practice (GIIP) from the World Bank Group: “EHS Guidelines for Mining” or “EHS Guidelines for Construction Materials Extraction”. The IFC Performance Standards, however, became a much cited and referenced guidance document among sustainability schemes in mining in relation to hot spot issues of mining, like community and indigenous rights (e.g. resettlement) and biodiversity conversation. The EHS Guidelines developed by consultants on behalf of the IFC with checks from third parties describe best practices, mostly from a North American and Australian perspective though also a European perspective is visible. Cited ref-

erence values often have their origin in national mining laws of these countries. It should be noted that the documents are not entirely binding for the project approval process. Furthermore, IFC is in a dilemma as too high requirements would drive potential borrowers to other banks without any requirements and compromise their business. Moreover, IFC also applies four other EHS Guidelines along the metal supply chain but without providing traceability of products or relating trade partners (EHS Guidelines for Base Metal Smelting and Refining, EHS Guidelines for Foundries, EHS Guidelines for Integrated Steel Mills, EHS Guidelines for Semiconductors and other Electronic Manufacturing).

In the same year as IFC, the **Initiative for Responsible Mining Assurance (IRMA)** begun its already 10-year lasting multi-sector and multi-stakeholder standard-setting process which is expected to lead to a first final version of the **Standard for Responsible Mining** in 2017. The IRMA standard is different from other standards because it is not restricted to certain commodities and its best practice requirements are recognized by both, civil society and large companies. Moreover, IRMA comprises requirements beyond commitment and reporting as opposed to the approaches of industry associations largely concentrating on reporting in that time. The standard was designed to provide a widely accepted “tool for companies, communities and civil society to ensure that mining is free from associations with harmful labor practices, human rights abuses, environmental degradation or other unnecessary negative impacts” (IRMA, 2017). The Standard for Responsible Mining is already said to become the most comprehensive and legitimate catalogue of requirements among all schemes due to its long, intense and democratic stakeholder involvement into the standard-setting process. However, the challenge in the coming years will be to initiate uptake of the Standard not only by companies already performing very well.

The WGC – the global gold mining association – devised its **Conflict-Free Gold Standard** for worldwide-originating conflict-free gold in 2012 as a response to conflict-related legislations and international recommendations: In 2010, the US Dodd Frank Act, Section 1502, declared tin, tantalum, tungsten and gold from the DR Congo and neighboring countries as minerals from conflict regions demanding “conflict-mineral reporting”

of American stock listed companies. In 2010, the Organisation for Economic Co-Operation and Development (OECD) published its “OECD Due Diligence Guidance for Supply Chains of Minerals from Conflict-Affected and High-Risk Areas” with one supplement on gold and one on tin, tantalum and tungsten (OECD). The OECD’s 5-step procedure for due diligence on gold was partly integrated by the WGC standard in order to allow gold mining companies to provide evidence of their conflict-free production within a potential conflict area and to facilitate subsequent supply chain partners’ reporting obligations due to the US Dodd Frank Act or other OECD Guidance related initiatives.

Schemes Developed for Smelter and Refinery Level

In 2011 and 2012, the Conflict-Free Smelter Initiative (CFSI) and the London Bullion Market Association (LBMA) developed their schemes for ensuring that smelters/refineries of 3TG (tin, tungsten and tantalum and gold) do not indirectly contribute to conflict via processing minerals from conflict-affected mining projects as a reaction to the already mentioned U.S. Dodd-Frank Wall Street Reform and Consumer Protection Act and the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas, both from 2010. The OECD Guidance recommends downstream companies to identify smelters and refiners in their supply chains, which in return need to provide information about the countries of origin, transport and transit of the processed minerals.

The CFSI was founded in 2008 by members of the Electronic Industry Citizenship Coalition and the Global e-Sustainability Initiative and set up its **Conflict-Free Smelter Program (CFSP)** to inform downstream companies such as electronic goods producers about the origin of “conflict minerals” (3TG) processed by smelters and refineries in their supply chains. The program conducts audits at smelter and refinery level, since this was identified as the choke point of the metals supply chain with the smallest number of companies worldwide. It provides independent assurance of the smelters’ and refineries’ company level management systems for responsible sourcing of minerals by checking compliance with the 2011 CFSP audit protocols. The protocols follow the five-step

framework for risk-based due diligence (OECD Guidance, Annex I; UN Experts report, para. 318). Moreover, CFSI also offers a “Due Diligence Guidance Conflict and Minerals Reporting Template” in order to help downstream companies adopt best practices and publicly report about conflict minerals in their supply chains. The template also helps identifying new smelters and refineries for audits via the CFSP.

In response to the new regulation and guidance, the LBMA developed the **Responsible Gold Guidance** in 2012 to avoid processing of gold relating to conflict, human right abuses, terrorist financing practices and money laundering. It is mandatory for refineries participating at the London Bullion Market as members of the Good Delivery List. The Guidance “consolidates and formalizes already existing high standards of refiners’ due diligence [and] is based on the OECD Due Diligence Guidance as well as Swiss and US KYC, Anti-Money Laundering and Combating Terrorist Financing regulations.”

Schemes Covering the Upstream Supply Chain (African Great Lakes Region)

The Great Lakes region has been afflicted by conflicts and poor economic development for decades. Several initiatives were developed over the years to end ongoing conflict financing through illegal mineral resource trade and related human rights abuses. Taking into account the recommendations of the 2010 OECD Due Diligence Guidance and the US Dodd Frank Act, private and government-led schemes have been developed since 2010 especially for the upstream conflict minerals supply chain (RCM, CTC Congo, iTSCi), which by definition is the DR Congo and its neighboring countries – also named the Great Lakes Region. They all integrate both LSM and ASM, with Certified Trading Chains (CTC) however focusing on feasibility of requirements for ASM in particular.

The generic **Certified Trading Chains (CTC)** approach¹¹ was developed and internationally consulted already in 2007 to 2008 and implemented in a pilot project by the Federal Institute for Geosciences and Natural Resources (BGR) with

Rwandan partners between 2009 and 2011. CTC is a mine-focused system that demands mines to allow traceability systems to track minerals up to the exporter. It mainly serves to improve mine inspection and oversight at national level. In Rwanda, the CTC requirements were adopted officially by including them in the national inspection manual for the implementation of the Regional Certification Mechanism. However, the CTC requirements only are monitored next to the obligatory RCM requirements and not influence the outcome of the certification by the RCM. The Democratic Republic of Congo (DRC) also adapted the CTC certification standard in 2009 and included it in their national certification manual for ores in the tin industry of the DR of Congo. CTC comprises requirements beyond traceability and conflict risk-related aspects by demanding compliance with other social and environmental norms, such as gender issues, fair remuneration, work safety, security, waste management, environmental rehabilitation and community development and engagement. CTC requirements are designed to meet feasibility within an artisanal context and to allow for a continual improvement process of mining organizations towards certain performance targets. National authorities only issue CTC certificates when sufficient performance improvements against the CTC standard are verified by respective independent audits (BGR, 2016).

For that reason the International Conference on the Great Lakes Region (ICGLR) – consisting of 12 core member states in central Africa – adopted the Pact on Security, Stability and Development for the Great Lakes Region in 2006 (effective in 2008) as a legal framework and agenda (ICGLR, 2012). Part of the Pact is the Regional Initiative against the Illegal Exploitation of Natural Resources (RINR) from 2010 that “includes six inter-linked tools that ICGLR member states committed to implement, namely formalization of the ASM sector; a **Regional Mineral Certification Mechanism (RCM)**; the EITI; a database on conflict mineral flows in the region; a whistle blowing mechanism; and the harmonization of relevant national legislation across the region.” (ICGLR, 2016). The RCM’s obligatory part of the standards and procedures focuses on supply chain due diligence and is thus based on the OECD Due Diligence Guidance as well. At the mine site level, the RCM requires compliance to minimum red and yellow flag requirements relating to conflict issues and due diligence based on the

¹¹ The CTC approach provides that countries adapt the CTC standards to the respective national regulatory condition.

OECD Due Diligence Guideline. Additionally, the CTC standards were integrated into RCM as progress criteria, however not for enforcement but for monitoring of production conditions. The RCM was developed by international consultants supported by development partners, adopted by the RINR Steering Committee and endorsed by a regional ministers' summit in late 2011. While the RCM may be implemented by the member states using individual procedures in detail, generally, they need to adhere to the same Standard. Technically, on member state level a national regulation shall "include (1) mine site inspections by the national mining authority; (2) chain of custody tracking (outsourcing allowed); (3) mineral export shipment certification (via a national certification unit working in coordination with (1) and (2)), and (4) data management and exchange with the ICGLR secretariat for all of the above processes." (BGR, 2016). RCM is a top-down mechanism that demands exporters to trace back the origin of minerals through disclosing their suppliers. However, independent verification of national activities is still required so that certification can demonstrate a robust risk assessment of the process. Moreover, it is required that ICGLR member states facilitate an economically sustainable auto-financing mechanism to allow for longer-term operation. (BGR, 2016). In the DRC, where CTC and RCM are implemented still parallel, plans exist for harmonizing both schemes and make mandatory implementation effective, however, challenges remain to adapt both formal and practical procedures (BGR, 2016).

Parallel to the development of the government-led RINR, the private Industrial Tin Research Institute (ITRI) – an association of tin industry companies dating back as far as 1932 – launched its **Tin Supply Chain Initiative (iTSCi)** in 2011 to provide a traceability system for the upstream supply chain of 3T (tin, tantalum and tungsten) minerals in the Great Lakes region. Apart from traceability iTSCi monitors risks related to the red flag criteria as stated in the OECD Due Diligence guidance (e.g. child labour). In contrast to CTC and RCM, ITRI is a traceability systems enhanced through some basic requirements concerning conflict-free production which might complement other schemes by providing a system for traceability, like CTC and RCM, but also CFSP or the LBMA scheme. See Table 4 for the schemes' use of various traceability schemes (BGR, 2016). It is the by far most applied traceability system in the region, other

just recently are emerging (e.g. Better Sourcing Program). iTSCi is a scheme led by the tin and tantalum industry and was implemented together with state actors and civil society in order to institutionalize key areas of supply chain due diligence in the region. Through its close alignment with the CFSP, iTSCi achieved significant relevance for the region's 3T supply chains. To assure traceability, lots with 3T mineral ores are sealed with a barcode marked tag and log-books are kept along the supply chain to note down relevant supply chain information. (BGR, 2016)

Schemes Addressing the Entire Supply Chain

The schemes integrating the entire supply chain from mine site up to retail/wholesale into the certification system focus exclusively on artisanal mining (FMS, FTS) or large-scale mining (RJC, BC, ASI), or consider both sub-sectors by posing only minimum requirements (FS, XF). Four of seven schemes for the entire supply chain provide a product label for use in wholesale or retail (FM, FT, FS, XF) while the other three schemes provide scheme logos for use by the scheme members without product labelling (RJC, BC, ASI under development).

Interestingly, after the Cyanide Code was established first, the next two schemes focusing on specific commodities both came from Germany and targeted child labour and forced labour in **natural stone production** in India and China. The emergence of those natural stone schemes was driven by the changing market situation in the 1990ies when "increasing quantities of granite blocks and gravestones from India entered the German market" (XertifiX, 2016) and large-scale importers increasingly dominated the business with dumping prices. This motivated stone masons from Signum GmbH in the town of Freiburg, Southwest Germany, to explore the potential for the niche market of imported responsibly produced natural stone. They commissioned a child labour expert to investigate on human rights conditions at Indian stone quarries and finally founded **XertifiX e.V.** in 2005 together with the trade union Bauen-Agrar-Umwelt (IG BAU) and others. XertifiX aimed at primarily tackle child and forced labour through minimum social standards and promoted schooling and professional education as a measure for both reha-

bilitation for former child workers and prevention of future child labour. The standard was recently also extended by further social and environmental requirements. The focus, however, remains on the ILO core norms. License contracts between stone importers and XertifiX are used to set the rules and **XertifiX criteria** for importing natural stone under the XertifiX scheme. The importer needs to disclose his suppliers (exporter and related quarries and processing facilities) who in turn need to consent to trainings and regular inspections on-site, announced and unannounced. In 2013, an associated charity was founded to accompany XertifiX's work in India by developing social projects.

The **Fair Stone Standard** was developed shortly after XertifiX in 2007 by WiN=WiN GmbH, a German company, in close cooperation with a German natural stone trader, experts of the International Social Security Association (ISSA) and international work and social rights experts. The project was co-financed by the Federal Ministry for Economic Cooperation and Development (BMZ) in the context of a develoPPP.de-Project. Like XertifiX, the Fair Stone Standard also mainly aims at eliminating child and forced labour and improving workers' health and safety, but primarily at the stone processing level and with a focus on China and Vietnam. Fair Stone has similarities regarding in the whole set up of the scheme and also builds on continuous improvement of working conditions through building a trustful relationship between all involved parties. The Fair Stone scheme is particularly interesting due to its newly introduced internet-based traceability system "Tracing Fair Stone" which allows tailored access via software by Fair Stone suppliers, Fair Stone partners and by public institutions to allow informed procurement decisions. Currently, the Fair Stone Standard is the most comprehensive standard catalogue dealing with the responsible stone production with special attention to safe processing and transport. However, Fair Stone is under pressure because of increasing competition in the stone sector, decreasing demand (e.g. in 2015) and increasing wages in emerging countries. Market dynamics is certainly a central factor influencing schemes' performance and sustainability in general which is however little addressed by sustainability schemes.

In 2006, the first global certification standard for responsible Artisanal and Small-Scale Gold Mining (ASGM) and associated silver and platinum –

Standard Zero – was developed by the Alliance for Responsible Mining (ARM) – a non-profit development organization with several projects – during a multi-stakeholder process in South America in order to enhance contribution of artisanal gold mining to economic development and prevent environmental damage. In 2009, Standard Zero was further developed in partnership with Fairtrade International (FLO) to become the official version 1.0 from 2009. The cooperation of ARM and FLO however ended in 2013 due to differences concerning several aspects of scheme management. The **Fairmined Standard** aims at creating opportunities for artisanal and small-scale miners and their communities: It seeks for promoting progressive organization and formalization of the artisanal and small-scale gold mining sector with implementation of efficient and socially and environmentally responsible mining practices through stakeholder alliances and collaborative work with the downstream supply chain. Through direct trade of importers or jewellery manufacturers with small-scale gold producers, intermediaries are eliminated and prices close to the world market price (e.g. 95 % of LBMA gold price) are paid. Additionally, a premium of about 10 % of the gold price (4000 USD/kg gold at Fairmined) currently has to be paid by the purchaser for development projects at the organizational or community level. The cost of the premium can be divided among customers, for instance. **Fairtrade** derived a similar version of the former joint standard and both schemes exist in parallel and are currently the only ones for gold addressing exclusively artisanal and small-scale mining beyond conflict together with the CTC scheme. The standards of Fairmined and Fairtrade today are still very similar in their requirements and aims, however recent reviews (Fairmined: 2014, Fairtrade: 2013 and 2015) have led to various differences, e.g. concerning the height of the paid price and premium (Fairmined: 4000 USD/kg Gold, Fairtrade 2000 USD/kg Gold), the business models, issues concerning conflict regions, etc. Fairmined is engaged especially in South America (Colombia, Peru, Bolivia, Ecuador) but also in Asia (Mongolia) and West Africa (Senegal and Ghana), whereas Fairtrade – besides Peru – concentrates on bringing organizations into certification in East Africa (Uganda, Kenya and Tanzania).

The **Responsible Jewellery Council (RJC)** was founded in 2005 by fourteen companies and associations from the gold and diamonds jewel-

lery sector – among them, for instance, Rio Tinto, Newmont Mining and BHP Billiton Diamonds. RJC aims at promoting responsible business practices throughout the supply chain from mine to retail for diamonds, gold and platinum group metals (PMG). RJC released its **RJC Code of Practices (CoP) and RJC Chain-of-Custody Standard (CoC)** in 2009 and was developed, analogous to the earlier established Kimberly Certification Process (KP), in response to the blood diamond tragedy mostly between 1990 and 2000 in which three million Africans died (Valerio Jewellery, 2010). RJC today is one of the mining schemes with the highest number of members (2015: 629 commercial members), however there are few mining members (five in 2015) and the majority is from the large-scale sector. The CoC Standard defines requirements for Chain-of-Custody management systems, including requirements for segregation and transfer of eligible materials and traceability along the entire supply chain. The code of practice defines social and environmental requirements for different production levels from mine to retail, like processing, manufacturing or transport/intermediary trade which makes RJC unique. However, the scheme admits in its impact report that there is still violation of standard rules by more than the half of all certified organizations (62 %). The six issues with serious rule violations were health and legal compliance, working hours, occupational safety, money laundry, bribery and business partners. However, the RJC is one of the schemes most active and committed to impact monitoring and measurement due to a range of commissioned reports and the development of specific monitoring indicators. It is a scheme recognizing Fairmined certified gold as eligible material.

Bettercoal (2011) and the Aluminium Stewardship Council (ASI, 2015) are two rather young schemes for sustainable large-scale and exporting coal and aluminum mines. **Bettercoal** and its **Bettercoal Code** were initiated by eight major European energy utilities (Dong Energy (DNK), EDF (FR), Enel (IT), Uniper (D), GDF Suez (FR), RWE (D), Vattenfall (SWE)) and aims at supporting responsible sourcing by the European energy sector through providing coal consumers with information on their purchasing decisions. The comprehensive code sets responsible operating standards for participating exporting coal producers and targets continuous improvement of performance through self- and site assessments and improvement plans

developed jointly with Bettercoal. The initiative addresses producers worldwide. The assessment results so far have not been published. However, the initiative is reviews various aspects of their sourcing program and recently dedicated to more transparency concerning performance outcomes. For the development of the Bettercoal Code from 2011 to 2013, the initiative explicitly used the RJC CoP as a base and used the IFC Performance Standards for further improvements before consulting the draft Code. Requirements are considered as high enough for most mining companies to identify areas of improvement and for those companies meeting all performance criteria Bettercoal demands for continuous improvement. On the long-run Bettercoal seeks alignment with standards already used by coal mining companies but does not state which ones. The Code was finally released in 2013 and is a non-certifiable standard: Mining operators are not allowed to claim publicly certain performance levels based on the conducted Bettercoal Site-Assessments. Bettercoal recently established a multi-stakeholder Technical & Advisory Committee (TAC), and it works with the TAC and Members to review and strengthen the entire assurance framework throughout 2017, to ensure that the implementation of the Code is more transparent and aligned with the Bettercoal system.

The **Aluminium Stewardship Council** was founded in 2015 by fourteen multinational companies from the aluminum value chain¹² and the process for the development of the standards for sustainably produced aluminum takes place since 2012 (the scheme launch is targeted for the end of 2017). ASI aims at fostering greater sustainability and transparency throughout the aluminum industry by defining globally applicable standards for sustainability performance and chain-of-custody for the aluminum value chain. ASI, in its current design, is largely management system – focused and aims at implementation of best practices. The International Union for Conservation of Nature (IUCN) acted as a convener and coordinator in the standard development process. The basic design of ASI standards draws on experience from RJC, comprising a set of two standard catalogues: the Chain-of-Custody Standard (ASI CoC) and the Code of Practices (ASI Performance Standard)

¹² Aleris, Amcor Flexibles, AMAG/Constantia Flexibles, Audi, Ball Corporation, BMW Group, Constellium, Hydro, Jaguar Land Rover, Nespresso, Novelis, Rexam, Rio Tinto Alcan, Tetra Pak

which comprise traceability and due diligence requirements for the aluminum supply chain and sustainability requirements – in the sense of social, environmental and governance ethics – for each supply chain level, respectively. **ASI's Performance Standard V.1** was released in 2014, while the first draft of the **ASI Chain-of-Custody Standard** is expected by the end of 2017. Currently, ASI is developing many of the final documents which are necessary for the standards to become oper-

ational. ASI – as the “youngest” of the schemes – takes advantage of lessons already learned in the field of certification and, for instance, integrates right from the start requirements and indicators for monitoring and evaluation for later impact reporting and aligns them with the design of the 3rd-party assessment and reporting guidelines. Moreover, it draws on a risk-based approach for assurance to save resources on unnecessary audits.

3 Analyzing Sustainability Requirements for Mining

In this chapter we present an overview about the requirements of sustainability schemes for mining which can serve as a base for further issue-wise comparisons of schemes' requirements. In order to compare schemes' issue focus it was necessary to develop a consolidated framework of sustainability issues addressed by the various mining and mineral supply chain schemes despite prevailing heterogeneity among standard catalogues.

3.1 Approach for Identifying and Structuring Sustainability Requirements

Each scheme developed its own structure of sustainability requirements i. e. principles and categories of standards. To develop a comprehensive matrix to be able to compare requirements we analyzed which issues are occurring in comparable categories in most schemes and supplemented this with further specific issues that occur in schemes. Only such issues of the schemes were included in the assessment that address the mining and processing stage. For this analysis we therefore did not include the smelter schemes LBMA and CFSP. Moreover, only "primary documents" which can be seen as standards' core documents were assessed due to time restrictions so that guidance notes, audit guidelines or other supplementary documents were not included (Table 10). Therefore, the assessment might result in a different picture when including also secondary documents or especially when investigating compliance and impact on the ground. All in all, we identified mining-relevant sustainability "sub-issues" in a bottom-up approach and then categorized them according to overarching "issues" and "categories". Sub-issues were determined by identifying issues of importance for the mining and processing level. Importance of issues was estimated based on four approaches:

- By determining issues which appear frequently in sustainability schemes (in four or more schemes as reoccurring paragraphs or aspects?) such as forced labour, personal protective equipment, reduction of emissions, threatened species, internationally protected areas, financial surety for reclamation, environmental and social impact assessment, etc.
- By determining issues which are mentioned rarely in sustainability schemes (in less than four schemes?) but presumably with a novel aspect of sustainability that might be of interest or growing importance, e.g. offshore/alluvial mining, ecosystem services, mine dewatering and pit lakes, bribery, mergers and acquisitions, shareholder value, etc.
- By determining issues which relatively rarely appear in sustainability schemes but with high relevance to stakeholders involved in the multi-stakeholder process of the NamiRo project, e.g., stakeholders wanted to emphasize neglected sustainability issues in the area of societal welfare and value added which was realized by determining sub-issues like "local workforce" or "infrastructure investments".
- Only such sub-issues were taken into-account which were at least mentioned once so that there might be missing issues that haven't been addressed yet by any scheme (e.g. efficient exploitation of mineral deposits, exploration activities for the long-term continuance of the company, removal of glaciers and intervention into the water regime, etc.)

As a result of this approach, the resulting framework is quite comprehensive, as it integrates common issues from current schemes but also more specific issues. For each sub-issue we wrote a description (Annex II, Table 11) by collecting key words from respective scheme sections and screening up to four schemes. The length of single sub-issues (i. e. number of requirements concerning one sub-issue) can vary due to its adjudged importance in existing schemes or due to simply being either a wide-ranging or a limited issue. In a next step, overarching "issues" and "categories" were determined to clearly structure all the identified sub-issues. The classification into five cate-

gories was partly inspired by seven core subjects in ISO 26000 and amended according to the dominant issues reoccurring in the analyzed mining schemes (Table 5). The category “societal welfare” is larger than its counterpart in the ISO 26000 due to the stakeholder feedback from workshops held within the NamiRo project in 2015. It was criticized that mining’s positive contribution to value creation on the local and national level is not well integrated by schemes so far. That’s why the category comprises the two issues “community rights” and “value added” to underline basic community rights on the one hand, such as land rights, stakeholder engagement, medical surveillance and FPIC for indigenous people, and more development-focused value creating measures on the other hand (e.g. payment of national and local taxes and levies and transparency (EITI), hiring local employees, transacting investments in infrastructure, implementing a development plan for community buildup). Moreover, we listed occupational health and safety separately from other human rights and employment conditions (although all three issues are human rights indeed) because many mining schemes give a lot of room to safety measures and instructions with extra chapters. In case of the issue “mine waste and waste water” we merged fluid and solid waste due to the close interference of mining wastes with rain and water bodies. More information on issues and sub-issues can be found in the definitions table (Annex II, Table 11).

3.2 Consolidated Framework of Sustainability Issues for Mining

Overall, 86 mining-relevant sustainability “sub-issues” were identified and grouped below fourteen sustainability issues and five overarching categories of sustainability in mining (Figure 4). As a result, there are two to four issues under each category and two to fourteen sub-issues under each issue. Some stakeholders in the NamiRo workshops (Advisory Board of the NamiRo Project; Annex II) argued that sustainability issues are not evenly distributed across the various sustainability areas (social, ecological and economic), however, there is not yet a common agreement of what is a good classification of sustainability issues within the mining sector in particular.

Because of the great number of sustainability issues and requirements and the various points of view and foci it was challenging to develop a common framework for all schemes addressing mining. For instance, a given sustainability aspect is not limited to one single sub-issue but can be important for several sub-issues, for instance human rights might be important for workers in the area of operation (e.g. no discrimination or sexual harassment) but human rights are also important for communities close to mine sites because secu-

Table 5: Categories for sustainability schemes in mining in relation to the seven core subjects of social responsibility from the ISO 26000.

ISO 26000 Seven Core Subjects of Social Responsibility							
Human rights	Labour practices	Community-involvement & development	The environment		Fair operating practices	Organizational governance	Consumer issues
Identified five categories and fourteen subordinate issues							
1. Human and workers’ rights	2. Societal-welfare	3. Use of-natural resources	4. Emissions and land-reclamation	5. Company governance	–		
Serious human rights abuses	Community rights	Land use & biodiversity	Closure & land rehabilitation	Business practices	–		
Employment conditions	Value added	Water use	Mine wastes & waste water	Management practices	–		
Occupational Health & Safety		Energy use	Air emissions & noise		–		
		Material use			–		

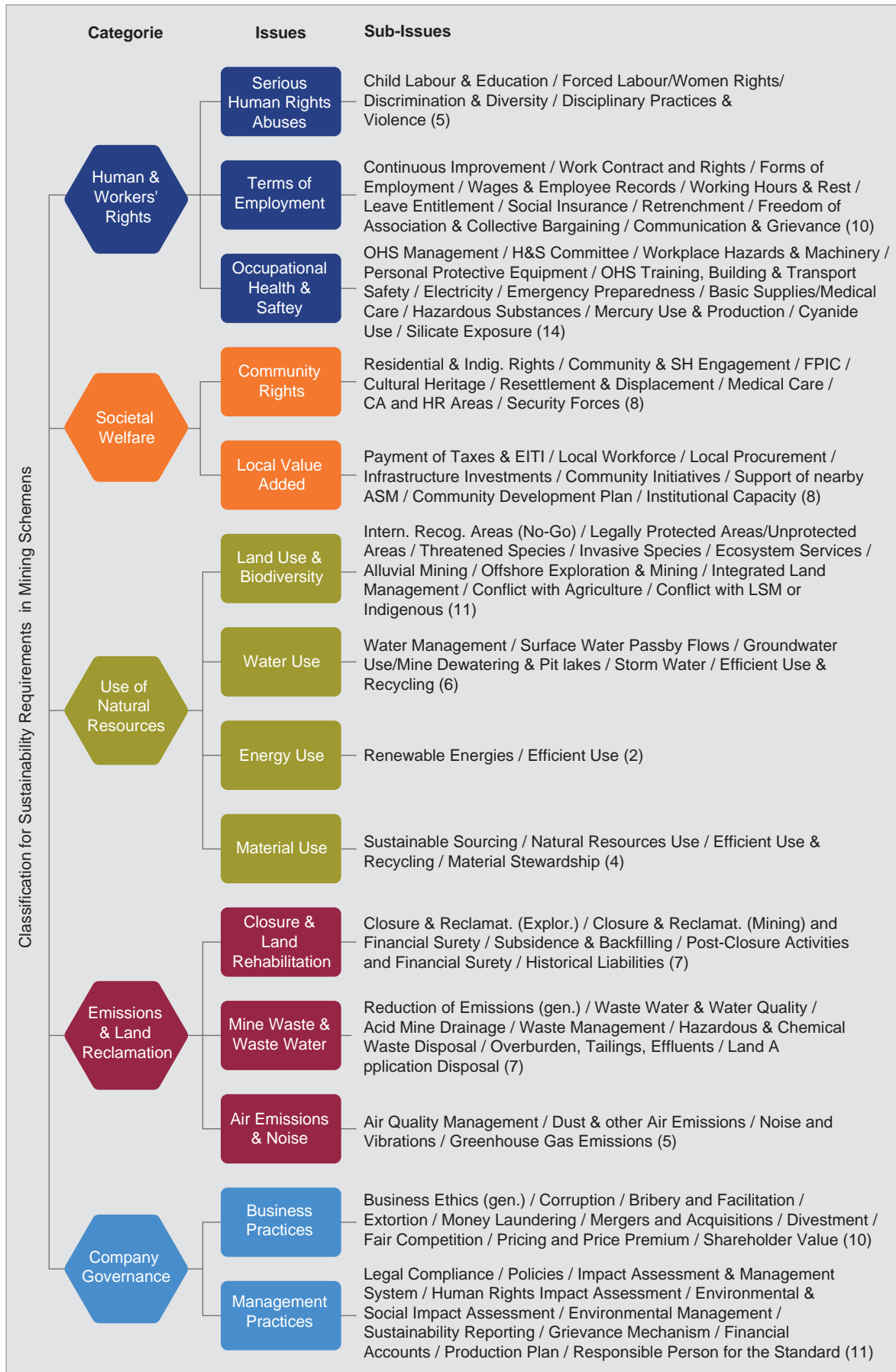


Figure 4: Categories, issues and sub-issues addressed by sustainability schemes.

ity personnel should respect the rights of nearby citizens which in return requires human rights trainings for security forces. Another example is the protection against dust: On the one hand personal protective equipment for workers (occupational health and safety) is required, on the other hand certain techniques and monitoring measurements against dust emissions into the local environment need to be applied. Apparently, there are many overlaps and interlinkages between various sub-issues and requirements.

The overall picture with all sub-issues per category and scheme (Figure 5) shows that none of the schemes addresses all of the 86 identified sub-issues. There are schemes demanding more, less or exclusive aspects in comparison to other schemes. However, schemes mostly have revision processes that could include relevant further issues identified in other schemes into their own standard-setting process (if they intend to cover a broad range of aspects). With regard to our analysis, IRMA and Bettercoal are the broadest schemes by covering the maximum of sub-issues (more than 60 sub-issues). The number of issues addressed however allows no conclusions on detail richness of schemes. For example, a scheme focused on hot spots of risk in industrial mining in developed countries (e.g. MAC in Canada) appar-

ently addresses fewer issues than a scheme specialized on best practice for both developed and undeveloped countries (IRMA) mostly due to the better level of governance and law enforcement in developed countries. Furthermore, GRI is characterized by a broad coverage of sub-issues. However, as explained earlier, only reporting is required. **It is important to understand that schemes having a lower score in the table are not considered to be “weak schemes”** merely because they defined a certain scope that only targets certain issues (e.g. iTSCi, RCM and WGC target due diligence on conflict minerals).

We conclude that schemes, in case of common objectives and similar scopes, should untangle the confusing overlaps and various numbers and orders of listing and merging topics and requirements and come to a common understanding and classification of sustainability to allow for more harmonization and clarity. Therefore, agreements on issue definition and classification but also wording are needed. Our attempt of creating a common framework for insight into the schemes’ various focuses is a first step of getting an idea of the potential for harmonization and aims at inspiring scheme operators, stakeholders and other researchers to bring together the seemingly opposed trends of diversification and harmonization.

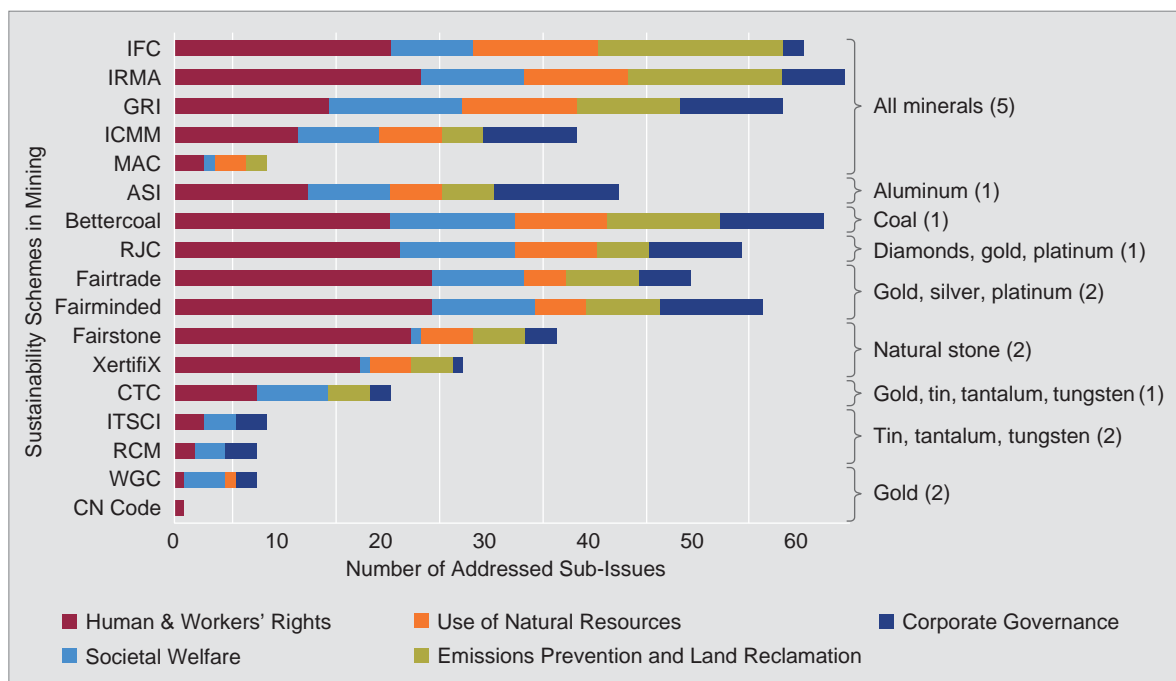


Figure 5: Number of sub-issues addressed by seventeen analyzed sustainability schemes for mining.

3.3 Approach for the Analysis of Sustainability Sub-Issues Addressed by Schemes

Analytical Approach

After having developed a consolidated framework for sustainability requirements in mining schemes the next step was to illustrate the comprehensiveness of each scheme by roughly estimating the extent of requirements provided for each sub-issue by each scheme.

Drawing from the benchmark approach from Solidaridad (2011) where requirements' quality was estimated by rather vague "specificity", we introduce the scale unit "text length, i. e. number of sentences" as a rough reflection of standards' attention to sub-issues despite knowing that the approach neglects the quality of text passages (e. g. redundant or lengthy writing style). Another scientifically-accepted analysis approach from social empiricism (content analysis of text passages) would have been to count various keywords per sub-issue, this, however, would have been a lengthy procedure and would have meant to restrict the interpretation only to the defined key words and would not reflect the whole standard if not each single requirement was turned into a keyword.

To operationalize the item "text length/number of sentences" we distinguished four scoring classes ranging from only a few sentences to up to more than fifteen sentences (Table 6) so that we afterwards can visualize the results easily. The scoring classes were estimated based on reading through the schemes to simplify the analysis. Moreover, enumerations were counted as sentences when containing many details or half and full sentences or summarized in case only few keywords were enlisted. It has to be noted that due to the design of the scoring classes (non-linear), long scheme texts are depicted relatively smaller in the visualizing figures than short text passages. Furthermore, we took into account that some schemes have short texts but make reference to external documents, such as an OECD Guidance or the ILO Conventions, in order to provide further information (sub-issues marked with asterisks).

We eventually chose the simpler "text length"-approach which may seem less scientific and trivial to the reader but in fact the method serves well enough to highlight the key areas of schemes. There is restricted benefit in conducting a very detailed benchmark on the extent of requirements when there is actually an unknown degree of implementation of claimed requirements in practice. Much of the certification discussion today is about impact since it is often not well understood with how much rigour and coherence standard requirements are actually implemented or even

Table 6: Scoring scale used to assess the extent of various sustainability sub-issues listed in Table 7 and respective colour coding.

Score	Colour Code	Definition	Operationalization
0		The issue is not addressed.	No requirements given for the sustainability sub-issue.
1		The issue is addressed in principle.	Requirements given on the sustainability sub-issue comprise 1 to 2 sentences
2		The issue is addressed with some explanations.	Requirements given on the sustainability sub-issue comprise 3 to 5 sentences
3		The issue is addressed with more specifications.	Requirements given on the sustainability sub-issue comprise 5 to 15 sentences
4		The issue is addressed in a very comprehensive manner.	Requirements given on the sustainability sub-issue comprise more than 15 sentences
*	–	External references are mentioned by the scheme as a base or reference for further information and can be used for further instructions or information on a certain sub-issue.	The number of "asterisks" indicates the number of external references mentioned by the scheme (e. g. the OECD Guidance on conflict minerals, ILO conventions, IFC Standards or other programs and guidance).

“translated” into practice and independently verified (see chapter 4). Further guidance documents for scheme implementation or even detailed auditing guidelines often specify how to verify implementation but are not always available. Moreover, schemes themselves even begin to build monitoring and evaluation systems as suggested by organizations such as ISEAL to better understand their own impact.

As a consequence, rather impact than the written requirements might be a more suitable target for further benchmarks of scope and focus of schemes. However, the theoretical scheme documents and requirements should be further studied to come to a common structure and wording of sustainability in mining as a proper base for implementation. For this purpose, an agreement among schemes upon classification of issues and degree of detail would be helpful. Furthermore, future analysis could build scoring classes on the actual prevalence and analyze the heterogeneous management requirements in more detail.

3.4 Sustainability Sub-Issues Addressed by Schemes and Extent in Requirements

General Observations

The scores reflect, as proxies, the extent of standard requirements per sub-issue and scheme. The overview (Table 7) shows which sustainability sub-issues are covered in greater detail within each scheme and which overall foci are chosen by the schemes. Comparisons between different schemes, however, should be done with great care as factors such as management focus, degree of detail and differences in writing style are not reflected yet. Therefore, the specific aspects addressed for a sub-issue can differ from scheme to scheme (e.g. two schemes with the same score may demand different requirements). Despite these limitations of the methodology some interesting observations can be made when analyzing the table with the scores and the summarizing figure (Figure 6):

- The table illustrates the unique scope of each scheme with a focus on certain sub-issues with a varying number of requirements. It also clearly substantiates the great heterogeneity of schemes' topics and requirements and underlines the general challenge for harmonization. There are many issues reoccurring in most schemes (main stream issues) but also issues which are occurring only in a few schemes. These rare issues may be newcomer issues not well known yet, irrelevant to some standards due to demanding requirements or perhaps due to a certain setting.
- Schemes focusing deliberately on conflict financing and human rights or cyanide handling have only few scores due to their specialization. They could be compared in more detail in an extra table to foster harmonization within groups of similar mining schemes. Moreover, such specific schemes could be included in broader sustainability schemes, for instance by using the same requirements.
- IFC has the highest score for extent of requirements per issue in seven out of fourteen issues (OHS, land use and biodiversity, energy use (shared), material use, closure and land rehabilitation, mine wastes and waste water, air emissions and noise) and is the most comprehensive scheme of all schemes, while IRMA is closest to IFC in overall scoring and even addresses slightly more sub-issues than IFC. IFC, shows merely an intermediate score for extent with regard to serious human rights abuses, employment conditions, water use, management practices and a low score in value added and business practices.
- IRMA lists the most extensive requirements with respect to community rights when regarding all fourteen issues, which underlines IRMA's central objective of making mining projects respect local stakeholder demands. IRMA's requirements are more comprehensive than IFC in a range of issues, especially employment conditions, water use, community rights and value added. IRMA also strongly focuses occupational health and safety, mine closure and land rehabilitation, mine waste and waste water, air emissions and noise and management practices.

Human and Workers' Rights

- Generally the sub-issues were easily to identify because of their frequent use and similar naming which indicates that workers' issues and human rights are a well-established area in sustainability schemes in mining and also there are well defined and often cited international standards on this sub-issues, such as the ILO convention. It becomes apparent that some schemes include independently from specific issues a more general requirement concerning the conduct of human rights impact assessment or human rights due diligence (IRMA, Bettercoal, RJC, ASI). Often the UN Guiding Principles on Business and Human Rights are cited which seems to be a major trigger for this sub-issue being included. Yet, it remains to be proven by which means and measures human rights risks in mining or the metal supply chain are best addressed.
- Fairtrade, Fairmined and RJC are most comprehensive with regard to the issue of serious human rights abuses. But Fairtrade and Fairmined also show the highest scores in employment conditions, together with GRI and IRMA.
- With respect to the extent of requirements in Occupational health and safety (OHS), IFC is followed closely by Fair Stone with broad and detailed requirements for both LSM and ASM. This is in contrast to Fair Stone positioning itself as a minimum standard, contrary to the remainder of the requirements which are more basic. IRMA has the third highest score in extent in OHS. MAC covers fewer sub-issues of OHS than ICMM but with more attention to detail. Interestingly other LSM and LSM/ASM schemes (RJC, BC, Fair Stone and XertifiX) contain similar sub-issues like ASM schemes (Fairmined, Fairtrade, CTC). Only ASI among the rather broad schemes, seems to put less emphasis on OHS. CTC as a minimum standard beyond conflict poses less requirements than broader ASM schemes like Fairmined and Fairtrade.
- The Cyanide Code is a scheme focusing solely on cyanide production, transport and handling and therefore only got scores for the sub-issue "Cyanide". However, also other sustainability

issues are mentioned, such as workplace hazards, biodiversity, waste water or mine closure, though always in conjunction with cyanide solution handling. The Code is referenced by IFC, IRMA and RJC and partly even directly included by using the Cyanide Code's requirements and thus helps to build a common understanding and set common requirements and for this issue.

Societal Welfare

- Community rights is a frequently addressed issue with clear and settled sub-issues, while the issue value added contains many unusual issues which occur only rarely in schemes, except for the sub-issue on tax payments, transparency and EITI.
- EITI is often a reference standard for the transparency of paying all applicable taxes and levies on national and regional level for LSM and LSM and ASM schemes. EITI is referenced by 9 out of 19 schemes which shows that there is a certain degree of agreement on payments' transparency created by EITI which may help further harmonization of requirements on payments.
- Only GRI addresses nearly all of the sub-issues of local value-added, however, only as a reporting tool. GRI demands reporting about seven out of eight sub-issues identified (only fostering institutional capacity is not included). Other schemes only address one to five sub-issues. Closest to GRI in coverage is Fairmined which especially demands a community development plan, similar to Fairtrade.

Use of Natural Resources

- Use of natural resources is a category that at first sight seems to be neglected by most schemes apart from GRI, IFC and IRMA.
- IFC, IRMA and GRI are the most comprehensive schemes when it comes to land use and biodiversity, however, other schemes also bring up uncommon sub-issues, such as ecosystem services, alluvial and offshore mining, integrated land management and conflict with

agriculture. Apparently, there is a great potential for mutual informing and learning among schemes.

- Water use with aspects on water extraction is an issue largely covered by IRMA and poorly recognized by all the other schemes. Only ICMM, GRI and IFC and ASI include requirements about general water management practices. Efficient water use and recycling is a more common sub-issue than extraction, but for instance less pronounced in IRMA than in IFC and schemes for coal and natural stone.
- MAC, GRI and IFC reached the same score for energy use. They even include renewable energies but put more emphasis on efficient energy use. Efficient energy use is also included by four other schemes.
- Material use is an issue depicted very heterogeneously across the schemes. While IFC is elaborate on efficient use and recycling and natural resource use, other schemes more generally refer to sustainable sourcing or take up material stewardship.

Emission Prevention and Land Reclamation

- Most schemes seem generally more comprehensive in emission control and land reclamation than in the regulation of the use of land and resources which might be explained by the fact that environmental protection originally began with awareness on pollution control whereas resource consumption has become of interest more recently.
- Concerning the issue, emission control and land reclamation, frequently covered sub-issues are mine closure and reclamation after mining activities including the provided financial surety, overburden, tailings, effluents, other mine waste facilities and waste and waste water management.
- More stringent on the frequent issues appear IFC, IRMA, ICMM and MAC, while ASM schemes are trying to address mine wastes and waste water in particular (and partly more elaborate than LSM schemes) but entirely

neglect air emissions. Regarding air emissions, greenhouse gas emissions are more often regulated than other emissions to air such as dust and noise.

- Post-closure is poorly addressed by all schemes except for IFC and IRMA.

Corporate Governance

- In the field of corporate governance, the picture is as heterogeneous as for issues like value added, land use and biodiversity or material use which indicates that many sub-issues are rare and not yet common in responsible mining schemes, but that there is some interest of getting a grasp of such areas of sustainability.
- Fairtrade, ICMM and RJC incorporated the highest extent of requirements on business practices, while ASI and GRI have the next highest score.
- Business practices relating to corruption are addressed by a range of LSM and ASM schemes. ICMM and ASI additionally focuses on market dynamics of LSM (mergers, acquisitions, divestment, fair competition, shareholder value) and Fairmined and Fairtrade introduce a minimum price and price premium for ASM.
- In general, business practices are an issue even less often addressed than value added – although both issues have economic relevance. This shows that economic benefits and risks of mining are largely out of the scope for schemes so far. Schemes like EITI try to put more emphasis on the economic aspects and may support mining schemes in incorporating the economic dimension of sustainability.
- In terms of management practices, GRI covers nearly all sub-issues while Bettercoal, ASI and RJC cover more than half of the sub-issues. At the same time, GRI is referenced by ICMM, RJC and Bettercoal as guidance for performing sustainability reporting in addition to complying with the respective scheme.
- Moreover, one striking observation is the reoccurrence of management practices in various sub-issues and in general terms, like the impact

assessment and introduction of a management system. For example, there are schemes that demand a Biodiversity Impact Assessments, a Human Rights Impact Assessment, an Environmental and Social Impact Assessment or just generally an Impact Assessment for all company activities and the introduction of a proper management system. This example well explains why we introduced the issue “management practices” to assess such chapters of

schemes which won't fit in the more issue-specific categories and are similar to each other (see “impact assessment and management systems” in “management practices” and successive sub-issues). The assessment table in this report shows the different approaches to impact and risk management and allows no judgement or proof of which approach is most effective.

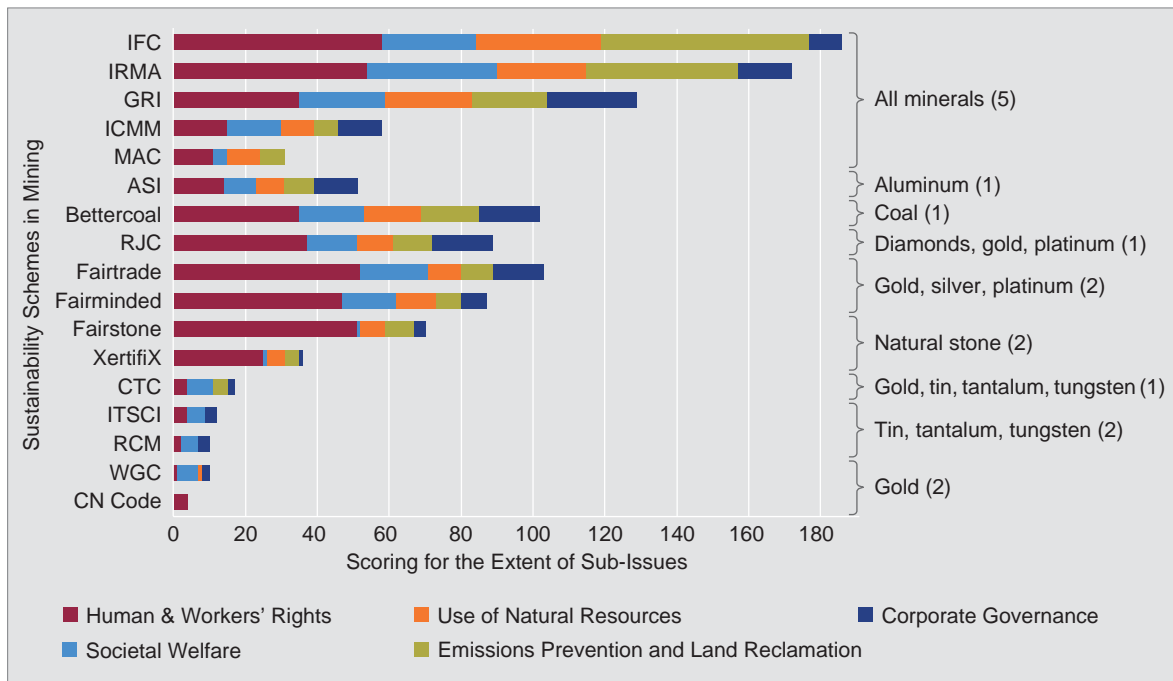


Figure 6: Extent of requirements of sub-issues for the five sustainability categories.

Sustainability Schemes and Certification Standards														No				
Sub-issue	GRI	MAC	ICMM	WGC	IFC	IRMA	ASI	RJC	BC	ARM	FT	CTC	FS	XF	ICMI	RCM	ITSCI	No
Personal protective equip.																		9
OHS training									*									11
Building & transport safety																		7
Electricity																		2
Emergency preparedness	*				*	*		*										12
Basic supplies					*						*							9
Medical care					*****	**					*							10
Hazardous substances					8*													7
• Mercury use & prod.			**			*				*	*							5
• Cyanide use					*	*		*										6
• Silicate exposition																		2
Sub-issue total 14	11	11	9		40	29	4	15	17	19	20		35	10	4			

Sustainability Schemes and Certification Standards																			
Sub-issue	GRI	MAC	ICMM	WGC	IFC	IRMA	ASI	RJC	BC	ARM	FT	CTC	FS	XF	ICMI	RCM	ITSCI	No	
2. Societal Welfare																			
2.1 Community Rights																			
Residential & indig. Rights						*	**		***		**								9
Community & SH engagem.						**													11
FPIC						*		*											8
Cultural heritage						***													7
Resettlement & displacement	*					5*	*	*											7
Medical care						*													6
CA and HR Areas				11*		***			*		6*						*		9
Security forces				7*	**	*****		**	*								*		13
Sub-issue total 8	9	4	8	5	23	29	8	11	14	6	13	3		1		4	4		
2.2 Value added																			
Payment of taxes & EITI	*		*	*		***		*	*			*				*	*		12
Local workforce																			3
Local procurement																			2
Infrastructure investments																			3
Community initiatives																			5
Support of nearby ASM	*																		4
Community develop. plan																			5
Institutional capacity													*						3
Sub-issue total 8	15		7	1	3	7	1	3	4	9	6	4	1			1	1		

Sustainability Schemes and Certification Standards																		
Sub-issue	GRI	MAC	ICMM	WGC	IFC	IRMA	ASI	RJC	BC	ARM	FT	CTC	FS	XF	ICMI	RCM	ITSCI	No
3. Use of Natural Resources																		
3.1 Land Use and Biodiversity																		
Intern. recogn. areas (no-go)	*				****	****												7
Legally protected areas	*				*	*												9
Unprotected areas	*				*	*			*									11
Threatened species									*									5
Invasive species																		3
Ecosystem services	***																	2
Alluvial mining																		2
Offshore exploration/mining																		2
Integrated land management																		1
Conflict with agriculture																		2
Conflict with LSM/indigenous																		1
Sub-issue total 11	11	4	4		17	11	4	7	10	11	9		2					
3.2 Water Use																		
Water management						*												5
Surface water passby flows						*												1
Groundwater use																		1
Mine Dewatering & Pit lakes																		1
Storm water																		1
Efficient use & recycling																		7
Sub-issue total 6	5		3		8	14	1	1	2				2	2				
3.3 Energy Use																		
Renewable energies																		4
Efficient use																		7
Sub-issue total 2	5	5			5			1	2				2	2				

Sustainability Schemes and Certification Standards																			
Sub-issue	GRI	MAC	ICMM	WGC	IFC	IRMA	ASI	RJC	BC	ARM	FT	CTC	FS	XF	ICMI	RCM	ITSCI	No	
3.4 Material Use																			
Sustainable sourcing				1			1												2
Natural resources use					1			1	1										3
Efficient use & recycling					1				1				1	1					5
Material stewardship	**		1				1												3
Sub-issue total 4	3		2	1	5		3	1	2				1	1					

Sustainability Schemes and Certification Standards																		
Sub-issue	GRI	MAC	ICMM	WGC	IFC	IRMA	ASI	RJC	BC	ARM	FT	CTC	FS	XF	ICMI	RCM	ITSCI	No
4. Emissions Prevention and Land Reclamation																		
4.1 Closure and Land Rehabilitation																		
Closure & reformat. (explor.)	*																	3
Closure & reformat. (mining)	**					****												11
• Financial surety						****												6
• Subsidence & backfilling																		5
Post-closure activities																		2
• Financial surety																		2
Historical liabilities																		3
Sub-issue total 7	5		2		23	16		4	4	2	3	2	2	1				
4.2 Mine Wastes and Waste Water																		
Reduction of emissions					*													4
Waste water & water quality						>10*												8
• Acid mine drainage						*			*									6
Waste management																		9
• Hazardous waste																		7
• Overburden, tailings, etc.					*	****			**									11
• Land application disposal																		1
Sub-issue total 7	9	3	4		21	14	5	7	9	5	6	2	4	3				
4.3 Air Emissions and Noise																		
Air quality management					****	****												2
Dust & other air emissions																		5
Noise and vibrations					*	***												4
Greenhouse gas emissions	**					*	*		*									7
Sub-issue total 5	7	4	1		14	12	3	3	3				2					

Sustainability Schemes and Certification Standards																			
Sub-issue	GRI	MAC	ICMM	WGC	IFC	IRMA	ASI	RJC	BC	ARM	FT	CTC	FS	XF	ICMI	RCM	ITSCI	No	
Resp. person for the standard																			
Sub-issue total 11	20		5	2	11	12	7	11	13	4	7	1	3	1		1		1	

¹³ Even if not part of the Performance Standards or EHS Guidelines, IFC assesses the integrity of potential partners by the IFC's Integrity Due Diligence Process in the areas of anticorruption, tax transparency, corporate governance and conflict of interest.

¹⁴ Some of the sub-issues appear as issue-specific requirements within other sub-issues, e.g. compliance, policies, impact assessment and management systems.

¹⁵ While some schemes generally demand an impact assessment and management system for the activities of the company, other schemes may especially ask for (additional or similar) subforms, such as environmental or social/human rights impact assessment and management systems.

conclude, this first brief analysis shows a number of differences between the schemes with some schemes being more extensive in the number of issues covered while others provide a high level of detail for fewer sub-issues. The total score of the extent of requirements divided by the number of covered sub-issues allows to derive a value for an average level of detail per sub-issue which we call in the following average specificity. This simple measure helps to identify differences in a scheme's general approach to addressing sustainability (Table 8).

When interpreting this table one has to keep in mind that specificity will vary between sub-issues within one scheme (as depicted in table XX) – IRMA, IFC, MAC and the Cyanide Code on average provide high specificity on the sub-issues they demand. MAC and the Cyanide Code concentrate only on a few (hot spot) sub-issues whereas IRMA and IFC provide high specificity on numerous sub-issues. GRI, Fairtrade and Fair Stone require an intermediate degree of specificity for their sub-issues while addressing a different number of sub-issues. Interestingly, Bettercoal, Fairmined, RJC, ASI and

ICMM are schemes with relatively high numbers of sub-issues but with a low average specificity.

External References used by Schemes

A key issue for schemes is legitimacy. Consequently, providing external references for the requirements is important for the schemes and shows that a given topic is well settled. The opposite, however, could be also true, if a topic is controversially discussed references could be added to point to the different positions. A list of commonly cited external references for each sub-issue (independent of scheme) can be found in Annex II (Table 12). 44 of 86 sub-issues are not based on, further explained or underlined by an external reference which indicates that those sub-issues so far haven't been much linked to external references by the schemes.

- Most subjects in the category “human and workers' rights” are well known and explained by external references, except for the communication and grievance process for workers, an continuous improvement of working condi-

Table 8: Average specificity of sustainability schemes in mining on the basis of the number of sub-issues addressed and the total score for the extent of requirements.

Schemes	Number of sub-issues addressed	Overall score for the extent of requirements	Average Specificity
IRMA	65	172	2,6 high
Bettercoal	63	102	1,6 low
IFC	60	185	3,1 high
GRI	59	129	2,2 medium
Fairmined	57	87	1,5 low
RJC	55	89	1,6 low
Fairtrade	50	103	2,1 medium
ASI	43	51	1,2 low
ICMM	39	58	1,5 low
Fair Stone	37	70	1,9 medium
XertifX	28	36	1,3 low
CTC	21	17	0,8 low
ITSCI	9	12	1,3 low
MAC	9	31	3,4 high
WGC	8	10	1,3 low
RCM	8	10	1,3 low
Cyanide Code	1	4	4,0 high

tions, violence and disciplinary practices and sub-issues from occupational safety such as the Health and Safety Committee, safe use of electricity and silicate exposure.

- In “societal welfare”, basic community rights are all referenced by the schemes but in the issue “value added” there is no referencing except for payments of taxes and levies (EITI) and the support of nearby ASM. Not only schemes often do not address the value added by mining projects, but they also seem not to be able to draw on existing literature or international guidelines and norms. This raises the question if there is a lack of guidelines on value added by industry projects and if UN, OECD, mining schemes or countries should work on more guiding material.
- Use of natural resources: biodiversity most referenced within “use of natural resources” with a few emerging specific issues (ecosystem services, offshore exploration, integrated land management, conflicts with ASM, LSM or agri-

culture). Energy and material use show nearly no referencing at all while for water use there are a few references.

- Emissions and land reclamation: for closure and land rehabilitation only mining closure and reclamation guidelines or scientific literature are referenced, while for mine waste and waste water schemes draw on various existing country statutory limits for example. Only for dust as an air emission there is not referencing by schemes but maybe indirectly through air quality management.

Overall, for the human rights, workers’ rights and community rights there are a good number of referenced guidelines, literature and laws. However, many sub-issues in the environmental field (both use of resources and emissions), the governance field and concerning local or national value added remain unaddressed by external references. Further research could investigate if there is a lack of guidelines for the latter issues or if schemes just have not cited existing material.

4 Conclusions and Recommendations

Several sustainability schemes for mining and the mineral supply chain have been developed in recent years by associations, companies from the supply chain, financial institutions, multi-stakeholder corporations, alternative trade organizations or governmental bodies. Scheme diversification is driven by several influencing factors, most predominantly by scheme founders' motivation. Their primary objectives are central for the basic scope of the scheme which may be the use of the scheme as a communication tool, for compliance with conflict minerals obligations, as a certification for best practice industrial mining or for the improvement of ASM working and production conditions and community development. However, the growing number of schemes addressing similar issues but for different commodities or country contexts and by developing heterogeneous requirements leads to increasing disorientation among stakeholders. Especially companies are confronted with growing costs due to investigations and multiple implementation of schemes although standards overlap in many areas in principle. Moreover, schemes' approaches and impacts are often difficult to communicate to the subsequent supply chain which creates a credibility problem. Based on the analysis of nineteen sustainability schemes, our recommendations thus mainly aim at reducing complexity of sustainability standards and increasing transparency but not necessarily at reducing the number of schemes active in implementation:

Recommendation 1: Defining a joint framework for sustainability issues in mining as a starting point for further discussions on harmonization of standard requirements.

From our analysis it becomes obvious, that scheme's heterogeneity in requirements likely is a major obstacle for harmonization of mining and mineral supply chain schemes. Schemes' standard documents and sustainability aspects are often structured and combined in various ways, with different concepts and wording (e.g. protected areas) and attention to detail (e.g. Environmental Impact Assessment). Furthermore, sustainability issues are addressed by differing requirements, basically management practices and sustainability objectives. Management includes actions, such as commitments, risk assessments, mitigation mea-

asures, monitoring, reporting on performance indicators, due diligence and traceability of the origin of minerals, as only a few examples. It should be considered to review management practices in the various sub-issues and arrange these uniformly across standards according to already existing environmental or safety management standards (e.g. ISO 14001, OHSAS 18001) or to develop a mining-specific procedure. Furthermore, requirements could be depicted in different columns to clearly distinguish between general objectives (e.g. increase energy efficiency) and the explicit measures or explicit threshold values proposed (e.g. use of energy efficient pumps, maximum energy consumption). This could make standards more structured and convenient for users, especially for comprehensive standards which are supplemented by numerous explaining documents challenging readers. A consolidated framework for sustainability issues in mining that could uniformly structure standard catalogues, as suggested here, could be used by schemes and stakeholders as a starting point for further discussions on the approach of harmonizing requirements. Next to a common structure of issues it would be useful to come to further agreements on the order of management and sustainability requirements, degree of detail, definitions and wording. Especially schemes with similar or overlapping scope and aspiration should consider harmonization of standard requirements.

Recommendation 2: Developing internationally agreed guidance documents or issue-specific standards for sustainability issues where guidance is missing so far.

It can be observed that where internationally accepted standards or guidance are available, such as the ILO Conventions and Recommendations, sustainability issues in mining are more likely addressed by schemes and references are used for legitimation. However, many sub-issues in the areas of environment, social welfare and company governance lack references and are less often integrated by schemes. Accordingly, we propose to analyze in which areas international guidance documents are missing and could contribute to the developments of standards and schemes. Moreover, mining specific issues, such as closure and land reclamation may require mining specific

guidance which is already provided by some mining associations, for example. Furthermore, mining standards upon specific sub-issues, such as tax payments transparency (EITI), sustainability reporting (GRI) and safe cyanide handling (Cyanide Code) are referenced by a number of schemes, indicating that they help to align schemes' issues. It has to be further analyzed to which degree requirements of such specific schemes might also help to harmonize standard requirements in general.

Recommendation 3: Fostering broader use of incremental standards which allow companies to improve and participate independent of company scale.

Our analysis showed that some schemes developed incremental standard catalogues with basic as well as more demanding requirements to help companies to improve over time (minimum requirements up to best practices). We also observed that medium sized companies, well performing ASM producers as well as less advanced ASM producers (e.g. ASM entry standard in development), have not been addressed by schemes so far. The question arises if there is a need for better integration of other company scales than just ASM and LSM. Incremental standards covering a bigger range of company scales would allow for ongoing participation of companies even if their company scale changes over time. Another option would be that schemes work closer together to allow for seamless scheme participation.

Recommendation 4: Developing a modular reference standard that could be shared among mineral schemes for individual implementation while at the same time allowing better understanding and comparability.

In the agricultural sector, there are already modular standards (e.g. Global G.A.P.) in use that define requirements for various commodities (e.g. fish, vegetable and fruit). Moreover it is known from other sectors, too that many companies would favor consolidation of standards or even use of one universal sustainability standard rather than several standards for individual issues (The Steering Committee, 2015). Adopting this concept for mineral schemes would mean to develop a holistic standard and to indicate which requirements apply to the various mineral resources, mine types and supply chain tiers, for instance. Such a standard

catalogue would allow schemes to reference a common basic standard and adapt it to their individual scope and area of application by choosing a number of given requirements without lacking comparability among schemes in the end. As a result, the standard landscape on mineral resources could be reduced to a defined number of standard subtypes manifested mainly by objective and scope (e.g. development of ASM, best practice certification of LSM, traceability and sustainability along the supply chain). This does not necessarily mean to reduce the number of schemes. Quite the contrary, there is potential for sustainability improvements in most mining sectors and countries which demands for several actors and concerted efforts that address the relevant issues in that context.

Recommendation 5: Exploring the option of a standard for the mineral supply chain including all mineral commodities.

The lack of a resource-unspecific scheme for the entire mineral supply chain and growing societal challenges lead various 'industries' to create their own supply chain standards. These standards use individual traceability systems, requirements as well as various approaches to create incentives along the supply chain. Due to such heterogeneity, more research and discussion about effective incentive systems matching the framework condition of current markets is needed. While overarching schemes are being developed for mining, it remains to be proven if standard-setting for an all-commodities supply chain standard is possible despite maybe initially high complexity and cost of broader standard-setting. However, standard-setting could be facilitated by drawing back on existing standards for mining, smelters and supply chain and integrating their requirements. Apart from this, improvements for standard setting processes should be in general further investigated. Moreover, complexity and feasibility of such a scheme may also strongly depend on the decision whether the supply chain actors beside mining, need to comply "merely" with traceability obligations (e.g. Fairmined, Bettercoal, Fair Stone) or if they have to go beyond and also meet certain sustainability requirements, e.g., human rights and environmental protection (e.g. RJC and partly ASI). International guidance, like the UN Guiding Principles for Business and Human Rights would suggest the latter (United Nations, 2012). Furthermore, if

certification of all commodities would be handled by one scheme this could lead to an overload so that it is conceivable that again a joint supply chain standard could be utilized for implementation by various schemes, instead. In the global development bank sector, for instance, sharing of the IFC Performance Standards is already a common practice among development banks.

Recommendation 6: Developing widely accepted models for assurance and impact measurement systems.

Currently, coordination of the scheme landscape is already being tackled by several international working groups and discussion forums in order to find ways of scheme alignment and acknowledgement. However, it is necessary that schemes not only take into account further harmonization of requirements but also assurance and impact monitoring systems which could equally profit from alignment due to easier understanding and credibility. Moreover, the findings suggest that schemes provide various incentives for scheme uptake and compliance but that there is a need to further investigate on effective incentive systems.

Since mining operations are highly sensitive to mineral commodities' price fluctuations due to relatively constant mining costs (including costs for sustainability measures), enhanced societal discussions on proper cost internalization of negative impacts and pricing of responsibly mined minerals is needed. Regardless of the schemes' various foci on certain management aspects or sustainability issues, proper implementation of requirements will eventually always depend on the schemes' capacity building, applied incentives and assurance systems that make sure that requirements are met in practice. There still seem to be huge challenges in the mentioned areas so that collective action of schemes right from the beginning, e.g. through joint research and pilot projects, might be the most straightforward way in comparison to individual efforts.

Altogether, harmonization of standards could strengthen mineral schemes' position and recognition in the market. It will be the challenge of schemes to find a balance between diversification of standards and schemes for various scopes and harmonization for better understanding and acceptance.

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Annex I – Profiles of Sustainability Schemes for Mineral Resources

Explanatory Template for the Scheme Profiles

Name of the Sustainability Scheme	
Background Information	
Initiators of the scheme	Name(s) of the organization(s) responsible for founding the scheme.
Administrative body	Name of the scheme (the administrative body that is managing and coordinating scheme documents and activities).
Founding date and location	Founding date and location of the scheme's administrative body (city, country).
Publication of the first standard version	Name of the first standard version and year of publication (We use the word "standard" as a synonym for the document that sets the scheme's requirements, which in some cases is named "Code", "Performance Standards", "Framework", "Program", "Code of Practice".)
Up-to-date standard version and next revision	Name of the up-to-date standard version and its year of publication and the year of its next revision
Background of the scheme	The scheme is categorized according to its founding history and its relation to other institutions: (1) Scheme has exclusively been established for the standard development and implementation (2) Scheme is part of an existing institution (e.g. association or research institute) or requirements are developed by an existing institution (3) Scheme is governed by a public institution and positioned in legal regulations
Stakeholder groups in a) first standard-setting b) latest revision (if applicable)	The scheme is categorized according to different stakeholder groups participating in first standard-setting and latest revision: (1) Civil society (2) Private sector (3) Public institutions
Subject-Matter of the Standard	
Main objective	Description of the scheme's main objective, its supply chain approach and sustainability focus (environmental, social, economic).
Target commodities	Mineral commodities covered by the scheme.
Application of the standard along the supply chain	Supply chain tiers addressed by the scheme through scheme implementation and conformity assessments.
Proof of origin	(1) Yes: A description of the traceability system is given. (2) No
Assessment unit	(1) All facilities: All mining facilities (projects) of the company are participating in the scheme and are being assessed. (2) Selected facilities: Only certain mine sites or smelters are participating in the scheme are being assessed.
Geographic focus	(1) National: List of specific countries, continents or areas (2) Global
State of implementation	The implementation status of the scheme is presented. If available, a list of the assessed units (e.g. mining companies, smelters, mine sites) and further information on compliance status (uncertified, active, verified, certified, eligible, etc.), commodities, geographic distribution and major non-compliances is given.

Name of the Sustainability Scheme		
Membership program		(1) Yes: The scheme is based on a membership program. If available, the various membership types, recent number of members and company names are listed. (2) No: The scheme doesn't provide a membership program.
Recent developments		→ Recent developments concerning the schemes' activities and plans are presented (e.g. scheme review processes, extension of the scheme's geographic focus, new collaborations).
Requirements of the Standard		
Summarized standard requirements	Environmental issues	A representative keyword list selected individually for each scheme is presented.
	Social and societal issues	A representative keyword list selected individually for each scheme is presented.
	Corporate governance and trade	A representative keyword list selected individually for each scheme is presented.
Rigor or flexibility of the standard model for compliance		A categorization and description of the scheme's rigor or flexibility concerning the implementation of standard requirements is given (some schemes combines two options): (1) Obligatory standard catalogue (incl. incremental requirements): The scheme has a defined set of requirements that have to be implemented within a given time frame. The scheme may also include addition of new requirements over time. (2) Compulsory voting standard catalogue: The scheme provides a set of mandatory requirements that companies have to choose from and comply with in a given time frame. (3) Voluntary degree of compliance with the standard catalogue: The scheme provides full flexibility regarding the time frame for implementation of requirements.
Provided documents and tools		If available, major documents provided by the schemes on their websites as well as year of publication.
Number of referenced international conventions and other guidance		The number of referenced international conventions or guidance on which the scheme's standard is based is roughly categorized: (1) < 10 (2) 10–20 (3) > 20
Reference to other mining schemes for more information or guidance		(1) Yes: List of the mining and metals specific schemes and standard sections which are referenced for further information or serve as a basis for the schemes' standards. (2) No: No reference of other mining and metals schemes.
Recognition of other mining schemes for the proof of compliance of certain issues		(1) Yes: Explanation of the schemes and the respective standard's sections applicable to cross-recognition. (2) No: There is no cross-recognition with other mining and metals schemes' standards.
Assessment of Standard Compliance and Transparency of the Results		
Subject-Matter of the conformity assessment		Explanation of the subject-matter of the scheme's conformity assessment and assessment procedure (e.g. assessment of management systems or of a company report on certain issues and performance levels).
Type of conformity assessment (audit)		The type of conformity assessment (audit) is categorized according to three levels: (1) No assessment (2) Verification (3) Verification and certification (certification requires a verification)

Name of the Sustainability Scheme	
Auditor status and frequency of audits	Description of the auditor status designated for the conformity assessment (audit) and the frequency of audits: (1) 1 st party (frequency) (2) 2 nd Party (frequency) (3) 3 rd Party (frequency)
Assessment elements	Presentation of the conformity assessment's elements: (1) Self-Assessment (2) Document analysis (3) Site inspection (4) Interviews with workers, managers, etc.
Grievance mechanisms for auditor decisions	(1) Yes: A grievance mechanism is available, which gives companies the opportunity to complain about auditor decisions (e.g. inappropriate assessment decision or required corrective action). If available, this mechanism is described in detail. (2) No: There is no such grievance mechanism.
Whistle-blowing mechanism for standard non-compliances	(1) Yes: A whistle-blowing mechanism is available, which gives various stakeholders the possibility to report non-compliances with the scheme's standard. If available, this mechanism is described in detail. (1) No: There is no such whistle-blowing mechanism.
Party publishing the results	A description of the parties obliged to publish results on the scheme participation (e.g. type of reports): (1) Standard initiative (2) Company
Degree of detail of the published results	The degree of detail of the results published by various parties (e.g. only consolidated results or very detailed performance levels): (1) Summarized results (2) Results about single standard requirement For both types a description of aggregation of information is provided.
List of References	
The scheme's website(s) and major documents used for the corresponding profile.	

ASI Performance & Chain-of Custody Standard for Aluminum

ASI Performance Standard & ASI Chain-of-Custody Standard	
Background Information	
Initiators of the scheme	14 Companies from the aluminium value chain: Aleris, Amcor Flexibles, AMAG/Constantia Flexibles, Audi, Ball Corporation, BMW Group, Constellium, Hydro, Jaguar Land Rover, Nespresso, Novelis, Rexam, Rio Tinto Alcan, Tetra Pak Convenor and co-ordinator: The International Union for Conservation of Nature (IUCN)
Administrative body	Aluminium Stewardship Initiative
Founding date and location	2012 – standards setting project under IUCN, Switzerland 2015 – as incorporated entity and registered charity, Aluminium Stewardship Initiative Ltd, Australia
Publication of the first standard version	ASI Performance Standard version 1 (2014), ASI Chain-of-Custody Standard, Draft I – version 1 (2014)
Up-to-date standard version and next revision	ASI Performance Standard (2014), minor revision for consultation in 2017 (V2) ASI Chain-of-Custody Standard, Draft II (2015), Draft III in 2016 (consultation completed), draft 4 for consultation in 2017, with finalization of version 1 targeted by end of 2017

ASI Performance Standard & ASI Chain-of-Custody Standard	
Background of the scheme	(1) Scheme has been established exclusively for the standard development and implementation
Stakeholder groups participating in a) first standard-setting b) latest revision (if applicable)	(1) Civil society (a, b) (2) Private sector (a, b) (3) Public institutions
Subject-Matter of the Standard	
Main objective	ASI aims at fostering greater sustainability and transparency throughout the aluminum industry by defining globally applicable standards for sustainability performance and material chain-of-custody for the aluminum value chain. ASI is aiming for implementation of best practices and in its current design largely management system focused.
Target commodities	Aluminum
Application of the standard along the supply chain	ASI Performance Standard: "The ASI Performance Standard's principles and criteria are applicable to all stages of aluminum production and transformation, specifically: bauxite mining, alumina refining, primary aluminum production, semi-fabrication (rolling, extrusion, forging and foundry), conversion, and refining and re-melting of recycled scrap." ASI Chain-of-Custody Standard: As above
Proof of origin	(1) Yes, traceability system under development – will adopt a mass balance chain of custody model
Assessment unit	(1) All facilities (2) Selected facilities There will be flexibility to have a Certification Scope that covers (1) or (2). An Assurance Manual is under development and will be published in 2017.
Geographic focus	(2) Global
State of implementation	The launch of the certification program is targeted for the end of 2017.
Membership program	(1) Yes: 47 members and 6 classes of membership (Feb 2017) <ul style="list-style-type: none"> • Associations: 14 members (A/U/F e. V., Aluminium Association of Canada, Aluminium Federation, Aluminium Federation of South Africa, Associação Brasileira do Alumínio, Australian Aluminium Council, Can Manufacturers Institute, CII – Sohrabji Godrej Green Business Centre, Council for Aluminium in Building, European Aluminium, Global Aluminium Foil Roller Initiative (GLAFRI), Gulf Aluminium Council, IGORA, The Aluminum Association) • Civil Society: 7 members (Chimbo, Fauna and Flora Int., Keep America Beautiful, Institute for Human Rights and Business, IUCN, Verite, WWF) • General Supporters: 2 members (Energia Potior, Regain) • Downstream Supporters: 1 member (Apple) • Industrial Users: 8 members (Arconic, AUDI, BMW AG, Coca-Cola Enterprises Ltd., Jaguar Land Rover, Lavit, Nestlé Nespresso, Schüco) • Production and Transformation: 14 members (Alcoa Inc., Aleris, AMAG Austria Metall, Amcor, Ball Corporation, Constantia Flexibles Int. GmbH, Constellium, EGA, Norsk Hydro, Novelis Inc., Rio Tinto, SAPA, Tetra Pak, UC Rusal)
Recent developments	<ul style="list-style-type: none"> • In 2016, continued development of all the required normative documents (indicators, guidelines, assessment system for independent 3rd-party-verification); Public consultation on CoC standard Draft 3 October – December 2016 • Further activities into 2017 among others: <ul style="list-style-type: none"> • Public consultation on CoC standard Draft 4 and build consensus on a final version for Standards Committee approval • Minor revision of ASI Performance Standard to issue version 2, and development of supporting Guidance, both for public consultation • Agree the risk/materiality approach to assurance as will be outlined in the ASI Assurance Manual • Transform work on indicators convened by IUCN into an evidence list for the ASI Performance Standard and develop an evidence list for the CoC Standard

ASI Performance Standard & ASI Chain-of-Custody Standard		
Recent developments		<ul style="list-style-type: none"> • Develop ASI's monitoring and evaluation plan, so relevant data collection for impacts reporting can be integrated into the design of the assessment and reporting approach • Develop auditor accreditation criteria and process and encourage applications • Build an online assessment platform for ASI standards • Develop and roll out first member and auditor training program – initially to pilot participants • Pilot test ASI standards and assurance model via the online assessment platform
Requirements of the Standard		
Summarized standard requirements	Environmental issues	<ul style="list-style-type: none"> • Environmental policy • Material stewardship: environmental life cycle assessment, collaboration with initiatives, product design, aluminium process waste, collection and recycling • Water consumption and management • Energy consumption • Regenerative energy • Greenhouse gas emission • Air emission • Management of emission reduction • Assessment of biodiversity and management plans • Invasive species • No-go areas in world heritage areas • Waste water management • Waste, waste management und reporting • Management and reporting about leaks, accidents and outlets • Residues of bauxite (refinery) • Management of used pot linings (smelters) • Slags (foundries, re-smelters, refinery) • Environment management systems • Environment impact assessment • Reporting about different themes/topics/areas
	Social and societal issues	<ul style="list-style-type: none"> • Social policy • Human rights and due diligence • Indigenous people and livelihood support programs • Mitigation measures • Women rights • FPIC • Cultural heritage • Involuntary resettlement • Rights and livelihoods of the communities • Conflict-affected and high-risk areas • Safety practices • Reparations/make amends • Remuneration • Freedom of association and collective bargaining • Child labour • Forced labour • Anti-discrimination • Openness to dialogue with workers • Safety practices • Discipline practices • Health and safety for workers: policy, risk assessment, workers' commitment, management system • Emergency plan • Stake holder information • Community development and stakeholder engagement • Grievance of stakeholders and solution mechanisms • Whistle-blowing systems for non-compliance • Social management system • Impact assessment for social, cultural and human rights

ASI Performance Standard & ASI Chain-of-Custody Standard		
Summarized standard requirements	Corporate Governance and Trade	<ul style="list-style-type: none"> • Governance policy • Code of conduct • Compliance • Reporting about non-compliance • Action plans for improvement • Corruption • Cartel • Responsible procurement • ASI chain of custody standard • Risk assessment of suppliers • Material handling and storage • Supplier due diligence • Improvement measures • Material accounting system/inventory periods • Outsourcing and subcontractors • Due diligence for mergers and acquisitions and closure/decommissioning/divestment with environmental, social and governance aspects • Transparency of payments to government • Sustainability reporting • Standard officer within the company
Rigor or flexibility of the standard model for compliance		(1) Obligatory standard catalogue (incl. incremental requirements) The standard model for compliance still under development: The whole standard will be applicable, however, a risk-based approach to assurance will be used. The auditor will decide what is assessed.
Provided documents and tools		<ul style="list-style-type: none"> • ASI Chain of Custody Standard 2016 consultation – Log of comments received (2017) • ASI Chain-of-Custody Standard (Draft III for public consultation, 2016) • ASI Performance Standard, Principles and Criteria (2014) • ASI Standards Documents Overview (2016) • ASI Policies, e. g. ASI Antitrust Compliance Policy <p>Under development:</p> <ul style="list-style-type: none"> • ASI Assurance Manual • ASI Claims Guide • Standards Guidance for Implementation of both ASI Standards • Auditor Accreditation system • Audit protocols (replacing the indicators document) and online assessment platform • Monitoring and Evaluation program • Training programs for members and auditors
Number of quoted international conventions and other guidance		(3) > 20
Referral to other standards for more information or guidance		(1) Yes <ul style="list-style-type: none"> • Global Reporting Initiative (GRI) and Mining and Metals Sector Supplement • International Council on Mining and Metals (ICMM): Good Practice Guidance on Mining and Biodiversity; Good Practice Guidance on Indigenous Peoples and Mining; Overview of Leading Indicators for Occupational Health and Safety in Mining • International Finance Corporation (IFC) Performance Standards 1 (ESIA), 5 (Resettlement), 6 (Biodiversity), 7 (Indigenous People), 8 (Cultural heritage) • Standard of the Extractives Industry Transparency Initiative (EITI)
Recognition of other standards for the proof of compliance of certain issues		(1) Yes, a Benchmarking and Harmonization Working Group was created and the harmonization requirements will be included in the Assurance Manual
Assessment of Standard Compliance and Transparency of the Results		
Subject-Matter of the conformity assessments		Assessment requirements under development (Assurance Manual): A risk-based approach to assurance is chosen. The auditor and not the company will decide what is assessed depending on risk.

ASI Performance Standard & ASI Chain-of-Custody Standard	
Type of conformity assessment (audit)	(3) Verification and Certification
Auditor status and frequency of audits	(3) 3 rd Party (frequency unknown, audit system under development and will be published in the Assurance Manual – every 3 years with frequency of surveillance audits within that period determined by risk level)
Assessment elements	Assessment requirements under development
Grievance mechanisms for auditor decisions	(1) Yes, via the auditors internal systems and via the ASI Complaints Mechanism
Whistle-blowing mechanism for standard non-compliances	(1) Yes a) Can be submitted by employees of Members, Auditors or ASI (can be handled anonymously) b) Process is handled under ad-hoc panel (ASI staff members, lawyer, third party) c) Ad-hoc panel may i.a. request for further information or commission additional audits d) Ad-hoc panel makes recommendations to ASI and decides about appropriate actions e) Appropriate actions include loss of membership, withdrawal of certification, corrective actions, matter being flagged for next audit
Party publishing the results	(1) Standard initiative: ASI will publish the results both of the audit and the certification process. Also complaints will be disclosed. However, the disclosure details are still under development.
Degree of detail of the published results	Requirements under development

List of References

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Bettercoal's Bettercoal Code

Bettercoal Code	
Background Information	
Initiators of the scheme	Seven major European energy companies: Dong Energy (DNK), EDF (FR), Enel (IT), Uniper (D), GDF Suez (FR), RWE (D), Vattenfall (SWE)
Administrative body	Bettercoal
Founding date and location	2011, London, Great Britain
Publication of the first standard version	Bettercoal Code Version 1 (2013)
Up-to-date standard version and next revision	Bettercoal Code Version 1 (2013)
Background of the scheme	(1) Scheme has been established exclusively for the standard development and implementation

Bettercoal Code	
Stakeholder groups in a) first standard-setting b) latest revision (if applicable)	(1) Civil society (a) (2) Private sector (a) (3) Public institutions (a)
Subject-Matter of the Standard	
Main objective	Bettercoal is a global initiative that was set up by European energy utilities dedicated to enabling, assuring and reporting on reporting of continuous improvement of sustainability performance in the coal supply chain. Therefore the Bettercoal code – a comprehensive framework of health, safety, social and environmental best-practices for mining – sets operating standards for coal producers. Bettercoal assesses performance of coal suppliers against the Bettercoal Code and jointly develops a continuous improvement plan. It does not provide a certification of performance. The summary results of the assessment are shared with Bettercoal Members only and are used in purchasing decisions and due diligence processes. The desired outcome is a re-enforcing loop of improvement and recognition in the coal supply chain.
Target commodities	Coal
Application of the standard along the supply chain	Mine site
Proof of origin	(2) No
Assessment unit	(1) All facilities: all mine sites of the coal supplier The operator providing coal to Bettercoal Members. Coal supplier operations may include coal production and /or trading. One coal supplier may own /control multiple coal mining operations.
Geographic focus	(2) Global Australia, Colombia, Germany, Great Britain, Indonesia, Kazakhstan, Norway, Poland, Russia, South Africa, United States
State of implementation	<ul style="list-style-type: none"> Since 2014, 26 Self-Assessments and six Site-Assessments (including a Re-Assessment) have been completed of different coal mines around the world. The first Site-Assessment took place in August 2014 at Drummond Ltd. in Colombia; other Site-Assessments have been conducted in Russia (Kuzbassrazrezugol Coal Company OJSC), South Africa (Canyoncoal Pty Ltd), Indonesia (PT Adaro), the UK (HJ Banks) and Poland (Polska Grupa Gornicza). A Re-Assessment took place at Drummond Ltd. to verify the implementation of its Continuous Improvement Plan.
Membership program	<ul style="list-style-type: none"> Yes “Regular members” 13 end users (open to energy companies, steel and cement producers): Enel, Engie, Fortum, GasNatural Fenosa, Iberdrola, RWE, Uniper, Vattenfall, ESB, Dong Energy, Drax, EDF, EDP. “Associate members”: 4 other supply chain actors (open to coal producers, trade associations, traders, logistic- and transport companies): Branche Organisatie Zeehavens, EMO, OBA, Rietlanden Terminals BV
Recent developments	<ul style="list-style-type: none"> In 2015, a new benchmark tool “Members Implementation and Reporting Obligation” (MIRO) was developed for Regular Bettercoal Members in order to control the performance in key areas (KPI) against the commitments and assesses if reporting and implementation obligations have been met (e.g. due diligence). Regular Members’ reporting is a phased process; currently Bettercoal reports on ‘Phase 2 Scorecards’ and will work to develop an increasingly stringent Phase 3 in 2017. Bettercoal is currently working on strengthening the Assurance System for Bettercoal standards. A major 18 month ‘review, renew and align’ project underway to align various aspects of the Bettercoal system according to the core Principles:

Bettercoal Code		
Recent developments		<ul style="list-style-type: none"> – Supplier On-Boarding Procedure – Standard-Setting and Review Procedure – Policy on Association – Complaints Mechanism – Revised Assessment Manual – Country-Prioritisation Strategy – Claims Guide – Revised Assessor Approval Procedures – Transparency and Reporting Templates • Moreover, four core Principles have been developed to guide the design and implementation of the Bettercoal Assurance System: <ul style="list-style-type: none"> – Risk Based Approach to reduce the assurance burden for mining companies and increase efficiency – Commitment to appropriate levels of transparency and disclosure for <ul style="list-style-type: none"> – the procedures and processes of the Bettercoal Assessment Program and MIRO – the results of the assessments of coal suppliers – how Bettercoal Members consider the outcomes of the Assessment Program in their coal purchasing decisions – Continuous improvement at mine sites against a baseline of performance. Assessors are enablers engaging suppliers and impart their knowledge of best practices to the operations. – Stakeholder engagement with industry and non-industry stakeholders through the Technical & Advisory Committee, actively participating in related initiatives, workshops and meetings. The Technical & Advisory Committee is a new multi-stakeholder committee and composed of up to fifteen members: four representatives from the Member companies of Bettercoal, four individual representatives from the coal suppliers participating in Bettercoal and six 'non-industry' interested parties. • Bettercoal and the Dutch Federation of Trade Unions (FNV) discuss synergies following a Colombia visit with a focus on Occupational Health & Safety.
Requirements of the Standard		
Summarized standard requirements	Environmental issues	<ul style="list-style-type: none"> • Consumption of natural resources • Impact Assessment • Efficiency measures • Waste waters • Air emissions • Biodiversity and Ecosystem services Assessment • Protective measures and protection zones • Legally protected areas • No-Go areas • Invasive species • Integrative land management • Pollution prevention and controlling
	Social and societal issues	<ul style="list-style-type: none"> • Recruitment conditions • Working times • Remuneration • Engagement in communal development • Human rights • Child labour • Forced labour and freedom of movement • Anti-discrimination • Conflict areas and high-risk areas • Freedom of assemblage and negotiation • Free, Prior and Informed Consent • Health and safety • Disciplinary measures • Safety practices and personal • Cultural heritage • Whistle-blowing and grievance mechanisms • Mine closure

Bettercoal Code		
Summarized standard requirements	Corporate Governance and Trade	<ul style="list-style-type: none"> • Legal compliance • Policy • Transparency • Corruption • Due Diligence about risks and impacts
Rigor or flexibility of the standard model for compliance		<p>(3) Voluntary degree of compliance with the standard catalogue</p> <p>First the Supplier completes a Self-Assessment Questionnaire (SAQ), which introduces the coal supplier to the Bettercoal Code and helps him identify areas of improvement. In the SAQ, compliance to the 10 Principles and 31 Provisions of the Code is evaluated by 94 main questions. The SAQ and uploaded documents are then reviewed by an independent auditor who compares the self-assessed performance ratings with the SAQ questions. The next stage of the assessment process is an on-site assessment by a third-party Assessor, and provides a review of the coal mining operations' performance against the Bettercoal Code. The assessment results are categorized into four levels (excellent, satisfying, improvable and unsatisfactory) and indicate the degree to which certain management systems and performances have been achieved. The results are used by Bettercoal Members to make informed decisions on coal purchases and due diligence measures, and are captured within the "Members Implementation and Reporting Obligations" tool (MIRO). However, the Assurance System for Bettercoal's Standards is currently being reviewed.</p>
Provided documents and tools		<ul style="list-style-type: none"> • Bettercoal Anti-trust policy (2011) • Bettercoal Articles of Association (2012) • Bettercoal Code Version 1 (2013) • Bettercoal Code Assessment Guideline (2014) (under review) • Bettercoal Code Assessment Procedure (2013) (under review) • Bettercoal Terms of Reference for Developing a Code for Responsible Coal Mining (2012) (a new standard-setting and review procedure under development) • Bettercoal Code Self-Assessment Questionnaire (2013, Excel, under review) • New documents and tools are being developed (see <i>recent developments</i>)
Number of quoted international conventions and other guidance		< 10
Referral to other standards for more information or guidance		<p>(1) Yes</p> <ul style="list-style-type: none"> • The Code of Practices of the Responsible Jewellery Council was used as a basis for the Bettercoal Code. • GRI Sustainability Reporting Framework • International Finance Corporation (IFC) Performance Standards • ISO 14001 and OHSAS 18001 • Social Accountability SA8000 • International Council on Mining and Metals • Extractives Industries Transparency Initiative
Recognition of other standards for the proof of compliance of certain issues		<p>(1) Yes (under development)</p> <p>Bettercoal recognizes that coal mining companies may have undergone internal and /or third party audits covering areas similar or equivalent to those covered by the Bettercoal Code. Bettercoal is currently developing guidance on the Equivalence of Existing Certifications for assessors on which commonly used standards and certifications shall be considered equivalent to the Bettercoal Code during a Bettercoal assessment.</p>
Assessment of Standard Compliance and Transparency of the Results		
Subject-Matter of the conformity assessment		The existing Assessment Program comprises Self-Assessment by the coal mines, a third-party Site-Assessment, the development and implementation of Continuous Improvement Plans and periodic Re-Assessment and Reporting. Bettercoal members take into account the results of the assessment process in their purchasing decisions and due diligence processes.
Type of conformity assessment (audit)		<p>(2) Verification</p> <p>Certification is not allowed so that it is prohibited for the company to promote with specific performance levels based on the Bettercoal assessments.</p>

Bettercoal Code	
Auditor status and frequency of audits	(1) 1 st Party (self-assessment, all 1–2 years, depending on the last performance level) (3) 3 rd Party (on-site re-assessment all 1–5 years, depending on the last performance level and initial decision of Bettercoal) The assessment process, including frequency of audits and levels of assurance, is currently under review.
Assessment elements	(1) Self-Assessment (2) Document analysis (3) Site inspection (4) Interviews with workers, managers, etc. The Assessment process and elements are currently being reviewed.
Grievance mechanisms for auditor decisions	(1) Yes a) Dispute settlement between affected parties b) Involvement of Executive Director of Bettercoal c) Involvement of mediator or on-site investigator d) Bettercoal mandates new auditor The existing grievance mechanism will be reviewed.
Whistle-blowing mechanism for standard non-compliances	The whistle-blowing mechanism is under development.
Party publishing the results	(1) Standard initiative (yearly) The detailed assessments of coal suppliers are currently only available to the Bettercoal members in order to support trade relations and exchange of due diligence data. (2) Company (variable) Coal suppliers are allowed to publish their 3 rd Party audit reports if they wish. Guidance for reporting is provided in future.
Degree of detail of the published results	(1) Summarized results The performance of Bettercoal in general and the summarized performance of the coal suppliers is reported publicly. Detailed assessment reports won't be published in the future. However, this is currently under review.

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Conflict-Free Sourcing Initiative for Tin, Tantalum, Tungsten and Gold

Conflict-Free Smelter Program (CFSP)	
Background Information	
Initiators of the scheme	<ul style="list-style-type: none"> Electronic Industry Citizenship Coalition (EICC): > 110 electronics, retail, auto and toy companies Global e-Sustainability Initiative (GeSI): 40 world-leading service providers and vendors from the Information and Communication Technology (ICT) sector
Administrative body	Conflict-Free Sourcing Initiative (CFSI) > 350 companies and associations from many diverse industries are part of the CFS
Founding date and location	2008, Washington, D.C, USA
Publication of the first standard version	<p>Conflict-Free Smelter Program (CFSP) under CFSI published (2012/11):</p> <ul style="list-style-type: none"> Audit Protocol for Gold Audit Protocol for Tin and Tantalum Audit Protocol for Tungsten <p>→ CFSI audit protocols were largely designed based on global standards like the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas and the U.S. Dodd-Frank Wall Street Reform and Consumer Protection Act.</p>
Up-to-date standard version and next revision	<ul style="list-style-type: none"> CFSP Gold Supply Chain Transparency Smelter Audit Standard and Instruction (2010, last revision Apr 2014) CFSP Supply Chain Transparency Smelter Audit Protocol for Tin and Tantalum (2011, last revision Nov 2013, consultation on new draft ended in Jan 2017) CFSP Supply Chain Transparency Smelter Audit Protocol for Tungsten (2011, last revision Nov 2013) All protocols are currently being revised and will be finalized in 2017. A revision every two years is targeted.
Background of the scheme	(1) Scheme has been established exclusively for the standard development and implementation
Stakeholder groups in a) first standard-setting b) latest revision (if applicable)	<p>(1) Civil society (b) (2) Private sector (b) (3) Public institutions (b)</p> <p>A new Operations Manual (Jan 2016, section 8.1 Qualification Protocols) sets out the process for protocol development and review by key parties, including auditees, auditors, the Audit Review Committee, Industry Association Partners, OECD staff/assessment team, and non-governmental organizations, as determined relevant by CFSI Staff.</p>
Subject-Matter of the Standard	
Main objective	The Conflict-Free Smelter Program is a joint industry initiative that aims at facilitating compliance with responsible 'conflict minerals' sourcing from conflict-affected and high-risk areas for downstream companies. Therefore, CFSP identifies and audits smelters and refiners that have a 'conflict minerals' due diligence process in place. The audit standard was designed based on the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas and the U.S. Dodd-Frank Wall Street Reform and Consumer Protection Act and thus helps smelters to conduct due diligence and associated reporting in compliance with such guidance. Moreover, downstream companies are supported through CFSI's Conflict Minerals Reporting Template (CMRT) to disclose and communicate about such identified smelters in their supply chains in order to meet requirements about responsible 3TG sourcing.
Target commodities	"Conflict minerals 3TG": Cassiterite, columbite□tantalite, gold (and recycled or stocked gold), wolframite, or their derivatives
Application of the standard along the supply chain	Tin, Tantalum and Tungsten smelters, and gold refiners

Conflict-Free Smelter Program (CFSP)						
Proof of origin	(1) Yes <ul style="list-style-type: none"> • Example Gold: Mechanism for tracing products back to purchased material sources: <ul style="list-style-type: none"> – Receiving shipping/transportation documentation (bill of lading, packing slip, waybill, invoice, lot numbers assigned by refinery) – Sales documented with specific lot numbers – Reconciliation of receipts, inventories and sales volumes to demonstrate receipts are fully accounted for in a mass balance – Products can be traced back to close approximation to sources. Exact lot-to-lot correspondence may be approximated due to mixing of batches and continuous processes. 					
Assessment unit	(1) All facilities					
Geographic focus	(2) Global: Global focus on Conflict Affected and High Risk Areas, not only DRC and “Covered Countries”					
State of implementation	Conflict-Free Smelter Program Indicators (Feb 2017)					
	Status		Tantalum	Tin	Tungsten	Gold
	Active	Smelter/refiner started the audit process, signed the AA and AECI agreements, but is not yet going through an audit.	1	9	0	12
	Compliant	Smelter/refiner successfully completed the CFSP audit.	44	69	40	93
Eligible	Smelter/refiner meet CFSI definition of eligibility and can be audited under the CFSP (includes both Active and Compliant categories).	45	89	45	146	
Membership program	(1) Yes: The CFSI has over 350 member companies and associations from many diverse industries and provides three member types: <ol style="list-style-type: none"> 1. Vendor Members (provide goods and/or services for use by CFSI member companies): Assent Compliance, iPoint, Gensuite LLC Source Intelligence, Total Parts Plus 2. Association Members: Automotive Industry Action Group (AIAG), Japan Electronics and Information Technology Industries Association (JEITA), United States Fashion Industry Association (USFIA), Verband der Automobilindustrie (VDA) 3. Partner Members: company names available online: http://www.conflictreesourcing.org/about/members-and-collaborations/ → partner members profit from the access to reasonable country of origin (RCOI) data and to the CFSI’s Smelter Database with information about thousands of companies in the 3TG supply chain 					
Recent developments	<ul style="list-style-type: none"> • From September 2015 until September 2016 a pilot period for a CFSP Risk-Based Audit Program was run to explore the opportunities for reducing the on-site audit frequency for smelters and refiners who meet the specified criteria. • In November 2016, EICC and CFSI launched “the Multi-Industry Responsible Raw Materials Initiative (RRMI) to address the most significant social and environmental impacts related to the extraction and processing of raw materials used in the global supply chains of technology companies in multiple industries.” RRMI members will screen additional raw material to 3TG and sourcing practices for integrating them in their responsible sourcing strategies. EICC and CFSI members can participate in the RRMI which will have working group character. • In the same year, the CFSI Downstream Audit was published which helps validate that downstream companies within the tin, tantalum, tungsten and gold (3TG) supply chains source responsibly in line with the OECD Due Diligence Guidance. It is supposed to serve companies importing minerals and metals of 3T into the EU in the near future due to the forthcoming EU Directive on Conflict Minerals which will make due diligence reporting mandatory. 					

Conflict-Free Smelter Program (CFSP)		
Requirements of the Standard		
Summarized standard requirements	Environmental issues	No requirements currently. Looking to address through RRMI in the future
	Social and societal issues	No requirements currently. Looking to address through RRMI in the future
	Corporate Governance and Trade	<p>CFSP protocol implements the recommendations of the five-step framework of the OECD Guidance which asks refineries for an identification of all countries of origin, transport and transit for their mineral supply chains and for auditing their due diligence practices:</p> <p>Gold:</p> <ul style="list-style-type: none"> • Conflict minerals policy • Mechanism for tracing products back to purchased material sources • Gold refiner's internal management system should provide appropriate documentation that the gold-bearing material is from non-conflict sources according to four country levels (increasing documentation necessary): <ul style="list-style-type: none"> – Level 1 Documentation: countries that are neither specifically identified as conflict regions nor identified as plausible destinations of smuggled or exported gold from conflict regions – Level 2A Documentation: countries which are known or plausible destinations of smuggled or exported gold from conflict regions (Kenya, United Arab Emirates) – Level 2B Documentation: countries that have been specifically identified by national or international governmental agencies as having a significantly enhanced risk of smuggled or exported gold from conflict regions (Angola, Burundi, Central African Republic, Republic of the Congo, Rwanda, South Sudan, Tanzania, Uganda, Zambia) – Level 3 Documentation: countries that have been specifically identifies by national or international governmental agencies as engaged in conflict (DR of Congo) • Same four levels of documentation for recyclable materials and for existing gold stocks after January 1st 2012 <p>Tungsten:</p> <ul style="list-style-type: none"> • Conflict minerals Policy • Mass balance requirements • Material type and origin verification requirements • Documentation for CFSP compliance (additional documentation expectations compared to gold, see Annex 3 and 4) • Management systems allow only for processing of minerals • from conflict free sources <p>Tin and Tantalum (new protocol requirements – the other 2 protocols for Gold and Tungsten will follow the same structure when updated in 2017):</p> <ul style="list-style-type: none"> • OECD 5 Step Framework: All smelters need to conform to OECD steps 1,2 and 5. If red flags are identified per the OECD, then a smelter will need to conform to step 3: • Step 1 – Strong Company Management Systems: control of documents/ records, management review, internal audits, corrective actions, preventive actions, supply chain policy, management responsibility, internal material control systems and mass balance calculation, supplier engagement, grievance mechanism • Step 2– Identification of Supply-Chain Risk(s): Determination of Material Category, Source, and Origin, Determination of Risk Level • Step 2– Assessment of Supply-Chain Risk(s): Low and High Risk Level • Step 3–Risk Management (supply chains with High Risk sourcing) • Step 5 – Public Reporting
Rigor or flexibility of the standard model for compliance	Obligatory standard catalogue (incl. incremental catalogues and deadlines for corrective measures)	

Conflict-Free Smelter Program (CFSP)	
Rigor or flexibility of the standard model for compliance	<p>Example Gold: There are five different potential outcomes for audits concerning the appropriate documentation of material sources:</p> <ol style="list-style-type: none"> 1. Refiner is refusing audit participation = non-compliant 2. Conflict material-gold-bearing source was received or purchased (Level 3 source without appropriate Level 3 assessment) = non-compliant 3. Insufficient documentation to prove the source of all gold-bearing materials received or purchased = non-compliant 4. Insufficient documentation to prove the source of all gold-bearing materials received or purchase → the refiner provides additional information within 2 months and a follow-up audit is completed within 1 month → complaint/ non-compliant 5. Adequate documentation is available and proves that all gold-bearing purchases/receipts were from non-conflict sources = compliant <p>If an internal management system is non-compliant, a corrective action plan has to be implemented and verified. Details of the plan are determined by the audit review committee of the CFSI and the refiner: The nonconforming material has to be removed from the electronics supply chain and documented changes to the internal management system have to be implemented within 3 months. If the same non-compliances occur the refiner is excluded from further CFSP participation.</p>
Provided documents and tools	<ul style="list-style-type: none"> • Introduction to the CFSP (2012) • CFSP Gold Supply Chain Transparency Smelter Audit Standard and Instruction (2012) • CFSP Supply Chain Transparency Smelter Audit Protocol for Tin and Tantalum (2013) / for Tungsten (2013) • CFSP Supply Chain Transparency Smelter Audit Procedure for Tungsten (2013) • CFSP Supply Chain Transparency Smelter Audit Procedure for Tin and Tantalum (2014) • Extended Corrective Action Plan (excel sheet, ECAP, 2015) • Corrective Action Plan, template (CAP, 2016) • Pre-Audit Checklist (excel sheet, year unknown) • Agreement for the Exchange of Confidential Information (2016) • Auditee Agreement (2016) • Line-Item Summaries for tin, tungsten, tantalum and gold (excel sheet, year unknown) • CFSP Risk-Based Audit Program (2015) • CFSI Grievance and Complaints Mechanism (2016)
Number of quoted international conventions and other guidance	(1) < 10
Referral to other standards for more information or guidance	(1) Yes Standard industry audit procedures compliant with ISO 19011 OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas
Recognition of other standards for the proof of compliance of certain issues	(1) Yes: Cross-recognition agreement with RJC and LBMA for independent 3rd-Party gold refiner audits to reduce duplication and support their efforts in implementing the OECD Due Diligence Guidance and complying with the responsible sourcing legislation: <ul style="list-style-type: none"> • London Bullion Market Association (LBMA): LBMA Responsible Gold Guidance • Responsible Jewellery Council (RJC): Chain-of Custody Standard (provision 10 only)
Assessment of Standard Compliance and Transparency of the Results	
Subject-Matter of the conformity assessment	<p>Example Gold: First, refinery information and a copy of the policy and internal management system related to the procurement of gold-bearing material will be reviewed by the auditor against Part B of the audit protocol. A total gold material balance is calculated to determine if the reported receipts of gold, inventories and sales volume figures are reasonable. The auditor summarized the total gold receipts by country and mine of origin (CFSP Line-Item Summary) and compares it to the plausibility tables provided by CFSI.</p>

Conflict-Free Smelter Program (CFSP)	
Subject-Matter of the conformity assessment	Samples of transaction documents get reviewed as well. For material from Level 3 countries, the auditor reviews the refiner's assessment ("On the Ground Assessment Description"). Afterwards, the auditor verifies lot traceability by choosing at least 3 finished lots and follow back the documentation to the sources. A summary report is prepared by utilizing the Summary Template. Importantly, CFSP does not independently audit smelters and upstream processors that supply materials to refiners because they are managed through the refiners' internal management systems. The management system must be used to inquire, investigate, identify, approve and document the sources of gold. However, if those supplying refiners and smelters are not found compliant under CFSI or a cross-recognized program, auditee has to demonstrate extra due diligence in their customer selection/management.
Type of conformity assessment (audit)	(2) Verification
Auditor status and frequency of audits	(3) 3 rd Party: <ul style="list-style-type: none"> • Yearly: Standard audit period for CFSP smelters • Every three years: Audit period for smelters in Risk-Based Audit Program and TI-CMC members
Assessment elements	(1) Self-Assessment (Pre-Audit Checklist) (2) Document analysis (3) Site inspection (4) Interviews with workers, managers, etc. Also included: LIS review and Mass Balance Calculation, Audit Report and CAP (post-audit)
Grievance mechanisms for auditor decisions	(1) Yes <ul style="list-style-type: none"> • Appeals are submitted to the Grievance and Complaints Mechanism page. It is determined whether the appeal could be resolved without establishing an Appeals Panel (AP) through bilateral discussions or optional with mediation. • The QPM (Quality Program Manager) shall acknowledge receipt of the appeal and confirm the acceptance or rejection of an appeal, based on the seriousness (green, yellow, red). • An AP is established on each occasion that an appeal is lodged against a decision of the CFSI and the appeal is accepted by the QPM. The AP takes reasonable measures, including the convening of one or more sessions, deemed necessary for a sound judgment. The AP examines the evidence substantiating the appeal and report its evaluation and final decision to the QPM. The AP decides on the appeal by consensus. If the Appeals Panel is not able to reach a decision by consensus it takes a vote, with the decision being taken by simple majority. • The written decision of the final determination of the Appeals Panel is signed or confirmed electronically by all members of the Appeals Panel and submitted to the QPM. The appeal decision is documented by the QPM and communicated to the Appellate.
Whistle-blowing mechanism for standard non-compliances	(1) Yes Same as grievance mechanism The CFSI Grievance and Complaints Mechanism details information on the incident intake process and resolution. The purpose of this document is to outline a process which members, stakeholders and the public can utilize to raise concerns about the initiative, the audit program, protocols, smelter and refiner operations that fall in scope of the CFSP, audit quality and auditor competencies, mineral supply chains and upstream/downstream initiatives.
Party publishing the results	(1) Standard initiative CFSI publishes the list of CFSP smelters and refiners with the compliance status and CFSI members publish aggregated country of origin information (tin/tantalum: Low Risk, High Risk, DRC, Recycle/Scrap, gold/tungsten: Level 1–3 countries). (2) Company Smelters have to publish their Supply Chain Policies, the CFSP Audit Summary Report and the OECD Step 5 Due Diligence Report (Annex V, new Sn/Ta protocol).

Conflict-Free Smelter Program (CFSP)	
Degree of detail of the published results	<p>(1) Summarized results</p> <p>Details of the audits are only used internally by the CFSI audit review committee. Publicly disclosed is the following information:</p> <p>Gold and tungsten protocols (currently not yet revised):</p> <ul style="list-style-type: none"> • names of the compliant refineries • each refiner's Conflict Mineral Policy • consolidated information from all audits: <ul style="list-style-type: none"> – Level 1: Countries of origin – Level 2A: Countries of origin, mines of origin, import and export routes – Level 3: Level 2B information including weights of ore and capacity of mines <p>New tin and tantalum protocol (currently under revision):</p> <ul style="list-style-type: none"> • Supply Chain policy • CFSP Audit Summary Report • OECD Step 5 Due Diligence Report (Annex V) with recommended reporting categories: <ul style="list-style-type: none"> – Smelter Introduction – Audit Summary – Risk Identification Method (process, scope, sources, results) – Risk Response (strategy, activities, results) – Description of activities for continual improvement – Description of other issues and/or risks as appropriate
List of References	
<ul style="list-style-type: none"> • http://www.conflictreesourcing.org/ • http://www.eiccoalition.org/ • http://www.tanb.org/index • Conflict-Free Sourcing Initiative (2012): <i>Conflict-Free Smelter Program (CFSP) – Smelter Introductory Training and Instruction Document</i>. Available online at http://www.conflictreesourcing.org/media/docs/CFSI_CFSP_SmelterIntroduction_ENG.pdf, accessed 20.08.2016 • Conflict-Free Sourcing Initiative (2012): <i>CFSP Gold Supply Chain Transparency Smelter Audit Standard and Instruction</i>. Available online at http://www.conflictreesourcing.org/smelter-introduction/, accessed 25.01.2017 • Conflict-Free Sourcing Initiative (2013): <i>CFSP Supply Chain Transparency Smelter Audit Protocol for Tungsten</i>. Available online at http://www.conflictreesourcing.org/smelter-introduction/, accessed 25.01.2017 • Conflict-Free Sourcing Initiative (2015): <i>Conflict-Free Smelter Programme</i>. Available online at http://www.conflictreesourcing.org/conflict-free-smelter-program, accessed 20.08.2016. • Conflict-Free Sourcing Initiative (2016): <i>About the Conflict-Free Sourcing Initiative</i>. Available online at http://www.conflictreesourcing.org/about/, accessed 25.08.2016. • Conflict-Free Sourcing Initiative (2016): <i>Grievances & Complaints Mechanism</i>. Available online at http://www.conflictreesourcing.org/conflict-free-smelter-program/grievances-and-complaints-mechanism/, accessed 25.08.2016. 	

Certified Trading Chains for Tin, Tantalum and Gold (DR Congo)

Certified Trading Chains (CTC) as adapted in the DR Congo	
Background Information	
Initiators of the scheme	The basic CTC concept was developed by the German Federal Institute for Geosciences and Natural Resources (Bundesanstalt für Geowissenschaften und Rohstoffe, BGR) as a pilot project in Rwanda from 2007–2011. In developing and piloting CTC, BGR demonstrated the feasibility of certification of responsible mining practice in an artisanal mining setting in response to international discussions about certification in Eastern/Central Africa ¹⁶ The DR Congo adopted the basic CTC concept of the BGR within a bilateral German Congolese cooperation project starting in 2009. To this end, the DRC-adapted CTC requirements were included in two national certification manuals (for stanniferous 3T minerals and gold, respectively) in 2011. The following evaluation only refers to the country-specific modalities of CTC in the DRC (rather than CTC in a general sense).
Administrative body	There is no responsible standard initiative because the CTC concept foresees that governments and their mining authorities adapt the basic CTC concept and integrate it in their national processes for responsible mining and traceability. Administration and funding on the long run underlies the responsibility of the country's institutions.
Founding date and location	There is no "classical" responsible standard initiative – the Ministry of Mines is the responsible public institution.
Publication of the first standard version	2011 (Kinshasa, DR Congo), Manual for the Certification of Ores in the Tin Industry in the Democratic Republic of the Congo – Principles, Guidelines and Standards (Note: there is a corresponding Manual for Gold)
Up-to-date standard version and next revision	2011, Manual for the Certification of Ores in the Tin Industry in the Democratic Republic of the Congo – Principles, Guidelines and Standards, next revision: planned for 2017
Background of the scheme	(3) Scheme is governed by a public institution and positioned in legal regulations
Stakeholder groups in a) first standard-setting b) latest revision (if applicable)	The consultant Prof. Jim Freedman was contracted for developing the basic standard suitable to ASM in the Rwandan context including Rwandan legislation and various international standards, primarily the OECD "integrity instruments" ¹⁷ (outlining 23 potential CTC requirements). For the adaption to the Congolese context, a certification working group was composed of experts of the Congolese mining ministry and of the BGR which lead to a reduction and refinement of 21 CTC requirements. (1) Civil society (2) Private sector (3) Public institutions (a)
Subject-Matter of the Standard	
Main objective	The original CTC concept by the BGR is a mining standard on social, environmental and governance aspects especially suitable for selected mineral supply chains related to the artisanal mining sector. After adapting the basic CTC concept to the respective country regulatory framework, on the long run partner countries are expected to run the certification schemes autonomously as a mechanism for improving performance of their mining sectors. Gradual implementation of CTC in pilot supply chains can help transforming the informal sector of mineral production and marketing into a regulated sector which respects national laws and international norms and generates revenues for the state.

¹⁶ In 2005, the UN Group of Experts on the DR Congo recommended a pilot project upon the introduction of a traceability and certification system for precious metals in the Great Lakes region. The International Conference on the Great Lakes Region (ICGLR) adopted the Pact on Security, Stability and Development in 2006 which also foresees a Regional Mineral Certification Mechanism (RCM) against the illegal exploitation of natural resources. In 2007, at the G8 summit in Heiligendamm, Germany therefore expressed its support for a pilot project for selected raw materials in Rwanda which was run from 2009 to 2011.

¹⁷ The Guidelines for Multinational Corporations (2000), The Risk Awareness Tool for Multinational Enterprises in Weak Governance Zones (2006)

Certified Trading Chains (CTC) as adapted in the DR Congo	
Main objective	In relation to legal trade, CTC creates transparency about the origin and traceability of minerals, the supply chain actors involved, prohibits illegal taxation and conflict financing and makes transparent if the required payments to public authorities are made. CTC complements the OECD guidance on supply chain due diligence in adding a dimension of responsible sourcing beyond the management of conflict risks and worst human rights violations. In engaging in CTC supply chains, mineral buyers may demonstrate responsible practice, improve supply security and mitigate reputational risks.
Target commodities	The four “conflict minerals”: gold and the ores from tin, tungsten and tantalum (stanniferous mineral concentrates cassiterite, wolframite, columbite-tantalite)
Application of the standard along the supply chain	Upstream pilot supply chains: from mine to export (minimum), ideally down to an international mineral buyer (CTC focuses on responsible mining and traceability as a requirement for mining in general, while the Congolese certification manual declares in detail the requirements for traceability along the supply chain. Beyond that, the principles of the OECD Due Diligence Guidance should be applied in a cross-cutting sense as per Congolese law)
Proof of origin	(1) Yes Traceability is established through declaration of origin, identification of specific mine sites, type, weight and volume of the produced and marketed minerals by producers and buyers from pit to exportation and appropriate tracking of documents and control of the quantities in question. Moreover, producers and buyers have to accept potential independent audits by third parties. Among others, these audits verify the plausibility of claimed mineral production in a given supply chain. The detailed traceability requirements for the various supply chain stages are provided in the Annex 3 of the DRC certification manual and each stage involves various authorities (Mining Administration, SAESSCAM, CEEC etc.) and documents to be submitted/issued, among other requirements.
Assessment unit	(2) Selected facilities: selected mine sites An overall assessment (sampling approach) is conducted for the various mine sites of an organization which are intended for CTC certification/certified exportation.
Geographic focus	(1) National: The CTC concept is implemented within a development cooperation project in the DR Congo through developing adapted national standard versions. The scheme is not supposed to operate sector-wide but focuses on a limited number of pilot supply chains (e.g., closed pipes). However, in setting national mining standards CTC aims to positively impact on artisanal mining performance at a broader scale.
State of implementation	<ul style="list-style-type: none"> Since 2011, mining organizations in the seven provinces North- and South-Kivu, Maniema, Bas Uele (former Orientale) and Tanganyika, Lualaba, Haut-Lomami (former Katanga Province) have been audited within the German-Congolese development cooperation project implemented by BGR. In 2016, three sectors¹⁸ (13 mining sites with coltan and cassiterite) are officially certified after passing the Compliance Audit successfully (about 3000 workers) but another four sectors (52 mining sites with coltan and cassiterite, about 4000 workers) are expected to be announced by the Minister of Mining in 2016. In case all seven sectors are granted a certification, 65 instead of 13 mining sites would be certified by the end of 2016. So far 17 Baseline Audits and 9 Compliance Audits have been finalized. From 2012–2014 six audits were conducted by a third party audit provider and in 2014, another 15 audits were commissioned. The mining organizations are selected for audits by a joint nomination by a national certification working group (COCERTI) and BGR. In order for a mine to be included in CTC, pre-qualification is required. This includes demonstrating a minimum degree of formalization and a positive assessment (i.e. conflict-free status and associated red-yellow-green classification) by the „Equipe Conjoint“ under the auspices of the UN mission to the DRC.

¹⁸ The sectors are defined by the Congolese government and refer to certain administrative areas, which comprise several mining sites on which one or several cooperatives can be active. Within a sector, a cooperative can be audited alone or in combination with a partnering mining company. Less frequently, several cooperatives are active within one sector and audited to-gether within one audit report.

Certified Trading Chains (CTC) as adapted in the DR Congo		
Membership program	(2) No	
Recent developments	<ul style="list-style-type: none"> Given the large number of parallel initiatives implemented in the DRC (e.g., iTSCi, ICGLR RCM, CTC, other pilot and closed pipe supply chains by industry) CTC has a challenge to clarify its role with regards to these other initiatives. iTSCi and the ICGLR RCM aim to facilitate conflict-risk management and mineral traceability as a base for the legal export of minerals subject to international due diligence regulations. CTC, in contrast, aims to certify responsible mining practice “beyond conflict” while also strengthening other initiatives (e.g., through more robust verification procedures). National stakeholders in the DRC often do not clearly differentiate these two objectives, leading to the perception of “audit fatigue” at some mine sites. Mining cooperatives may primarily be interested in ensuring the legal exportability of their minerals which can be achieved by implementing the regional minimum standards and procedures defined by the ICGLR RCM and iTSCi. CTC was not developed with the sole purpose of being a mineral certification scheme. Instead, the CTC approach foresees supporting artisanal miners in meeting the standard requirements. This is done by planning a minimum of two audits per mine site (and associated supply chain). The baseline audit serves to collect basic information and makes specific recommendations to improve performance in different sustainability aspects (e.g. traceability, health and safety, environmental management etc.). The compliance audit, typically taking place one year later, shall then verify performance against the standard and, if satisfactory, lead to certification of the mine site. It is necessary for BGR and its Congolese partners to dedicate more attention to supporting the improvement process between baseline and compliance audit. BGR trains counterparts of the mining ministry to become governmental mine inspectors which will inspect mine sites independently from the CTC audit process. This step shall lead to a more continuous engagement at a given CTC mine site while also facilitating a broader uptake of CTC principles beyond certified pilot supply chains. Originally, BGR and the DR Congo published two manuals, for 3T ores and gold, respectively. However, CTC implementation initially (starting 2011) focused on the 3Ts. Gold has been more actively included in CTC starting 2014. In the future, BGR will enter discussions with the DRC Ministry of Mines regarding the potential revision of the CTC scheme. At this stage, it shall also be evaluated whether a single CTC manual should be developed, or whether separate manuals shall continue to exist. In each case, it may be necessary to reflect on including additional minerals (such as cobalt) into the scheme. 	
Requirements of the Standard		
Summarized standard requirements	Environmental issues	<ul style="list-style-type: none"> Environmental Impact Study and Management Plan Environmental Management System with regular reviews System for the treatment and management of chemical, toxic and dangerous substances and waste rock Mining and land rights and titles based on consultation with local communities and authorities and conflict solving mechanism
	Social and societal issues	<ul style="list-style-type: none"> Remuneration equal or higher than average wages and regular Prohibition of child labour below 15 years (as per Congolese law) Workers’ right of association and collective bargaining Appropriate safety and production equipment available and used Health and safety training and qualified trainers Qualified security and safety staff for the mine site and community from the public or private sector with sufficient training Risk evaluation of various work places to define a safety policy and training plan Consultations with representatives of communities and the local authorities to resolve conflicts and other preoccupations Integrated development plan for the improvement of social services, security and infrastructure Study on impacts on women and improvement strategy Closure Plan in accordance with the Mining Law

Certified Trading Chains (CTC) as adapted in the DR Congo		
Summarized standard requirements	Corporate Governance and Trade	<ul style="list-style-type: none"> Traceability of the minerals (declaration of origin, weight and volume of production) throughout the upstream supply chain Allow potential sampling for the Analytical Fingerprint (AFP) method for 3T ore concentrates Payment of all applicable taxes, levies, fees and other dues provided for by law Proof for the payment of taxes, levies, fees and other dues are published in accordance to international standards (e.g. EITI) Prohibition of support for criminal organizations Refusal to illegal funding of political organizations Policy and prohibition of corruption and fraud for managers and employees and suppliers Procurement of materials and products from small and middle-sized local enterprises Funds for the rehabilitation of the site after closure in accordance with the stipulations of the Mining Law and Regulation, regular review
Rigor or flexibility of the standard model for compliance		(1) Obligatory standard catalogue (incl. incremental requirements) The auditor is provided with five “level descriptors ¹⁹ ” for each of the 21 requirements which, from a scale of 0–4, represent increasing compliance with a given requirement. 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 certain “do or die” requirements (such as traceability).
Provided documents and tools		<ul style="list-style-type: none"> Manual for the Certification of Stanniferous (3T) Ores in the Democratic Republic of the Congo – Principles, Guidelines and Standards (2011) by DR Congo Manual for the Certification of Auriferous (gold) Ores in the Democratic Republic of the Congo – Principles, Guidelines and Standards (2011) by DR Congo Auditor Guidelines by BGR (french only): Complément d’informations au manuel de certification CTC de la filière artisanale stannifère de la RDC (2014) Pilot Project on Certification of Minerals Produced in Rwanda (2008) by BGR Project Review: Implementing Certified Trading Chains (CTC) in Rwanda (2011) by BGR FICHE D’INSPECTION MINIERE from DR Congo and ICGRL (2013) (for mine inspections outside of CTC) CTC Standard Criteria Rwanda (2010)
Number of quoted international conventions and other guidance		(1) < 10
Referral to other standards for more information or guidance		(1) Yes <ul style="list-style-type: none"> International Finance Corporation (IFC): EHS Directive for Environment, Health, Safety and Mining Operations International Cyanide Management Code (ICMC) ITRI Tin Supply Chain Initiative (iTSCi) ISO 9000, ISO 14000, ISO CSR EITI criteria Forest Stewardship Council Principles 5.4
Recognition of other standards for the proof of compliance of certain issues		(1) Yes CTC recognizes the iTSCi scheme as a means for ensuring traceability along the supply chain, although CTC audits verify the functionality and plausibility of the scheme in a given pilot supply chain. Beyond that, CTC does not formally recognize other schemes operative in the DRC because these schemes are younger than CTC (and, hence, were not available at the time of CTC development). At a working level, the CTC process is coordinated with the ICGLR RCM process in that CTC auditors additionally use a checklist referring to the ICGLR RCM standards. While this does not constitute a part of the audit process and CTC certification <i>sensu stricto</i> , it does provide for a certain synergy effect in practice.

¹⁹ Level descriptors are descriptions of the actions and measures taken by the organization which can indicate a certain compliance level to the auditor.

Certified Trading Chains (CTC) as adapted in the DR Congo	
Assessment of Standard Compliance and Transparency of the Results	
Subject-Matter of the conformity assessment	There are two types of audits: The Baseline Audit and the Compliance Audit. The Baseline Audit determines strengths and weaknesses of each individual mineral producer and is the base for the formulation of improvement recommendations. Technical assistance to mineral producers and their clients, e. g. to meet the improvement recommendations, is so far provided by BGR. The Compliance Audit provides evidence for the degree of implementation of the improvement recommendations at the various mineral producers within one sector and assures compliance only for those successfully passing the audit (on average at least scoring 2.5). Despite one recertification in 2016, there is no system yet for regular recertification for cases where a successful CTC compliance audit dates back more than 3 years (the validity period of the CTC certificate).
Type of conformity assessment (audit)	(3) Verification and certification
Auditor status and frequency of audits	(3) 3 rd Party (frequency not standardized yet; in theory, recertification is required after 3 years, corresponding to the validity period of a given CTC certificate)
Assessment elements	(2) Document analysis (3) Site inspection (4) Interviews with workers, managers, etc.
Grievance mechanisms for auditor decisions	(1) Yes Only holders of the mining title – not mine operators – are attributed a say before the auditor decides about the final assessment result and submits the audit report at the respective governmental institution.
Whistle-blowing mechanism for standard non-compliances	(2) No
Party publishing the results	(1) Standard initiative BGR publishes the summaries of the audit reports on behalf of the DRC and has the role of the administrator due to its role as a cooperation partner and in the absence of a classical standard initiative. In 2016, there are currently 9 Baseline Audit Summary Reports and 4 Compliance Audit Summary Reports available on the BGR website.
Degree of detail of the published results	(2) Results about single standard requirement For each of the 21 requirements under the CTC of the DRC a separate assessment by the level indicators from 0 to 4 is given for each cooperative in one sector. If not all cooperatives or mineral producers within one sector are compliant to the same degree, the audit results are differentiated per producer.
List of References	
<ul style="list-style-type: none"> • http://www.bgr.bund.de/EN/Themen/Min_rohstoffe/CTC/Mineral-Certification-Rwanda/Implementation/implementation_rw_node_en.html • Bundesanstalt für Geowissenschaften und Rohstoffe (2016): <i>Mineral Certification at the BGR</i>. Web-Portal that summarizes all public information and data (incl. audits) on the CTC scheme in the DRC and Rwanda. Available online at http://www.bgr.bund.de/mineral-certification • Bundesanstalt für Geowissenschaften und Rohstoffe (2010): <i>CTC standard criteria Rwanda. Information on individual criteria and their respective international reference</i>. Available online at http://www.bgr.bund.de/EN/Themen/Min_rohstoffe/CTC/Downloads/CTC_standard_criteria_Rwanda_en.pdf?__blob=publicationFile&v=2 • Franken, G., Vasters, J., Dorner, U., Schütte, P., Küster, D., Näher, U. (2015): <i>Certified Trading Chains in Mineral Production</i>. In: Harthard, S. & Liebert, W. (eds.), <i>Competition and Conflicts on Resource Use, Natural Resource Management and Policy</i>, DOI 10,1007/978-3-319-10954-1_12. Available online at http://www.springer.com/de/book/9783319109534 • Bundesanstalt für Geowissenschaften und Rohstoffe (2011): <i>Project Review: Implementing Certified Trading Chains (CTC) in Rwanda</i>. Available online at http://www.bgr.bund.de/EN/Themen/Min_rohstoffe/CTC/Mineral-Certification-Rwanda/Downloads/downloads_rw_node_en.html, accessed 08.11.2016. 	

Certified Trading Chains (CTC) as adapted in the DR Congo

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- Priester, M. & Franken, G. (2015): *Zertifizierung im Kleinbergbau im Ostkongo – Erfahrungen aus der Auditierung von Tantal-Minen (certification of artisanal and small-scale mining in the eastern DR Congo – lessons learnt from auditing of tantalum mines; original in German)*. World of Mining, Surface & Underground 67 (2015), No. 1.

International Cyanide Management Code for Gold

The International Cyanide Management Code (ICMC) for the Manufacture, Transport and Use of Cyanide in the Production of Gold and Silver

Background Information

Initiators of the scheme	Under the guidance of the United Nations Environmental Program (UNEP) and the International Council on Metals and the Environment (ICME) (International Council on Metals and Mining in 2001) the Code was developed by a multi-stakeholder Steering Committee. Funding was provided by the gold mining and cyanide production industries.
Administrative body	International Cyanide Management Institute (ICMI)
Founding date and location	2003, Washington D.C, USA
Publication of the first standard version	The Cyanide Code's Principles and Practices (2002) (2005: assurance documents were finalized and the implementation of the Cyanide Code program started)
Up-to-date standard version and next revision	The International Cyanide Management Code (2014), next revision: conducted in the light of current events
Background of the scheme	(1) Scheme has exclusively been established for the standard development and implementation
Stakeholder groups in a) first standard-setting b) latest revision (if applicable)	(1) Civil society (a) (2) Private sector (a) (3) Public institutions (a)
Subject-Matter of the Standard	
Main objective	The International Cyanide Management Code represents a voluntary best practice standard for the safe management of cyanide within cyanide production, cyanide transportation and cyanide use in gold recovery and in mill tailings and leach solutions. It aims at protecting human health and environment from adverse cyanide impacts. Be aware, that the code doesn't address some other safety or environmental activities of gold mining operations, such as the design and construction of tailings impoundments, long-term closure and rehabilitation of mining operations.
Target commodities	Gold extracted using cyanide (cyanide-ion, hydrogen cyanide, cyanide complexes and salts with different metals in solids and liquids); in 2016 it was announced that from 2017 on also primary silver mines using cyanide will be included
Application of the standard along the supply chain	Gold/silver mining companies using cyanide, and the producers and transporters of the cyanide used

The International Cyanide Management Code (ICMC) for the Manufacture, Transport and Use of Cyanide in the Production of Gold and Silver	
Proof of origin	(2) No traceability system since the focus is on mining and cyanide-related suppliers of mining
Assessment unit	(2) Selected facilities: selected mine sites, cyanide production plants or carriers
Geographic focus	(2) Global: 50 countries in South and North America, Europe, Africa, Asia, Australia
State of implementation	<ul style="list-style-type: none"> • In 2015, 30 of the top 40 primary commercial gold mines using cyanide participate in the Cyanide Code and 83 % of them are certified. By the end of 2015, 59 % of certified operations have been recertified at least once. 52 operations have been audited three times (their initial audit plus two triennial follow-up audits). • The exact number of participants for year 2015: <ul style="list-style-type: none"> 179 Signatory Companies: <ul style="list-style-type: none"> – Gold mining companies: 43 – (producing < 25.000 ounces up to 6M ounces²⁰) – Cyanide producers: 22 – Cyanide transporters: 114 • 246 Certified operations in 41 countries: <ul style="list-style-type: none"> – Gold mining companies: 97 – Cyanide-producers: 28 – Cyanide-transporters: 121 • 146 Recertified operations in 31 countries: <ul style="list-style-type: none"> – Gold mining companies: 69 – Cyanide-production plants: 19 – Cyanide-carriers: 58
Membership program	(2) No Companies can become signatories of the Code to commit to follow the Code's Principles and Standards of Practice and can decide which operations they bring into compliance.
Recent developments	<ul style="list-style-type: none"> • 2015 is the tenth year of the Cyanide Code program implementation and "net participation" continues to grow despite the falling gold prices since 2012 and the accompanying changes in the gold sector and even though there were also resignations. Withdrawals can be due to depleted ore reserves, divestment of operations, loss of transport contracts or the inability to meet the Code requirements. None of the 68 conducted audits in 2015 were disputed by stakeholders. • In 2015, only two incidents related to cyanide were reported at certified operations. In one case, a worker was ill from apparent cyanide intoxication but was successfully treated. In the other case, a faulty valve leaked cyanide into a stream without any reported injuries. Both events are reviewed and their impact on compliance considered during the next operations' recertification audits. • The consistency of the audits was validated in 2009 and approved acceptable so that no adoptions were necessary. 2014 modifications were introduced to motivate continued participation of the companies. For the case of difficulties of standard compliance there is a new "non-compliant" status and for reactivation of closed projects there is a new "re-admittance" procedure. • Silver mining companies with primary silver mines were included in 2016/17. The majority of silver produced worldwide is produced as a by-product from lead, zinc, and copper mines, where sodium cyanide is not used as the lixiviant. In 2015, silver from primary silver mines accounted for about 30 % of global silver production.

²⁰ Distribution of signatory gold mines: 24 % companies with > 1M ounces, 21 % companies with 200.00–1M ounces, 31 % companies with 100.000-200-000 ounces, 24 % companies with no production yet.

The International Cyanide Management Code (ICMC) for the Manufacture, Transport and Use of Cyanide in the Production of Gold and Silver		
Requirements of the Standard		
Summarized standard requirements	Environmental issues	<ul style="list-style-type: none"> • Cyanide purchasing • Policy for safety and prevention of contamination • Security agreement with producers and transporters • Design and construction of plants for unloading, storage and mixing • Operation and inspection of plants • Preventive measures against employee exposition • Management-/operational systems for the minimization of cyanide consumption and for protection of health and environment • Water management program • Protection of wild animals and fishes • Leak management • Overflow prevention and catch basins • Quality control and safety procedures • Monitoring programs for wildlife and surface and groundwater quality • Decommissioning of cyanide plants: plans and implementation • Detailed emergency plans, incl. monitoring and remediation and emergency training
	Social and societal issues	<ul style="list-style-type: none"> • Employee trainings concerning dangers, risks, right handling and safety measures • Stakeholder communication about the cyanide management processes and environmental information related to the use of cyanide • Openness to dialogue in case of concerns of stakeholders • Involvement of employees and stakeholders in the development process of emergency plans • Exposition scenarios and measures related to elimination and control • Operation and monitoring of cyanide plants for the employees' health and safety • Evaluation of effectiveness of health- and safety measurements • Development and implementation of emergency reaction plans for employee exposition • Safety personnel and resources • Regular evaluation of reaction plans and resources and revision if necessary • Processes for internal and external emergency notification and reporting
	Corporate Governance and Trade	<ul style="list-style-type: none"> • Mechanism for establishing future financing of decommissioning activities related to cyanide
Rigor or flexibility of the standard model for compliance	(1) Obligatory standard catalogue (incl. incremental requirements) In case of substantial but not full compliance with the Code a conditional certification is issued and a "Corrective Action Plan" must be implemented within one year to achieve full compliance.	
Provided documents and tools	<ul style="list-style-type: none"> • Code's Principles and Standards of Practice (website text) • Code's Production or Transport Practices in the respective verification protocol • Implementation Guidance (website text) • Auditor Criteria (2015) • Use of the Cyanide Code logo (website text) • Signatory fees (website text) • Auditing documents: <ul style="list-style-type: none"> • Verification Protocols: <ul style="list-style-type: none"> • Gold Mining Verification Protocol (2009) • Gold Mining Pre-operational Verification Protocol (2009) • Cyanide Production Verification Protocol (2011) • Cyanide Production Pre-operational Verification Protocol (2011) • Cyanide Transportation Verification Protocol (2009) • Cyanide Transportation Pre-operational Verification Protocol (2011) • Corrective Action Plan Requirements (2014) • Auditor Guidance for Gold Mines (2012) 	

The International Cyanide Management Code (ICMC) for the Manufacture, Transport and Use of Cyanide in the Production of Gold and Silver	
Provided documents and tools	<ul style="list-style-type: none"> • Auditor Guidance for Cyanide Transportation (2011) • Guidance for Recertification Audits (2016) • Summary Audit Forms: Gold Mining Operations Summary Audit Report Form (2012) Cyanide Production Summary Audit Report Form (2012) Cyanide Transportation Summary Audit Report Form (2012)
Number of quoted international conventions and other guidance	(3) > 20 (voluntary implementation guidance)
Referral to other standards for more information or guidance	(1) Yes <ul style="list-style-type: none"> • International Standards Organization: ISO 14000 • British Standard BS 7750 • European Community's Eco-Management & Audit Scheme (EMAS)
Recognition of other standards for the proof of compliance of certain issues	(2) No
Assessment of Standard Compliance and Transparency of the Results	
Subject-Matter of the conformity assessment	<p>"The Code's Principles apply broadly to gold mines, cyanide producers and cyanide transporters, while its Standards of Practice are specific to gold mines. Cyanide Production and Transport Practices developed specifically for these types of activities have been included in their respective Verification Protocols. [...] The specific means of implementing the Cyanide Code described in [the] guidance document are not mandatory in order for an operation to become certified as Cyanide Code compliant. An operation can achieve certification if it is able to demonstrate that its methods achieve the performance goal as stated in the Standard of Practice." Also on the basis of plans a "pre-operational" audit is possible, followed by an on-site audit within one year of the mine's first receipt of cyanide.</p>
Type of conformity assessment (audit)	(3) Verification and certification The Cyanide Code logo can be used in case of full compliance.
Auditor status and frequency of audits	(3) 3 rd Party (every 3 years; within 2 years of change in ownership)
Assessment elements	(2) Document analysis (3) Site inspection (4) Interviews with workers, managers, etc.
Grievance mechanisms for auditor decisions	(1) Yes <ol style="list-style-type: none"> a) Informal resolution between affected parties b) Non-binding mediation by independent mediator c) Binding arbitration by independent arbitrator
Whistle-blowing mechanism for standard non-compliances	(1) Yes <ol style="list-style-type: none"> a) Informal resolution between affected parties b) Non-binding mediation by independent mediator c) Binding arbitration by independent arbitrator
Party publishing the results	(1) Standard initiative For each signatory company and its selected audited mine sites the Summary Audit Reports, Auditor Credentials, potential Corrective Action Plans and Completion Report are published on the Code's website on the companies' subpages
Degree of detail of the published results	(2) Results about single standard requirement In the Summary Audit Report single results are published for each of the 31 Standards of Practice. However, the more detailed results in the Detailed Audit Findings Report are not published.
List of References	
<ul style="list-style-type: none"> • www.cyanidecode.org • International Cyanide Management Institute (2012): <i>Auditor Guidance for Use of the Gold Mining Operations Verification Protocol</i>. Available online at http://www.cyanidecode.org/sites/default/files/pdf/RevisedAuditorGuidance.pdf, accessed 08.24.2016. 	

The International Cyanide Management Code (ICMC) for the Manufacture, Transport and Use of Cyanide in the Production of Gold and Silver

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Fair Stone International Standard for the Natural Stone Industry

Fair Stone – International Standard for the Natural Stone Industry

Background Information	
Initiators of the scheme	The Fair Stone Standard was developed in 2007 by WiN=WiN GmbH, an agency for global responsibility, in close cooperation with a German natural stone trader, experts of the International Social Security Association (ISSA) and international work and social rights experts. The project was co-financed by the Federal Ministry for Economic Cooperation and Development (BMZ) in the context of a develoPPP.de-Project.
Administrative body	Fair Stone e. V.
Founding date and location	2014, Kirchheim unter Teck, Germany
Publication of the first standard version	Standard version 1. from 2009
Up-to-date standard version and next revision	Standard version 6. from 2016, next revision: early 2016
Background of the scheme	Scheme has exclusively been established for the standard development and implementation
Stakeholder groups in a) first standard-setting b) latest revision (if applicable)	(1) Civil society (a) (2) Private sector (a) (3) Public institutions (a)
Subject-Matter of the Standard	
Main objective	The Fair Stone Standard mainly aims at eliminating child and forced labour, as well as improving workers' health and safety mainly at stone processing but also quarries through establishing long-term trading partnerships between European stone importers and the upstream supply chain in Asia. Fair Stone builds on continuous improvement of working conditions through building a trustful relationship between all involved parties. Also responsible public and private procurement is particularly addressed by the Fair Stone Program.
Target commodities	Natural stone
Application of the standard along the supply chain	Quarry up to the European stone importer/salesman with a current focus of standard implementation at the stone processing level. The Fair Stone Standard is divided into 5 parts for various supply chain actors: I. Fair Stone Social Standard for Quarries II. Fair Stone Social Standard for Stone Processing Factories III. Fair Stone Social Standard for the Chain of Custody IV. Fair Stone Standard for associated Partners V. Management System The importer (Fair Stone Partner) registers his suppliers (quarries, processors, exporters) at Fair Stone and agreements with Fair Stone are signed by each party.

Fair Stone – International Standard for the Natural Stone Industry	
Proof of origin	<p>(1) Yes</p> <p>The internet-based traceability system Tracing Fair Stone “allows to trace each stone back to the production facility – either by entering the order number which is attached to each packaging unit or by scanning the QR-Code with a smart phone app. Each order that shall be labelled is entered into the system by the Fair Stone Partner. The supplier adds missing information and updates each production step – from the processing in the factory to the shipment to the arrival at the final customer. This enables municipalities, traders, private customers and interested others to trace and track Fair Stone products” and monitor suppliers’ and partners’ activities. Already during the production process the information can be monitored. The label is allowed to be used as soon as the supplier signs the supplier agreement, every worker owns protective equipment, safety signs and fire extinguisher are put up, a clear material flow is given and the first health and safety training proceeded. Only such natural stone is allowed to be labeled which is entered into the traceability software. “The Partner is allowed to name successfully audited suppliers „Certified Fair Stone Supplier“.”</p>
Assessment unit in mining	<p>Either single facilities or whole companies or the whole supply chain can be registered:</p> <p>(1) Company: all facilities (quarrying and processing)</p> <p>(2) Selected facilities</p>
Geographic focus	<p>(2) Global:</p> <p>Currently: China (main focus), India, Vietnam</p>
State of implementation	<ul style="list-style-type: none"> • More than 50 processing companies and quarries are currently certified by Fair Stone.
Membership program	<p>(1) Yes</p> <p>Companies working with Fair Stone are distinguished into four forms of membership:</p> <ul style="list-style-type: none"> • Fair Stone Supplier: ~ 50 in China, 5 in India and 5 in Vietnam • Fair Stone Partner: 3 in England, 6 in Germany, 6 in Swiss • Fair Stone Associated Partner: 3 in Germany, 2 in Swiss • Fair Stone Supporter: 5 in China <p>Both types of Partners are allowed to use the Logo in sale, however, the Associated Partner is not importing stones himself. The Fair Stone Supporter are exporting companies who have at least one factory which fulfills the minimum criteria: Compliance with ILO Core conventions, OSH Workshop, Clear material flow, working water recycling plant, PPE and safety signs).</p> <p>Moreover, Fair Stone e. V. has a membership program with old steering group members, various experts and every natural or juristic person can apply for membership.</p>
Recent developments	<ul style="list-style-type: none"> • At the end of 2015, an inspection journey of Fair Stone representatives to 20 Chinese stone factories in Fujian and ShanDong was conducted – some of them at the beginning, some at the end of implementing the Fair Stone criteria. Though criteria were implemented well, there was still room for improvement at some factories concerning the quality and correct application of safety signs, respiratory masks, personal protective equipment and the ownership of factory managers. It was reported that much of the proper implementation depends on the nominated Fair Stone Coordinator at the factory level, however, the continuous engagement of the importer is also central. The presence of functional water treatment plants is increasingly verified and sometimes sanctioned by Chinese governmental inspectors. • A presentation was held in 2016, during the first International Sustainable Stone Conference in Carrara. The subject was “A European Culture using Natural Stone”. Another presentation was held on the Xiamen Stone Fair 2016 – the biggest trade fair for stone. • Additionally to decreasing demand of natural stone in 2015, the competitive pressure that natural stone producers face is increasing. The cost advantage of producing in China or India is decreasing due to the fast development of wages which on long-term is assumed to lead to a leveling of prices. For Portuguese stone this is already observed. • Due to a lack of interest, the Fair Stone Supporter concept may be cancelled in the beginning of 2017.

Fair Stone – International Standard for the Natural Stone Industry		
Requirements of the Standard		
Summarized standard requirements	Environmental issues	<p>Essential criteria:</p> <ul style="list-style-type: none"> • Functional water treatment plant <p>Environmental protection:</p> <ul style="list-style-type: none"> • Intervention into nature/Renaturation of quarries • Waste management • Water and energy consumption • Minimization of emissions (silica dust)
	Social and societal issues	<p>Essential criteria:</p> <ul style="list-style-type: none"> • Prohibition of exploitative child labour • Prohibition of forced labour • Improvement of working conditions <p>Labour Law:</p> <ul style="list-style-type: none"> • Prohibition of discrimination in employment • Labour contract • Working hours, rest and vacations • Wages • Social insurance <p>Occupational Safety and Health (OSH):</p> <ul style="list-style-type: none"> • Organizational preconditions regarding OSH • Risk assessment and prevention • Training and instruction (annual workshop conducted by FS representatives) • Maintenance and inspection • First Aid and prevention of fire • Personal Protective Equipment • Work place safety at quarries extraction • Silica dust and mineral dust • Noise and vibration • Hazardous substances • Machinery and facilities • Electrical appliances • Storage • Transport and lifting gear • Ergonomics at Work: Health Work Habits • Auxiliary • Shipping
	Corporate Governance and Trade	<p>Essential criteria:</p> <ul style="list-style-type: none"> • Legal compliance • Organisation of Standard Implementation • Traceability requirements and clear material flow • Information and complaints <p>Requirements for Fair Stone partners/Chain-of-Custody:</p> <ul style="list-style-type: none"> • General obligations • Accuracy and credibility of supply chain management • Marketing and use of the label • Reporting to Fairstone <p>Requirements for associated partners</p> <p>Structure of the Fair Stone management system:</p> <ul style="list-style-type: none"> • Support and control mechanism • External Audits • Association members, advisory board, external support • Marketing
Rigor or flexibility of the standard model for compliance	<p>A combination of “standard models” is applied by Fair Stone:</p> <p>(1) Obligatory standard catalogue (incl. incremental requirements)</p> <p>(2) Compulsory voting standard catalogue</p> <p>Prohibition of child and forced labour, as well as continuous improvement of working conditions are mandatory entry criteria which have to be complied to when signing the supplier agreement. A step-by-step improvement process guides the factory until the audit after 3 years and prepares it to successfully pass the audit (see <i>Subject-Matter of the conformity assessment</i>).</p>	

Fair Stone – International Standard for the Natural Stone Industry	
Rigor or flexibility of the standard model for compliance	The 3 rd party audit covers 73 screening criteria of which 12 mandatory criteria – 14 if workers are employed by sub-contractor – are defined as essential criteria. All essentials (met by 50 % which is 1 Point) and at least 90 points in sum and have to be fulfilled. The essential criteria consist of no child and forced labour, health and safety, trainings, traceability and clear material flow. In an individual Step-by-Step process additional criteria have to be complied with by the supplier. Compliance to single criteria is assessed with a 3-level system with “compliance” being further defined by the auditing body: 0 Point: < 50 % Compliance 1 Point: > 50 % Compliance 2 Point: > 70 % Compliance 3 Point: > 90 % Compliance In case the audit indicates non-compliance, the audit can be repeated within one year but just once.
Provided documents and tools	<ul style="list-style-type: none"> • Fair Stone International Standard for the Natural Stone Industry (2016) • Fair Stone directive about the Fairstone process (2015) • Fair Stone fees (2015) • Agreement of Cooperation for Fair Stone Suppliers (2015) • Agreement of Cooperation for Fair Stone Exporters (2015) • Fair Stone Complaints and Appeals (2016) • Implementation Step-by-Step Manual I and II (2015) • Country and journey reports, studies about child labour (various years) Tracing Fair Stone: <ul style="list-style-type: none"> • Step-by-Step Reporting Guidance (implementation of the Fair Stone criteria and reporting via software), only german (2012) • User’s Guides for the Tracing software for public procurement (2015), Partners (2015) and the supplier (2015) Fair Stone Audits: <ul style="list-style-type: none"> • Fair Stone Auditor’s Manual for Factories (2016) • Accreditation certificates of various Auditors (various years)
Number of quoted international conventions and other guidance	(1) < 10
Referral to other standards for more information or guidance	(2) No
Recognition of other standards for the proof of compliance of certain issues	(2) No The planned cooperation with XertifiX e. V. was given up.
Assessment of Standard Compliance and Transparency of the Results	
Subject-Matter of the conformity assessment	In the registration the supplier and partner commit to implementing the standard within 3 years within a Step-by-Step process: In the first year, there is a self-assessment year in form of three progress reports, which have to be submitted by the supplier. It focuses work safety and contracts and is equipped with indicators and steps to help implementation and serves as a base for the following controls. In the second year, measures about health and safety, management systems, time recording and wage payments have to be implemented. The third year has the concept of a self-audit: The supplier, partner and Fair Stone team conduct announced and unannounced inspections for the sake of verification at Asian factories as well as at European ports and storage facilities to monitor the implementation progress and to check the correct logo usage. The Fair Stone representative, the partner and the factory management agree upon next steps in the Fair Stone process. Every three years an accredited auditor assesses Standard compliance. The external audits are commissioned and paid for by the respective FS Partner (Importer) after a maximum of 3 years. Audits are conducted by TÜV Rheinland HKG or QS Zuerich Shanghai. An additional certificate is issued for supply chains which have passed an external audit, both by the external auditing company as well as Fair Stone. This certificate is issued to the Fair Stone Partner (European importer) only.

Fair Stone – International Standard for the Natural Stone Industry	
Type of conformity assessment (audit)	(3) Verification and certification
Auditor status and frequency of audits	(1) 1 st Party (yearly): Reporting to Fair Stone via progress report (2) 2 nd Party (“regularly”) (3) 3 rd Party (at first latest after 3 years, then every 3 years) There are announced and unannounced audits and inspections.
Assessment elements	(1) Self-Assessment (2) Document analysis (3) Site inspection (4) Interviews with workers, managers, etc.
Grievance mechanisms for auditor decisions	(1) Yes Via the auditors internal systems
Whistle-blowing mechanism for standard non-compliances	(1) Yes a) Complainant contacts Fairstone b) Fairstone calls for extraordinary meeting of members, a task-force will be created c) Task forces investigates and proposes a solution d) Board members make decision
Party publishing the results	(1) Standard initiative No audits results are being published due to the confidentiality of the registered supply chains. However, a list of Fair Stone Partners (European importers) is available including a map.
Degree of detail of the published results	No audits results are being published.

List of References

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ARM’s Fairmined Standard for Gold from Artisanal and Small-Scale Mining

Fairmined Standard for Gold from Artisanal and Small-Scale Mining, Including Associated Precious Metals	
Background Information	
Initiators of the scheme	Alliance for Responsible Mining (ARM)
Administrative body	Alliance for Responsible Mining (ARM)
Founding date and location	2004, Envigado, Antioquia, Colombia
Publication of the first standard version	Standard Zero from 2006 (the first global certification scheme ever for responsible Artisanal and Small-scale Gold Mining (ASGM) for fair trade gold and associated silver and platinum); Version 1.0 from 2009 (with Fairtrade International, their standards decoupled in 2013)
Up-to-date standard version and next revision	Version 2.0 from 2014, next review unknown

Fairmined Standard for Gold from Artisanal and Small-Scale Mining, Including Associated Precious Metals	
Background of the scheme	(1) Scheme has exclusively been established for the standard development and implementation
Stakeholder groups participating in a) first standard-setting b) latest revision (if applicable)	(1) Civil society (a,b) (2) Private sector (a,b) (3) Public institutions (a,b)
Subject-Matter of the Standard	
Main objective	The Standard is aimed at creating opportunities for artisanal and small-scale miners and their communities. It seeks promoting progressive organization and formalization of the artisanal and small-scale gold mining sector with implementation of efficient and socially and environmentally responsible mining practices through stakeholder alliances and collaborative work with the downstream supply chain.
Target commodities	Gold and associated precious metals, e. g. silver and platinum from small-scale and artisanal mining
Application of the standard along the supply chain	<p>The entire supply chain with different application of the standard:</p> <ul style="list-style-type: none"> • Fairmined Standard: artisanal and small scale mining organizations and operators (specially the first authorized Fairmined buyers) • Fairmined Market Annex: Fairmined Operators and Licensees <p>There are three optional business models for the supply chain actors:</p> <ol style="list-style-type: none"> a) Fairmined Labeled: full physical traceability through the Fairmined System from mine to the final consumer product; allowed application of the label, hallmark, marketing statements and origin community; prohibited mixing of Fairmined Gold with external gold b) Fairmined Incorporated: physical traceability assured from mine site to first approved buyer (refining); downstream from this point, operators and licensees are free to follow traceability and product composition rules of their own choice; authorized CSR-reporting of the height of paid premium and amount of gold purchased and incorporated into the production c) Fairmined Gold Certificates (“book and claim” principle): No purchase and physical integration of gold into the business but a financial and formal support to Fairmined-certified gold production through the purchase of a “gold certificate” in the height of the Fairmined premium of 4.000 USD/kg Gold; authorized for CSR-reporting.
Proof of origin	<p>(1) Yes</p> <p>There is direct trade between mining organizations and buyers abroad with traceability along the supply chain. Mining organizations must have an internal control system which assures the physical traceability of the Fairmined certified metals until it is delivered to the first authorized buyer. Therefore first buyers and traders have to become “authorized operators” and retailers who are finally using the logo are registered as “licensees”. Authorized operators in the downstream supply chain have to ensure full documentary traceability (Fairmined ID on contracts, delivery notes, reporting, invoices, etc.) and different physical traceability requirements depending on the business model. Reports have to be submitted to ARM’s Fairmined Information System which specifies reporting requirements for each type of operator in detail. The Fairmined Development Fee (funding of the Fairmined Initiative) is only paid by the first authorized buyer who purchases gold from the mine.</p>
Assessment unit	(1) All facilities: mining and processing
Geographic focus	(2) Global: low-income production countries in Latin America, the Caribbean, Africa, Asia and Oceania, which officially qualify for development assistance, global buyers in consuming countries (US, Peru, Colombia and Europe)

Fairmined Standard for Gold from Artisanal and Small-Scale Mining, Including Associated Precious Metals		
State of implementation		<ul style="list-style-type: none"> • 7 certified mining organizations: <ul style="list-style-type: none"> – 3 in Colombia (Coop. of Coodmilla, La Fortaleza Asociation; and the Coop. Iquira) – 2 in Peru (Aurelsa, Cecomip) – 1 in Bolivia (Coop. 15 de Agosto) – 1 in Mongolia (Xamodx NGO) • 25 mining organizations in process to become certified: <ul style="list-style-type: none"> – 15 in Colombia – 4 in Peru – 2 in Bolivia – 2 in Ecuador – 2 in Senegal • 12 operators (refiners and traders) • 131 licensees (brands in the jewellery and financial market)
Membership program		(2) No
Recent developments		<ul style="list-style-type: none"> • After the 2015 and 2016 Nobel Peace Prize and the Palme d'Or, also the new trophée "Olympic Laurel" of the International Olympic Committee was made of Fairmined Gold from organizations in Colombia and Peru. There are three awards now to make an example that sourcing responsible gold from artisanal and small-scale mining is possible. • "More than 130 businesses from 20 countries already have joined the Fairmined Initiative to work with Fairmined Gold [...]. The majority of these companies is located in North America and Europe, but recently increased interest from South America can be perceived." There is one jewellery brand from Ecuador and four from Peru and five from Colombia who recently joined as licensees in 2015 and 2016. • ARM and the Responsible Jewellery Council (RJC) strengthen their collaboration about promoting a responsible jewellery supply chain and will continue to ensure their standards and assurance models are mutually supportive. RJC and ARM piloted the first combined Fairmined and Chain of Custody (CoC) audit in October 2016 with Swiss based refiner, who has been a RJC member since 2006 and a Fairmined Supplier since 2014. Moreover, Fairmined gold is being offered to banks and the electronic sector but no trade relations are known yet. • "Between 2014 and 2016, Fairmined certification has generated more than \$1 million US Dollars in Premium for responsible artisanal and small-scale mining organizations." The premium "is the main incentive for miners as it provides them with funds for long-term investment in social, economic and environmentally sustainable development." • Because the Fairmined Standard's requirements are hard to implement for many of the artisanal mining organizations worldwide, the "Fairmined Entry Level Standard" will be developed during 2017 to especially engage with artisanal and small-scale gold mining in conflict and high risk areas early in their formalization stage. The aim is to provide access to international markets while addressing the most severe forms of risk.
Requirements of the Standard		
Summarized standard requirements	Environmental issues	<p>Management of toxic substances:</p> <ul style="list-style-type: none"> • Prohibition of amalgamation if alternative techniques are possible • Mercury-free gold concentration by mechanical or manual processes • Mercury/Cyanide disposal; avoiding leaching; trained personnel • Regulated combustion of amalgam • Handling of nitric acid • Disposal of fuel residues • Qualified personnel for waste management • Waste planning of waste sludge, waste water and chemical waste <p>Protection of ecosystems:</p> <ul style="list-style-type: none"> • Legal compliance • Legally protected areas • Environmental effects of technological changes • Filling or blocking of underground cavities or mines • Avoiding of acid leaching

Fairmined Standard for Gold from Artisanal and Small-Scale Mining, Including Associated Precious Metals		
Summarized standard requirements	Environmental issues	<ul style="list-style-type: none"> • Protection for water bodies against sludge heaps/contamination • Slopes in surface mining • Mitigation plans • Adequate topographic restoration • Revegetation <p>Honored with the additional ecological premium and attribute “ecological” gold, silver and platinum, if the following aspects are fulfilled:</p> <ul style="list-style-type: none"> • Prohibition of mercury and cyanide in processing • Only gravimetric methods for gold concentration • Environmental management plan against environmental disruption • Process of revegetation
	Social and societal issues	<ul style="list-style-type: none"> • Assessment of working conditions • Incremental improvement plans • Anti-discrimination, non-violence, respectful handling, consideration of handicapped persons • Protection and support of pregnant women • Legally binding employment contracts • Living wage and payment with money, gold or ore, deductions only in exceptional cases, non-monetary benefits • Paid exemption in case of illness, leave and pregnancy • Regulated working and overtime hours • Humane living if provided • Protection clothing and safe workplace • Commitment for safe workplace • Registration about injuries and accidents at work • Employee and community training for health risks • First-aid program • Regular medical care of employees • Policy and process against sexual harassment and violence against women • Gender specific monitoring system of occupational hazards • Emergency rescue plan • Child labour, right of schooling, education programs • Forced labour, prohibition of confiscations of documents • Freedom of assemblage and negotiation • Social insurance for all mine workers • Financial support in case of accidents or job illnesses through other employees • Regulation for the case of death; severance benefits of heirs • Fairmined premium for sustainable development for the company or organization and community
	Corporate Governance and Trade	<ul style="list-style-type: none"> • Proof of transactions for the entire supply chain and data base for the purpose of auditing • Compliance and authorization of supply chain actors • Traceability of the product along the entire supply chain • Mixing of Fairmined products • Yearly production plans • Correct trade, fair trading relationships and contracts • Set minimum gold and silver prices (in relation to LBMA prices) • Payment of the Fairmined premium per kg gold and kg of silver by the first buyer • Payment of the Fairmined ecological premium for ecological conditions of mining per kg gold if applicable by the first buyer • Transport and insurance costs • Down payments and timing of payments • Further requirements for the business models “Fairmined Incorporated”, “Fairmined Labeled” and “Fairmined Certificates”
Rigor or flexibility of the standard model for compliance	(3) Obligatory standard catalogue (incl. incremental catalogues and deadlines for corrective measures)	

Fairmined Standard for Gold from Artisanal and Small-Scale Mining, Including Associated Precious Metals	
Rigor or flexibility of the standard model for compliance	In order to start the certification process national laws have to be complied to. If the entry requirements of the standard (year 0) are above the national requirements, the lower legal requirements replace the Standard requirements for the indicated timeframe and the higher Standard requirements become applicable for the next 3-year certification cycle. Additional standard requirements have to be complied to and implemented depending on certification time: new requirements can be present in year 1, 3, 6 and 9 depending on the sustainability issue. In case of non-compliances the respective auditor can set a certain time limit for corrective measures. Their implementation has to be proved by documents or if it is required an additional audit is conducted.
Provided documents and tools	<ul style="list-style-type: none"> • Fairmined Standard including the Market Annex • The Fairmined Development Fee Explanatory Document • Fairmined Premium Explanatory Document • Explanatory Document and Procedure for the determination of Areas Temporarily Excluded • Process and timelines of the Fairmined Certification for the ASMO • Mechanism for pilot testing of Fairmined standard 2.0 amendments • Pilot amendment project for Fairmined incorporated's segregated refining criteria • Pilot amendment project for the composition rules of Fairmined labeled products
Number of quoted international conventions and other guidance's	(2) 10–20
Referral to other standards for more information or guidance	<p>(1) Yes</p> <ul style="list-style-type: none"> • London Bullion Market Association (LBMA) • Fairtrade because their standards are both based on the common "Standard Zero" • "OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas", in particular Appendix 1 of its "Supplement for Gold".
Recognition of other standards for the proof of compliance of certain issues	<p>(1) Yes</p> <p>ARM reserves the right to recognize comparable audits by 3rd party auditors. The other way round, the RJC Chain-of-Custody Standard accepts Fairmined Gold as qualified material ("eligible material") that is authorized to mix with RJC Gold in terms of fulfilling the OECD Due Diligence Guidance upon minerals from conflict and high-risk areas.</p>
Assessment of Standard Compliance and Transparency of the Results	
Subject-Matter of the conformity assessment	The mining organization has to comply with all standard requirements which are distinguished into three scopes of responsibility, i. e. the Fairmined System of Production, the entire organization or the surrounding community. Compliance is subject to regular audits. All supply chain "operators" must be authorized and are subject to auditing against the standard's Market Annex. If service providers (e. g. local trader, exporter) are contracted, these are also subject to auditing. Retailers are audited in different frequency and way depending on the amount of purchased Fairmined Gold.
Type of conformity assessment (audit)	(3) Verification and certification (achieved on average after 12–24 month, afterwards verified annually by 3 rd -party auditor)
Auditor status and frequency of audits	<p>(3) 3rd Party (yearly)</p> <p>Auditing of mining organization and authorized supply chain actors. Mining organizations are subject to "physical audits".</p> <p>The first authorized customer of Fairmined Gold is subject to a "physical" auditing (site inspection) or "documentary" auditing, all others (licensees) are subject to a "documentary" auditing. ARM reserves the right to recognize comparable audits by 3rd party auditors.</p>
Assessment elements	<p>(1) Self-Assessment</p> <p>(2) Document analysis</p> <p>(3) Site inspection</p> <p>(4) Interviews with workers, managers, etc.</p>

Fairmined Standard for Gold from Artisanal and Small-Scale Mining, Including Associated Precious Metals	
Grievance mechanisms for auditor decisions	(1) Yes Via the auditors internal system: a) Firm may submit a rebuttal within 14 days to auditor. As appropriate, auditor re-evaluates b) If no agreement can be found, each party can call for a court of arbitration
Whistle-blowing mechanism for standard non-compliances	(1) Yes Via the auditors internal system (supported by ISO 17020 and ISO 17065): a) Auditor receives information from third parties. Auditor decides about further investigation b) Risk-based preliminary assessment by auditor c) Follow-up investigation as required (e.g. collecting further data) d) Name of whistle-blower can be handled confidentially
Party publishing the results	(1) Standard initiative No audit results or reports are being published. Fairmined publishes the Impact report with the total premium paid and its impacts to the mining organizations and there are six community profiles on the website with information on their development. Moreover, there is a world map showing certified mine sites, supply chain actors and supporters. (2) Company Mining companies do not publish their results so far. However, supply chain actors are encouraged to publish the amount of gold purchased and the amount of premium paid.
Degree of detail of the published results	No auditing results are published.
List of References	
<ul style="list-style-type: none"> • www.fairmined.org • www.responsiblemines.org • www.responsiblejewellery.com/oeed-due-diligence-guidance • Alliance for Responsible Mining (2015): <i>Our history</i>. Available online at http://responsiblemines.org/en/our-work/who-we-are/our-history, accessed 08.24.2016. • Alliance for Responsible Mining (2014): <i>Fairmined Standard for Gold from Artisanal and Small-Scale Mining, including Associated Precious Metals, Version 2.0</i>. Available online at http://www.responsiblemines.org/images/sampleddata/EstandarFairmined/Fairmined%20Std%202%200_2014_.pdf, accessed 27.08.15. • Alliance for Responsible Mining (2015): Q&A: RJC <i>recognition of the Fairmined Standard for Gold from Artisanal and Small-scale miners</i>. Available online http://www.responsiblejewellery.com/files/QA-RJC-recognition-of-the-Fairmined-Standard-Sept14.pdf, accessed 08.10.2015. • Echavarria, Christina (2009): <i>Standard Zero for Fairtrade Artisanal Gold and Associated Silver and Platinum. Background and Development</i>. Alliance for Responsible Mining. Available online at http://www.responsiblemines.org/attachments/042_STANDARD%20ZERO%20BACKGROUND%20AND%20DEVELOPMENT.pdf, accessed 08.24.2016. • Institute for Market ecology (2014): <i>IMO I 4.5.3 G-e Appeals and Complaints Procedures</i>. Available online at http://www.responsiblemines.org/files/Pagina%20Certificacion/IMO_I_4_5_3_G-e_Appeals_and_Complaints_Procedures_v08.pdf, accessed 08.24.2016. • Institute for Market ecology (2015): <i>IMO I 2.1.27e Standard Procedures. Control and Certification Fairmined</i>. Available online at http://responsiblemines.org/files/Pagina%20Certificacion/IMO_I_2_1_27_e_Standard_Procedurees_Control_and_Certification_Fairmined_v02.pdf, accessed 08.24.2016. • Piersiak, Marcin; Tepperman, Aaron (2013): <i>Consultation Results Synopsis-Information to Stakeholders on the Outcome of the First Round of Consultation. Review of Fairtrade and Fairmined Standard for Gold and Associated Precious Metals</i>. Alliance for Responsible Mining; Fairtrade International. Available online at http://www.responsiblemines.org/attachments/283_synopsis_results_1st_consultation_FTFM2_ENG.pdf, accessed 08.24.2016. 	

FLO's Fairtrade Standard for Gold for Artisanal and Small-Scale Mining

Fairtrade Standard for Gold and Associated Precious Metals for Artisanal and Small-Scale Mining	
Background Information	
Initiators of the scheme	Fairtrade International (FLO), Alliance for responsible Mining Foundation (ARM)
Administrative body	Fairtrade International (FLO)
Founding date and location	1997, Bonn, Germany
Publication of the first standard version	Standard version 1.0 from 2013 (before the decoupling of standards between FLO and ARM the joint Fairmined standard from 2009 was valid)
Up-to-date standard version and next revision	Standard version 1.2 from 2015, next revision: 2018
Background of the scheme	(1) Scheme has exclusively been established for the standard development and implementation (in various sectors, though)
Stakeholder groups in a) first standard-setting b) latest revision (if applicable)	(1) Civil society (a) (2) Private sector (a) (3) Public institutions (a)
Subject-Matter of the Standard	
Main objective	The Fairtrade Standard for Gold aims at increasing disadvantaged small gold producers' access to markets and the continuous improvement of the social and economic well-being of communities. It also aims at fostering more environmental sustainability in mining practices and at empowering the small-scale mining sector through formalization and advocacy.
Target commodities	Gold and associated precious metals like silver and platinum
Application of the standard along the supply chain	Mine site to retail (for traders additional requirements are set by the sector-unspecific Fairtrade Trader Standard)
Proof of origin	(1) Yes <ul style="list-style-type: none"> • Documentary traceability of all the transactions between miners and licensed jewelers: Any operator at any point of the supply chain has to use an identification mark on all related documents and add all needed information about the transaction. • Physical separation of Fairtrade and non-Fairtrade metal destined for labelled or stamped products (traders authorized for using the Fairtrade Mark); physical separation of Ecological Fairtrade metal from other Fairtrade metal • Fairtrade metal under the Gold Sourcing Program is physically traceable from mine to the point of manufacturing including refining and can be mass-balanced by refiners to support the development of a volume market and to secure maximum benefits through the payment of the Fairtrade Premium and minimum Price. However, there is no permission for labelling in any consumer or public facing communication or marketing. • Fairtrade metals are allowed to be used in jewellery and semi-finished jewellery components; coins, ingots and bullion products of commemorative and/or financial nature; medals and trophies; and religious artefacts. Where jewellery components cannot be fully sourced from a Fairtrade certified precious metal source it is permitted to use non-certified metals in certain components of the final piece of jewellery. Other items have to be constituted 100 % of Fairtrade metal.
Assessment unit	(1) All facilities: gold mining organization
Geographic focus	(1) National: Peru and pilot mines in East Africa (FLO focuses on the southern hemisphere and excludes members from the EU and G8-countries)

Fairtrade Standard for Gold and Associated Precious Metals for Artisanal and Small-Scale Mining		
State of implementation		<ul style="list-style-type: none"> Two mining organizations in Peru, Sotrami and Macdesa, are certified so far with a total annual production of 800 kg of gold and 200 kg of silver. Fairtrade Gold is now available in 16 markets globally. It is expected that the East African mine sites, once certified, will add 44 kg of gold annually.
Membership program		(2) No
Recent developments		<ul style="list-style-type: none"> In 2016, Argos becomes the first UK high stress retailer offering Fairtrade gold wedding rings in stores and online, retailing from £99.99. The gold comes from the company Sotrami in Peru. Resembling the first Fairtrade gold supply chain for the consumer electronics industry, Fairphone announced in January 2016 that Fairtrade Gold is now incorporated in the Fairphone 2. About 30 mg of gold are contained in one smartphone. From 2012 to 2015, nine mining groups in East Africa (Uganda, Kenia and Tansania) were supported through the pilot fund of Comic Relief with the aim to supply the first Fairtrade certified gold from Africa. Plans to bring them in certification were however not realized yet. After the pilot project in East Africa, FLO in late 2014 seeked proposals for a feasibility study for a Fairtrade Gold Centre of Excellence Program which shall promote responsible mining in line with the Fairtrade Standard for gold. Certified mines are planned to be used as “beacons” of best practice or “Centres of Excellence” for the rest of the sector. In 2016, Comic Relief awarded FLO with another grant to extend its African Gold Program. The funding provides various trainings to the miners and access to finance, and helps to increase productivity and safety so that certification and market supply eventually can be achieved.
Requirements of the Standard		
Summarized standard requirements	Environmental issues	<ul style="list-style-type: none"> Energy use Production processes and use of chemicals Management of plants Storage requirements Cyanide and mercury Acid mine drainage Waste management practices Recycling Biodiversity Protected and critical areas Environmental expenditures Monitoring of environmental and social impacts Environmental Impact Assessment Emergency plan Re-filling of open pits Rehabilitation and restoration Alluvial mining rules Water bodies Ecological gold, silver and platinum
	Social and societal issues	<ul style="list-style-type: none"> Employment contracts and relations Employment conditions (remuneration, hours, housing, etc.) Protective equipment Occupational safety Medical checks First Aid Safety training and education Minign rescue plan Freedom of association and collective bargaining Human rights Women rights Diversity and equal opportunities Positive discrimination Child labour and remediation Forced labour Conflict-affected and high-risk areas

Fairtrade Standard for Gold and Associated Precious Metals for Artisanal and Small-Scale Mining		
Summarized standard requirements	Social and societal issues	<ul style="list-style-type: none"> • Indigenous rights • Cultural heritage • Monitoring of impacts on communities • Mine closure and planning • Crisis management • Local sustainable development • Relations to local communities and indigenous people • Binding agreements with affected communities • Traditional knowledge
	Corporate Governance and Trade	<ul style="list-style-type: none"> • Legal compliance • Policies • Official permits • Taxes, fees, royalties and other tributes • Grievance procedure • Democracy, Participation and Transparency • Risk management • Non-discrimination • Fairtrade Premium Committee • Fairtrade Development Plan • Management of production • Pre-financing • Pricing • Product composition • Transparency of finance transactions • Traceability requirements • Physical segregation of metals • Gold Sourcing Program • Trademark and marketing • Responsible sourcing and market information • Trade relations to suppliers • Transport and distribution • Intermediate traders (3rd party operators) • Corruption (extortion, bribery, money laundry) • Anticompetitive behaviour • No support to armed groups • Reporting on due diligence measures
Rigor or flexibility of the standard model for compliance		<p>(1) Obligatory standard catalogue (incl. incremental requirements) Incremental standard catalogue with core requirements that must be complied with and development requirements which apply according to the year of certification: Year 0, 1, 3, 6. Compliance with the Fairtrade Standard for Gold is achieved if all core requirements are fulfilled and if the organization reaches the minimum score on the development requirements as defined by the certification body. The certification body develops technical compliance criteria to be used during audits and for making certification decisions. These compliance criteria follow the wording and objectives of the requirements in this document. FLO-Cert defined 5 rankings for each requirement indicating the quality of implementation. Compliance with development criteria is verified against an average score.</p>
Provided documents and tools		<ul style="list-style-type: none"> • Fairtrade Standard for Gold and Precious Metals Main Changes (2015) • Fairtrade Standard for Gold and Associated Precious Metals for Artisanal and Small-Scale Mining, Version 1.2 (2013, valid 2015) • Fairtrade Standard for Gold and Associated Precious Metals for Artisanal and Small-Scale Mining, Version 1.1 (2013) • Explanatory Document and Procedure for the Determination of Areas Temporarily Excluded (ATE) (2013) • Database for minimum prices and premiums (2016, website) • Sample map to identify risks in production areas (2011) • Fairtrade Planning and Reporting Templates (2015) • List of Ideas for the Fairtrade Development Plan (2011) • Fairtrade Trader Standard V1.1 and Explanatory Document (2015)

Fairtrade Standard for Gold and Associated Precious Metals for Artisanal and Small-Scale Mining	
Number of quoted international conventions and other guidance	(1) < 10
Referral to other standards for more information or guidance	(1) Yes • ARM Fairmined Standard for Gold from Artisanal and Small scale Mining, including Associated Precious Metals
Recognition of other standards for the proof of compliance of certain issues	(2) No
Assessment of Standard Compliance and Transparency of the Results	
Subject-Matter of the conformity assessment	The mining organizations and traders have to comply with all respective standard requirements and are audited against these and not against the guidance. More information on how organizations are audited against the core and development requirements are found under <i>Rigor or flexibility of the standard model for compliance</i> .
Type of conformity assessment (audit)	(3) Verification and certification
Auditor status and frequency of audits	(3) 3 rd Party (every 3 years) The certification body of FLO is FLO-Cert.
Assessment elements	(2) Document analysis (3) Site inspection (4) Interviews with workers, managers, etc.
Grievance mechanisms for auditor decisions	(1) Yes a) Appeal decision to auditor b) If client disagrees with how appeal is handled, it may be handled to Fairtrade
Whistle-blowing mechanism for standard non-compliances	(1) Yes a) Allegations shall be made to auditor in the first place b) If complainant is not satisfied with how allegation is handled, they may complain to Fairtrade
Party publishing the results	No results are published. There is only a list of certified mining organizations, traders and products available.
Degree of detail of the published results	No results are published.
List of References	
<ul style="list-style-type: none"> • http://www.fairtrade.org.uk/en/media-centre/news/march-2016/comic-relief • http://wordpress.p20126.webspaceconfig.de/ • www.fairgold.org • www.flocert.net • www.fairtrade.net • https://www.fairphone.com/2016/01/27/how-we-got-fairtrade-certified-gold-in-the-fairphone-2-supply-chain/ • Echavarría, Christina (2009): <i>Standard Zero for Fairtrade Artisanal Gold and Associated Silver and Platinum. Background and Development. Alliance for Responsible Mining</i>. Available online at http://www.responsiblemines.org/attachments/042_STANDARD%20ZERO%20BACKGROUND%20AND%20DEVELOPMENT.pdf, accessed 08.24.2016. • Fairtrade International (2011): <i>History of Fairtrade</i>. Available online at http://www.fairtrade.net/about-fairtrade/history-of-fairtrade.html, accessed 08.24.2016. • Fairtrade (2013): <i>Fairtrade Standard for Gold and Associated Precious Metals for Artisanal and Small-Scale Mining</i>. Available online at http://www.fairtrade.net/fileadmin/user_upload/content/2009/standards/documents/2013-11-11_EN_Gold_and_Precious_Metals.pdf, accessed 17.08.2015. • Fairtrade International (2016): <i>Fairtrade International Requirements for Assurance Providers</i>. Available online at http://www.fairtrade.net/fileadmin/user_upload/content/2009/standards/documents/ASSU_ReqAssuranceProviders_v1.1.pdf, accessed 08.24.2016. • FLO-Cert (2015): <i>Public Compliance Criteria ASMO -2.3</i>. Available online at http://www.flocert.net/fairtrade-services/fairtrade-certification/compliance-criteria/, accessed 09.09.2016. 	

GRI's G4 Reporting Guidelines

GRI G4 Guidelines	
Background Information	
Initiators of the scheme	The GRI Guidelines were developed by GRI. GRI is an independent organization which was formed in 1997 by the US non-profit organizations Coalition for Environmentally Responsible Economies (CERES), the Tellus Institute, with support from The United Nations Environment Programme (UNEP). The GRI Sector Disclosures "Mining and Metals Supplement" was developed jointly by GRI and the International Council on Mining and Metals (ICMM).
Standard initiative/ Administrative body	Global Reporting Initiative
Founding date and location	1997, Boston, US; in 2002 relocated to Amsterdam, NL
Publication of the first standard version	G1 GRI Guidelines (cross-sectoral), 2000 GRI Sector Disclosures: Mining and Metals Supplement, 2011
Up-to-date standard version and next revision	GRI G4 Guidelines, 2014 (base for assessment in this profile) (However, in October 2016 the "GRI Standards" were published as a modular system which supercede G4 in 2018.)
Background of the scheme	(1) Scheme has exclusively been established for the standard development and implementation
Stakeholder groups in a) first standard-setting b) latest revision (if applicable)	(1) Civil society (a,b) (2) Private sector (a,b) (3) Public institutions (a,b)
Subject-Matter of the Standard	
Main objective	GRI was the first framework worldwide for comprehensive sustainability reporting and currently is the most widely used framework among big enterprises used internationally. The GRI Standards with their reporting indicators principally aim at supporting companies, governments, NGOs and other organizations to understand, measure and communicate the critical impact of their business on sustainability issues through regular reporting. GRI's target is to enable decision makers to consider aspects of sustainability and thereby create a more sustainable economy and world. GRI also believes transparency is the catalyst for change and that public interest should drive organizations' decision making.
Target commodities	All mineral commodities
Application of the standard along the supply chain	Predominantly larger companies of any industry and at any tier of the supply chain
Proof of origin	(2) No
Assessment unit	(1) All facilities:company level reporting
Geographic focus	(2) Global
State of implementation	<ul style="list-style-type: none"> • 115 mining companies reported using GRI in 2010, while this was 103 in 2009 (12 % increase). More than half of the reporting companies (62) implemented also the GRI Sector Supplement. • 22 of 23 ICMM members reported using GRI in 2014, 9 in Level A+ using GRI G3 (all assured independently) and 13 using the new GRI G4 in the "core" option. • Worldwide several thousand organizations from different industries in over 90 countries report using GRI. Further organizations may orient their reports along GRI. • Of the world's largest 250 corporation from various industries, 93 % report on their sustainability performance and 82 % of these use GRI's Standards to do so.
Membership program	No

GRI G4 Guidelines		
Recent developments		<ul style="list-style-type: none"> In 2015, new governance structures were established to better separate standard-setting activities from other activities in order to increase independence of standard development. Moreover, transparency is planned to be enhanced for the standard-setting process by publishing all protocols. <p>Some 2015 activities:</p> <ul style="list-style-type: none"> The first African conference upon reporting was held in South Africa to enhance reporting on the continent. GRI launched the research publication Defining Materiality: What Matters to Reporters and Investors (Part I), jointly produced with investment specialist RobecoSAM. The 12-month project “Reporting 2025” was launched and investigates the main issues which would be affecting companies’ agendas and their reports by 2025. Expert interviews on subjects like data technology and business development scenarios were conducted.
Requirements of the Standard		
Summarized standard requirements	Environmental issues	<p>Environmental Standard Disclosures:</p> <ul style="list-style-type: none"> Materials Energy Water Biodiversity Emissions Effluents and Waste Products and Services Transport Overall
	Social and societal issues	<p>Social Standard Disclosures:</p> <ul style="list-style-type: none"> Labor Practices and Decent Work: Employment, Labor/Management Relations, Occupational Health and Safety, Training and Education, Diversity and Equal Opportunity, Equal Remuneration for Women and Men Human Rights: Investment, Discrimination, Association and Bargaining, Child Labor, Forced Labor, Security Practices, Indigenous Rights Society: Local Communities <p>Economic Standard Disclosures</p> <ul style="list-style-type: none"> Indirect Economic Impacts
	Corporate Governance and Trade	<p>General Standard Disclosures:</p> <ul style="list-style-type: none"> Strategy and Analysis Organizational Profile Identified Material Aspects and Boundaries Stakeholder Engagement Report Profile Governance Ethics and Integrity Sector-specific General Standard Disclosures <p>Economic Standard Disclosures</p> <ul style="list-style-type: none"> Economic performance Market Presence Procurement Practices <p>Environmental Standard Disclosures:</p> <ul style="list-style-type: none"> Compliance Supplier Environmental Assessment Environmental Grievance Mechanisms <p>Social Standard Disclosures:</p> <ul style="list-style-type: none"> Labor Practices and Decent Work: Supplier Assessment, Grievance Mechanisms Society: Compliance, Corruption, Public Policy, Anti-competitive Behavior, Supplier Assessment for Societal Impacts, Grievance Mechanisms for Societal Impacts Human Rights: Assessment, Supplier Assessment, Grievance Mechanisms Product Responsibility: Customer Health and Safety, Labelling, Marketing Communications, Customer Privacy, Compliance

GRI G4 Guidelines	
Rigor or flexibility of the standard model for compliance	(2) Compulsory voting standard catalogue With GRI G4 there are two options for reporting, either in a „core“ or a „comprehensive“ version. Under both versions the generic Disclosures of Management Approach (DMA) have to be reported for each identified material issue. Under the “Core” option the company has to additionally report at least one indicator for each material issue (including mining-specific standard disclosures) and certain General Standard Disclosures, while the “comprehensive” version demands to report all indicators belonging to material issues identified and all General Standard Disclosures. When it is not possible to disclose certain information, it is allowed to omit those information but the reasons for omission have to be explained. (In the former GRI G3 Guidelines, there was also a tiered system with three „GRI Application Levels“ (A, B, C) indicating also a various minimum number of reported indicators.)
Provided documents and tools	<ul style="list-style-type: none"> • GRI G3 Guidelines: Sustainability Reporting Guidelines (2010) • GRI G3 Guidelines: Mining and Metals Sector Supplement (2010) • G4 Sustainability Reporting Guidelines – Part 1: Reporting Principles and Standards Disclosures (2013) • G4 Sustainability Reporting Guidelines – Part 2: Implementation Manual (2013, updated 2015) • G4 Sector Disclosures: Mining and Metals (2013) • G4 Sustainability Reporting Guidelines: FAQ (2015) • Sustainability Disclosure Database • Introducing the GRI Standards (Presentation, 2016) • Mapping G4 to the GRI Standards – Complete (Excel, 2016) • GRI Foundation upon the principles of GRI reporting (101) • General Disclosures (102) for reporting contextual information • Management Approach (103) for reporting management of material impacts • Topic Specific Standards (2XX Economic, 3XX Environmental, 4XX Social)
Number of quoted international conventions and other guidance	(3) > 20
Referral to other standards for more information or guidance	(1) Yes <ul style="list-style-type: none"> • International Finance Corporation (IFC) Environmental: Performance Standards 1,5,6 and 7 • International Organization for Standardization’s ISO 26000 • National standards for financial reporting
Recognition of other standards for the proof of compliance of certain issues	(2) No
Assessment of Standard Compliance and Transparency of the Results	
Subject-Matter of the conformity assessment	The GRI report can be independently assured to verify the reported information.
Type of conformity assessment (audit)	All three options of conformity assessment are allowed: (1) No assessment (2) Verification (3) Verification and certification
Auditor status and frequency of audits	(1) 1 st party (individual frequency) The company can declare conformity itself or GRI can provide an assurance of conformity. (3) 3 rd Party (individual frequency) Independent assurance is recommended.
Assessment elements	(1) Self-Assessment (2) Document analysis (variable) (3) Site inspection (variable) (4) Interviews with workers, managers, etc. (variable)

GRI G4 Guidelines	
Grievance mechanisms for auditor decisions	(2) No
Whistle-blowing mechanism for standard non-compliances	(2) No
Party publishing the results	(1) Standard initiative GRI published GRI reports that they know of on their website. (2) Company Companies publish their GRI reports on their websites.
Degree of detail of the published results	(2) Results about single standard requirement The GRI reports mostly provide detailed information about the company performance in relation to the sustainability indicators.
List of References	
<ul style="list-style-type: none"> • www.globalreporting.org • Global Reporting Initiative (2010): <i>Sustainability Reporting Guidelines & Mining and Metals Sector Supplement</i>. Available online at https://www.globalreporting.org/resourcelibrary/G3-English-Mining-and-Metals-Sector-Supplement.pdf, accessed 15.08.15. • Global Reporting Initiative (2013): <i>The External Assurance of Sustainability Reporting</i>. Available online at https://www.globalreporting.org/resourcelibrary/GRI-Assurance.pdf, accessed 25.08.2016. • Global Reporting Initiative (2013): <i>G4 Sustainability Reporting Guidelines – Part I. Reporting Principles and Standard Disclosures</i>. Available online at https://www.globalreporting.org/resourcelibrary/GRIG4-Part1-Reporting-Principles-and-Standard-Disclosures.pdf, accessed 15.08.15. • Global Reporting Initiative (2013): <i>G4 Sector Disclosures: Mining and Metals</i>. Available online at https://www.globalreporting.org/resourcelibrary/GRIG4-Part1-Reporting-Principles-and-Standard-Disclosures.pdf, accessed 15.08.15. • Global Reporting Initiative (2014): <i>2012/13 Sustainability Report GRI</i>. Available online at https://www.globalreporting.org/resourcelibrary/2012-2013-Sustainability-Report.pdf, accessed 15.08.15. • Global Reporting Initiative (2016): <i>GRI at a Glance</i>. Available online at https://www.globalreporting.org/information/news-and-press-center/press-resources/Pages/default.aspx, accessed 25.08.2016. • Global Reporting Initiative (2016): <i>GSSB Members</i>. Available online at https://www.globalreporting.org/information/about-gri/governance-bodies/Global-Sustainability-Standard-Board/Pages/GSSB-members.aspx, accessed 25.08.2016. • International Council on Mining and Metals (2010): <i>Annual Review, Making Progress through Dialogue</i>. Available online at http://www.icmm.com/document/158, accessed 15.08.15. • International Council on Mining and Metals (2011): <i>Transparency in mining sector is on the rise, reveal new figures by ICMM and GRI</i>. Available online at http://www.icmm.com/page/57406/transparency-in-mining-sector-is-on-the-rise-reveal-new-figures-by-icmm-and-gri, accessed 15.08.15. 	

ICMM' Sustainable Development Framework

Sustainable Development Framework (SDF)	
Background Information	
Initiators of the scheme	A small group of mining and metals company CEOs initiated the Global Mining Initiative (GMI), led by the World Business Council for Sustainable Development (WBCSD) to study societal issues among other issues. WBCSD commissioned the International Institute of Environment and Development (IIED) to undertake a 2-year multi-stakeholder consultation process "Mining, Minerals and Sustainable Development (MMSD) Initiative" about the sector's role in sustainable development. The GMI and MMSD gave rise to the creation of ICMM whose members declared to respond to the findings of the MMSD report. ICMM was created out of an existing metals organization – the International Council on Metals and the Environment (ICME). The GMI was ended after presentation of MMSD results in 2002.
Administrative body	International Council on Mining and Metals (ICMM)
Founding date and location	2001, London, United Kingdom
Publication of the first standard version	10 ICMM principles (2003); Eight Position Statements to accompany and strengthen the 10 ICMM principles, developed over the years 2003 to 2015 (see "provided documents")

Sustainable Development Framework (SDF)	
Up-to-date standard version and next revision	10 ICMM principles (2015), Position Statements updated irregularly
Background of the scheme	(1) Scheme has exclusively been established for the standard development and implementation
Stakeholder groups in a) first standard-setting b) latest revision (if applicable)	No information is provided for the participation of the following stakeholder groups: (1) Civil society (2) Private sector (3) Public institutions
Subject-Matter of the Standard	
Main objective	The ICMM is an organizations of global mining and metals companies and associations dedicated to create an industry respected and trusted among stakeholders due to responsible operation and contribution to sustainable development of local communities and society at large. ICMM wants to achieve this goal by improving the social and environmental performance of the industry. ICMM 10 Principles and Position Statements serve as a best practice framework on sustainable development, which need to be committed to, complemented by reporting on material sustainable development risks, management systems and performance in relation to those risks. GRI sustainability reporting is also required. Moreover, ICMM publishes and promotes using guidelines and toolkits for various issues of sustainable development among its members and beyond.
Target commodities	All mineral commodities
Application of the standard along the supply chain	Mine site and first level of processing
Proof of origin	(2) No
Assessment unit	(1) All facilities: all mine sites
Geographic focus	(2) Global
State of implementation	All 23 mining and metals member companies have to comply with the full membership requirements within 2 year of joining ICMM. In 2015, <ul style="list-style-type: none"> • 20 members reported on their alignment of their policies with the ICMM policy framework (all assured), however, some ambiguity exists concerning if all requirements of the position statements have been addressed. • 21 members reported on the processes and outcomes of identified material SD risks and opportunities (all assured), • 22 members reported on systems and approaches to manage SD risks and opportunities (21 assured) • 22 members reports on their performance for the identified SD risks and opportunities (21 assured) • 22 members submitted a GRI report: 9 members reported against G3 in Level A (all assured), while 12 members reported in accordance with the G4 Guidelines.
Membership program	(1) Yes: 34 regional and commodities associations (associated members) and 23 mining and metals member companies: <ul style="list-style-type: none"> • Founding members: Anglo American, Anglo Gold Ashanti, BHP Billiton, Freeport-McMoRan, JX Nippon, Newmont, Rio Tinto • Later members: Sumitomo Metal Mining (2002), Mitsubishi Materials (2002), Lonmin (2004), Teck (2006), Gold Fields (2007), Barrick (2008), Goldcorp (2009), MMG (2009), African Rainbow Minerals (2009), Areva Mines SA (2011), Codelco (rejoined 2011), Hydro (2011), Antofagasta Minerals (2014), Glencore (2014), Polyus Gold (2015), South 32 (2015)
Recent developments	<ul style="list-style-type: none"> • The ICCM website and content was revised in 2016 and the “Sustainable Development Framework” seemingly was disbanded to become the basic rules and commitments of ICMM.

Sustainable Development Framework (SDF)		
Recent developments		<ul style="list-style-type: none"> • A new ICMM strategic strategy and action plan 2016–2018 was released and targets raising standards and improving performance across the priority areas of environmental stewardship and the role of mining and metals in society and human well-being. A collaborative approach to support positive engagement with host communities is sought, to build trust in the mining and metals industry and catalyse social and economic development. • 2013: Launch the Cross-Sector Biodiversity Initiative (CSBI), focusing on developing tools for biodiversity conservation, joint initiative with the International Union for Conservation of Nature (IUCN) to assess members' biodiversity performance • After the tailings dam disaster at the iron-ore operations in Minas Gerais of the Brazilian mining company Samarco's in 2015 (joint venture between BHP Billiton, an ICMM member, and Vale), ICMM launched a review of the global tailings management, as well as the associated standards and governance of its member companies. The results indicated that there is existing technical and management guidance which needs to be more effectively applied. ICMM issued a new position statement about tailings dam management and governance which members have committed to and have to implement by 2018.
Requirements of the Standard		
Summarized standard requirements	Environmental issues	<ul style="list-style-type: none"> • For GRI reporting requirements see GRI Guidelines • Commitment Principle 6: Continual improvement in environmental performance issues, such as water stewardship, energy use and climate change <ul style="list-style-type: none"> – Environmental impact assessment from exploration to closure – Environmental management system – Rehabilitation of land disturbed or occupied in accordance with post-mining land uses – Safe storage and disposal of wastes and process residues – Design adequate resources to meet closure requirements • Commitment Principle 7: <ul style="list-style-type: none"> – Respect legally designated protected areas – Disseminate scientific data on/promote biodiversity assessment and management – Support scientifically sound, inclusive and transparent procedures for integrated approaches to land-use planning, biodiversity, conservation and mining • Commitment Principle 8: Support the knowledge-base and systems for responsible design, use, re-use, recycling and disposal of products containing metals and minerals <ul style="list-style-type: none"> – Metals and minerals and their life-cycle effects on human health and the environment – Support research and innovation that promotes the use of products and technologies that are safe and efficient – Promote integrated materials management – Provide regulators and other scientifically sound data – Support the development of scientifically sound policies, regulations, product standards and material choices • Commitment to Mining and Protected Areas • Commitment to Mercury Risk management • Commitment to ICMM Principles for Climate Change Policy Design
	Social and societal issues	<ul style="list-style-type: none"> • For GRI reporting requirements see GRI Guidelines • Commitment Principle 3: Respect human rights and the interests, cultures, customs and values of employees and communities affected <ul style="list-style-type: none"> – Fair remuneration and work conditions – Never use Child and forced labour – Constructive employee engagement – Elimination of harassment and unfair discrimination – Training on cultural issues and human rights for all employees and security personnel – Minimize involuntary resettlement and compensate fairly – Respect for cultural heritage and indigenous people

Sustainable Development Framework (SDF)		
Summarized standard requirements	Social and societal issues	<ul style="list-style-type: none"> • Commitment Principle 5: Continual improvement in health and safety performance with the ultimate goal of zero harm <ul style="list-style-type: none"> – Management System – Measures to eliminate workplace fatalities – Health and safety training for employees and contractors – Health surveillance and risk-based monitoring of employees • Commitment Principle 9: Continual improvement in social performance and contribute to the social, economic and institutional development of host countries and communities <ul style="list-style-type: none"> – Early stakeholder engagement concerning social impacts – Appropriate systems in place for continual interaction with affected parties – Minorities and other marginalised groups have equitable and culturally appropriate means of engagement – Contribute to community development from exploration to closure in collaboration with host communities – Encourage partnerships with governments and NGOs to ensure programs (e.g. community health, education, local business development) are well designed – Enhance social and economic development by seeking opportunities to address poverty • Commitment to Transparency of Mineral Revenues • Commitment to Mining Partnerships for Development • Commitment to Indigenous Peoples and Mining
	Corporate Governance and Trade	<ul style="list-style-type: none"> • Preparation of the SD report with reporting on: <ul style="list-style-type: none"> – Policy alignment according to the ICMM 10 Principles and Position Statements – Processes and outcomes of identified material SD risks and opportunities – Systems and approaches to manage SD risks and opportunities – Performance for the identified SD risks and opportunities – Sustainability reporting against the Global Reporting Initiative (GRI) G3 or G4 Guidelines • For GRI reporting requirements see GRI Guidelines • Commitment Principle 1: Ethical business practices and sound systems of corporate governance and transparency <ul style="list-style-type: none"> – Commitment to enforce company statements – Bribery and Corruption – Comply or exceed host-country laws and regulations – Partnerships for effective national sustainable development strategies • Commitment Principle 2: Integration of SD into the corporate strategy and decision-making processes <ul style="list-style-type: none"> – Policies and practices – Mine planning, design and closure to enhance SD – Implement good practice and innovate – Encourage business partners to also commit to SD – SD trainings for own employees and that of contractors – Support public policies for open and competitive markets • Commitment Principle 4: Effective risk-management strategies and systems based on sound science and stakeholder perceptions <ul style="list-style-type: none"> – Affected stakeholder consultation – Regular review – Information of any potentially affected parties – Develop effective emergency responses with affected parties • Commitment Principle 10: Proactively engage key stakeholders on sustainable development challenges and opportunities in an open and transparent manner. Effectively report and independently verify progress and performance <ul style="list-style-type: none"> – Report on economic, social and environmental performance – Provide timely, accurate and relevant information – Respond to stakeholders through open consultation • Commitment to Transparency of Mineral Revenues

Sustainable Development Framework (SDF)	
Rigor or flexibility of the standard model for compliance	<p>(1) Obligatory standard catalogue (incl. incremental requirements)</p> <p>ICMM members have to meet the membership requirements which demand to submit a sustainable development report (SD report) annually. The SD report is a self-assessment of performance in relation to five subject matters which need to be reported upon and assured independently by a verification:</p> <ol style="list-style-type: none"> (1) Policy alignment according to the ICMM 10 Principles and Position Statements (2) Processes and outcomes of identified material SD risks and opportunities (3) Systems and approaches to manage SD risks and opportunities (4) Performance for the identified SD risks and opportunities (5) Reporting in conformance with the Global Reporting Initiative (GRI) G3 in Level A+ or G4 Guidelines in the “core” option <p>If members don't meet the member requirements they can be excluded from the Council.</p>
Provided documents and tools	<ul style="list-style-type: none"> • ICMM 10 Principles (2003) according to the key challenges in mining • Eight Position Statements: <ul style="list-style-type: none"> – Mining and Protected Areas (2003) – Transparency of Mineral Revenues (2003, 2009) – Mercury Risk management (2009) – Mining Partnerships for Development (2004, 2010) – Principles for Climate Change Policy Design (2011) – Indigenous Peoples and Mining (2008, 2013) – Tailings Governance (2016) – Water Stewardship (2017) <p>A selection of various other guidelines and reports:</p> <ul style="list-style-type: none"> • MMSD report: Breaking New Ground: Mining, Minerals and Sustainable Development, IIED (2002) • MMSD+10: Reflecting on a decade of mining and sustainable development, IIED (2012)+ • Community development toolkit (2005) • Good practice guidance on mining and biodiversity with IUCN (2006) • Six point materials stewardship policy plan (2006) • Metals environmental risk assessment guidance (MERAG) and Health risk assessment guidance for metals (MERAG) (2007) • Planning for integrated mine closure toolkit (2008) • Good practice guidance on occupational health risk assessment (2009) • Guidance on human rights in the mining and metals industry (2009) • Guidance note on how to engage with artisanal and small-scale mining (2009) • Good practice guidance on health impact assessment and leadership matters: managing fatal risk guidance (2010/15) • Mining partnerships for development toolkit (2011, 3rd edition) • The role of mining in national economies (2012/14) with an innovative mining contribution index • Guidance on Integrating human rights due diligence into corporate risk (2012) • Water Stewardship Framework (2014) • Demonstrating value: a guide to responsible sourcing (2015)
Number of quoted international conventions and other guidance	(1) < 10
Referral to other standards for more information or guidance	(1) Yes Extractive Industries Transparency Initiative
Recognition of other standards for the proof of compliance of certain issues	(2) No

Sustainable Development Framework (SDF)	
Assessment of Standard Compliance and Transparency of the Results	
Subject-Matter of the conformity assessment	The annual SD report of members comprises self-reporting upon five subject matters which need to be assured independently.
Type of conformity assessment (audit)	(2) Verification
Auditor status and frequency of audits	(3) 3 rd Party (yearly)
Assessment elements	(1) Self-Assessment (2) Document analysis (3) Site inspection (4) Interviews with workers, managers, etc.
Grievance mechanisms for auditor decisions	(2) No
Whistle-blowing mechanism for standard non-compliances	(2) No
Party publishing the results	(1) Standard initiative ICMM publishes an overview of the status of the SD reporting and assurance on the five subject matters (2) Company ICMM members publish their SD and GRI reports individually.
Degree of detail of the published results	(1) Summarized results The ICMM overview of the status of the SD reporting and assurance on the five subject matters indicates if the recent reporting on a subject matter was full, partial or pending
List of References	
<ul style="list-style-type: none"> • www.icmm.com • International Council on Mining & Metals (2008). <i>Sustainable Development Framework: Assurance Procedure</i>. Available online at http://www.icmm.com/document/439, accessed 20.08.2015. • International Council on Mining & Metals (2010). <i>Applying the ICMM Assurance Procedure – an interpretive guide</i>. Available online at www.icmm.com/document/1349, accessed 20.08.2015. • International Council on Mining & Metals (2011). <i>New member admission process</i>. Available online at http://www.icmm.com/document/1775, accessed 20.08.2015. • International Council on Mining & Metals (2015). <i>Engaging with society – Annual Review 2014</i>. Available online at http://www.icmm.com/document/8539, accessed 20.08.2015. • International Council on Mining & Metals (2016): <i>About us</i>. Available online at http://www.icmm.com/en-gb/about-us, accessed 24.08.2016. • Mining weekly (2017): <i>Mining Indaba platform for driving best practice, positive change</i>. Available online at http://www.miningweekly.com/article/mining-indaba-platform-for-driving-best-practice-positive-change-2017-01-27/rep_id:3650, accessed 03.02.2017. 	

IFC Environmental and Social Performance Standards

IFC's Environmental and Social Performance Standards	
Background Information	
Initiators of the schemes	International Finance Corporation (World Bank Group)
Administrative body	International Finance Corporation (World Bank Group) ²¹ → IFC's Performance Standards are also used by Multilateral Investment Guarantee Agency (MIGA in WBG), 85 Equator Principles Financial Institutions ("Equator Banks"), 34 OECD Export Credit Agencies, 15 European Development Financial Institutions (incl. DEG/KFW Development Bank), etc., to assess their customers' sustainability.
Founding date and location	1956, Washington, D.C, USA
Publication of the first standard version	2006, IFC
Up-to-date standard version and next revision	IFC Performance Standards on Environmental and Social Sustainability (2012) World Bank Group Environmental, Health and Safety (EHS) Guidelines (2007) Industry-specific technical reference documents (2007) ²² : <ul style="list-style-type: none"> World Bank Group EHS Guidelines for Mining (underground and open-pit mining, alluvial and solution mining, marine Dredging), next revision in 2017/2018 World Bank Group General EHS Guidelines, next revision in 2017/2018
Background of the scheme	(2) Scheme is part of an existing institution (e. g. association or research institute) or requirements are developed by an existing institution
Stakeholder groups participating in a) first standard-setting b) latest revision (if applicable)	(1) Civil society (b) (2) Private sector (b) (3) Public institutions (b)
Subject-Matter of the Standard	
Main objective	IFC clients have to meet the eight Performance Standards throughout the life of an investment by IFC. "The Performance Standards 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 in a sustainable way, including stakeholder engagement and disclosure obligations of the client in relation to project-level activities". Clients from oil, gas and mining are helped to mitigate risks by developing their overall environmental and social management capacity through the IFC Performance Standards and advisory support.
Target commodities	All mineral commodities since this is a universal standard for all kind of industries
Application of the standard along the supply chain	Potentially the whole supply chain tiers depending on the company which wants to be certified
Proof of origin	(2) No
Assessment unit in mining	(1) All facilities (2) Selected facilities: selected mine sites (Depending on the type of investments)
Dissemination	(2) Global

²¹ Established in 1956, IFC is owned by 184 member countries, a group that collectively determines its policies. With a global presence in more than 100 countries, a network consisting of hundreds of financial institutions, and more than 2,000 client firms, IFC has been leading the way in private sector development.

²² The EHS Guidelines serve as technical reference documents with industry-specific examples of Good International Industry Practice (GIIP), including accepted performance levels, as defined in IFC Performance Standard 3 on Resource Efficiency and Pollutions Prevention and are used during project appraisal activities as a source of information.

IFC's Environmental and Social Performance Standards		
State of implementation		<ul style="list-style-type: none"> • “Overall, IFC holds an active natural resource portfolio of US\$2,890 million, roughly 71 percent in oil and gas and 29 percent in mining in volume terms. By number of projects, 60 percent of the portfolio is in oil and gas and 40 percent in mining. As of June 30, 2016, IFC has investments in more than 37 countries with Sub-Saharan Africa (33 %) and Latin America (31 %) and Caribbean (20 %) together accounting for about two thirds of the lending volume. Loans account for 81 percent of the IFC portfolio and equity investments are the balance.” • In the financial year 2016, IFC committed 14 financings in the oil, gas and mining industry in more than 11 countries for a total of 824 million USD: <ul style="list-style-type: none"> – In 2015, 5 investments in mining projects (Burkina Faso, DR Congo, Mongolia, Nicaragua, Tanzania) and nine in oil and gas (Argentina, China, Egypt, Kenya, MENA Region, Mexico, Pakistan, Tanzania). • “The overall lending volume doubled from last year which was due to the IFC’s participation in the landmark Oyu Tolgoi mining project in Mongolia” (one of the largest copper and gold mines globally). Total investments fell from 21 to 14 in the financial year 2016 because of the slowdown in the metals markets. • The impact of IFC portfolio companies in oil, gas and mining in financial year 2016 (year 2015): <ul style="list-style-type: none"> – 60.000 jobs supported – 10.600 jobs for women supported – 51 million customers supplied with gas – 2.5 billion USD in payments governments – 41 million USD in community development outlay – 9.6 billion USD in domestic procurement of goods and services
Membership program		(2) No
Recent developments		<ul style="list-style-type: none"> • Feedback-surveys on the current standards • In 2016 the new Environmental and Social Framework (ESF) is released and is expected to become effective in early 2018. • The World Bank Group supports the Extractives Industries Transparency Initiative through administration of the EITI Multi-Donor Trust Fund (MDTF) and its successor, direct support to national civil society groups and through global knowledge work. “As more countries attain EITI-compliant status and adopt strengthened EITI Standards, WBG/MDTF will increasingly support activities that link EITI to sector reforms.” • “Weak and volatile commodity prices continued to have a negative effect on IFC client companies in FY16, affecting the development impact of projects as they generated lower financial returns, fewer payments to government and other benefits that normally accrue to local communities from a thriving extractive industry. Moreover, mining exploration projects, which inherently have a higher risk profile, were particularly impacted by the external environment and negatively impacted the overall IFC development results. Despite weaker financial and economic performance as tracked by IFC’s Development Outcome Tracking System (DOTS), IFC clients have demonstrated strong and continuous commitment to best environmental and social practices.”
Requirements of the Standard		
Summarized standard requirements	Environmental issues	<ul style="list-style-type: none"> • Performance Standard 1: Assessment and Management of Environmental and Social Risks and Impacts <ul style="list-style-type: none"> – Environmental Risks and Impact Assessment – Policy – Identification of Risks and Impacts – Management Programs – Organizational Capacity and Competency – Emergency Preparedness and Response – Monitoring and Review – Stakeholderengagement (see below) • Performance Standard 3: Resource Efficiency and Pollution Prevention <ul style="list-style-type: none"> – Resource Efficiency <ul style="list-style-type: none"> – Greenhouse Gases – Water Consumption

IFC's Environmental and Social Performance Standards		
Summarized standard requirements	Environmental issues	<ul style="list-style-type: none"> – Pollution Prevention – Wastes – Hazardous Materials Management – Pesticide Use and Management • Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Resources <ul style="list-style-type: none"> – Protection and Conservation of Biodiversity <ul style="list-style-type: none"> – Modified, Natural, Critical Habitat – Legally Protected and Internationally Recognized Areas – Invasive Alien Species – Environmental Action Plan & Compensations – Assessment and Management of Ecosystem Services – Sustainable Management of Living Natural Resources – Supply Chain
	Social and societal issues	<ul style="list-style-type: none"> • Performance Standard 1: Assessment and Management of Environmental and Social Risks and Impacts <ul style="list-style-type: none"> – Stakeholder Engagement among others (see above) <ul style="list-style-type: none"> – Analysis and Engagement Planning – Disclosure of Information – Consultation – Informed Consultation and Participation – Indigenous People – Private Sector Responsibilities Under Government – Led Stakeholder Engagement – External Communications – Grievance Mechanism for Affected Communities – Ongoing Reporting to Affected Communities • Performance Standard 2: Labor and Working Conditions <ul style="list-style-type: none"> – Human Resource Policies and Procedures – Working Conditions and Terms of Employment – Workers' Organisations – Non-Discrimination and Equal Opportunity – Retrenchment – Grievance Mechanism – Child, Forced Labor – Occupational Health and Safety – Workers Engaged by Third Party – Supply Chain • Performance Standard 4: Community Health, Safety and Security <ul style="list-style-type: none"> – Infrastructure and Equipment Design and Safety – Hazardous Materials Management and Safety – Ecosystem Services – Community Exposure to Disease – Security Personnel – Emergency Preparedness and Response • Performance Standard 5: Land Acquisition and Involuntary Resettlement <ul style="list-style-type: none"> – Project Design – Compensation and Benefits for Displaced Persons – Community Engagement – Grievance Mechanism – Resettlement and Livelihood Restoration Planning and Implementation – Displacement (physical and economic) – Private Sector Responsibilities under Government-Managed Resettlement • Performance Standard 7: Indigenous People <ul style="list-style-type: none"> – Avoidance of Adverse Impacts – Circumstances Requiring Free, Prior, and Informed Consent – Impacts on lands and natural resources subject to traditional ownership or under customary use – Relocation of indigenous people – Critical culture heritage – Private Sector Responsibilities under Government – Managed issues of indigenous people – Critical culture heritage

IFC's Environmental and Social Performance Standards		
Summarized standard requirements	Social and societal issues	<ul style="list-style-type: none"> Performance Standard 8: Cultural Heritage <ul style="list-style-type: none"> Protection of culture Heritage in Project Design and Execution Chance find procedures Consultation Community access Removal of Replicable Culture heritage, Non-Replicable culture heritage
	Corporate Governance and Trade	Not directly addressed by through a performance standard but still addressed. IFC works with firms to attract and retain investment by promoting the adoption of good corporate governance practices and standards. More information at http://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/ifc+cg
Rigor or flexibility of the standard model for compliance	<p>(1) Obligatory standard catalogue (incl. incremental catalogues and deadlines for corrective measures)</p> <p>The borrower has to agree on the final investment agreement with the World Bank Groups Board of Directors who needs to approve the project based on previous stakeholder consultations and E&S Review Summary (ESRS) and Action Plan (ESAP). Other financial institutes may use other assessment criteria when evaluating projects by IFC Standards.</p>	
Provided documents and tools	<ul style="list-style-type: none"> IFC Performance Standards on Environmental and Social Sustainability, 2012 Environmental and Social Review Procedures (ESRP) Manual IFC Sustainability Framework, 2012 Guidance Notes to Performance Standards on Environmental and Social Sustainability, 2012 World Bank Group General Environmental, Health and Safety Guidelines, 2007 World Bank Group Environmental, Health and Safety Guidelines for Mining, 2007 and for Construction Material Extraction, 2007 Data bank of training documents (incl. webinars), implementation guidelines, multimedia, case studies Data bank of project reports 	
Number of quoted international conventions and other guidance	(3) > 20	
Referral to other standards for more information or guidance	(2) No, but IFC itself is referenced by several standards, such as ASI, IRMA, Bettercoal and GRI.	
Recognition of other standards for the proof of compliance of certain issues	(2) No	
Assessment of Standard Compliance and Transparency of the Results		
Subject-Matter of the conformity assessment	IFC receives an Annual Monitoring Report on the progress in meeting the E&S terms of the investment agreement by each client for monitoring compliance. It is used by IFC staff for monitoring and reporting purposes. The IFC Advisory Services may enhance the project if IFC and the client identify opportunities. Other financial institutes using the IFC Standards may apply other conformity assessment mechanisms.	
Type of conformity assessment (audit)	(1) No conformity assessment The IFC Performance Standards are part of the IFC Environmental and Social Due Diligence Process and conducted by IFC staff. For more information see latest version of the ERSP.	
Auditor status and frequency of audits	(1) 1 st party (yearly): The company reports its fulfillment of the terms of the investment agreement. IFC staff monitors the annual reports and conducts site visits in a variable frequency. For more information see latest version of the ERSP.	

IFC's Environmental and Social Performance Standards	
Assessment elements	(1) Self-Assessment (2) Document analysis (3) Site inspection (4) Interviews with workers, managers, etc.
Grievance mechanisms for auditor decisions	In this case, there is no need of a grievance mechanism since the company reports its conformance by itself and there is no external auditor like with many other standards.
Whistle-blowing mechanism for standard non-compliances	(1) Yes: IFC's Compliance Advisor/Ombudsman (CAO) may also provide additional oversight. The CAO is an independent office that impartially responds to E&S concerns of affected communities, and aims to enhance IFC accountability and outcomes. Also, Performance Standard 1 requires the development and implementation of an effective grievance mechanism.
Party publishing the results	(1) Standard initiative: IFC will disclose the client's progress against the ESAP. There is a data bank of companies verified or consulted by IFC and the E&S Review Summary (ESRS) is published along with relevant sponsor E&S documentation (2) Company: Project E&S assessment information disclosed locally
Degree of detail of the published results	(1) Summarized results E&S Review Summary (ESRS) which is reviewed by the client along with relevant sponsor E&S documentation. Further information on IFC projects and outcomes are found in the World Bank Group's Annual Reviews. (2) Results about single standard requirement IFC project information portal with 216 project entries* for the oil, gas and mining industry worldwide for 2007 until 2017 (multiple documents per project) and information on company performance in each identified Performance Standard. (*144 uploaded Environmental Documents; 51 Summary of Investment Information; 20 Summary of Proposed Investment; 1 Early Disclosure)
List of References	
<ul style="list-style-type: none"> • www.ifc.org • www.ifc.org/PerformanceStandards • www.ifc.org/EHSGuidelines • www.worldbank.org • International Finance Corporation (2016): <i>Environmental and Social Review Procedures Manual. Environment, Social and Governance Department</i>. Available online at http://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/ifc+sustainability/our+approach/risk+management/environmental+and+social+review+procedure+manual, accessed 22.02.2017. • International Finance Corporation (2016): <i>About IFC</i>. Available online at http://www.ifc.org/wps/wcm/connect/corp_ext_content/ifc_external_corporate_site/about+ifc_new, accessed 08.25.2016. • International Finance Corporation (2012): <i>Performance Standards on Environmental and Social Sustainability. For IFC clients</i>. Available online at http://www.ifc.org/wps/wcm/connect/115482804a0255db-96fbffd1a5d13d27/PS_English_2012_Full-Documents.pdf?MOD=AJPERES, accessed 12.10.15. • International Finance Corporation (2011): <i>Understanding IFC's Environmental and Social Due Diligence Process</i>. Available online at http://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/ifc+sustainability/feature_oct2011_esprocess, accessed 19.08.16. • World Bank Group (2016): <i>2016 Annual review. The World Bank Group in Extractives Industries</i>. Available online at http://www.ifc.org/wps/wcm/connect/Industry_EXT_Content/IFC_External_Corporate_Site/Industries/Oil,+Gas+and+Mining/Development_Impact/Development_Impact_Extractive_Industries_Review/, accessed 24.02.2017. 	

IRMA's Standard for Responsible Mining

IRMA Standard for Responsible Mining	
Background Information	
Initiators of the scheme	Diverse stakeholders/Multi-stakeholder collaboration
Administrative body	Initiative for Responsible Mining Assurance (IRMA)
Founding date and location	2006, Washington, D.C, USA
Publication of the first standard version	Version 1.0 from 2014
Up-to-date standard version and next revision	Version 2.0 from 2016, next revision until 2017
Background of the scheme	(1) Scheme has exclusively been established for the standard development and implementation
Stakeholder groups participating in a) first standard-setting b) latest revision (if applicable)	(1) Civil society ²³ (a, b) (2) Private sector ²⁴ (a, b) (3) Public institutions (no seats in the Steering Committee but option to comment on the draft in the public consultation process like all other stakeholder groups)
Subject-Matter of the Standard	
Main objective	The standard aims at becoming the best-practice sustainability standard for industrial-mining for application in developed and developing countries and is under on-going development since 2006 with intense stakeholder consultation. The standard is only applicable at industrial mining but collaborates with initiatives for responsible artisanal and small-scale mining.
Target commodities	All mineral commodities, except for energy fuels
Application of the standard along the supply chain	Mine site
Proof of origin	(2) No, but collaboration with other initiatives for traceability solutions is planned
Assessment unit	(2) Selected facilities: selected mine sites
Geographic focus	(2) Global (not yet implemented though)
State of implementation	Implementation begins in 2017
Membership program	(1) Yes: A "membership program" is planned which shall guarantee the continuous support of the system by key stakeholders.
Recent developments	<ul style="list-style-type: none"> The first review was in 2014 and the revised draft Standard was released in April 2016 for a second public review and comment especially on the "flagged" issues until June 2016. IRMA also did two field tests of the Standard at host mines in the USA (2015) and Zimbabwe (2016) to "ground truth" the Standard. Associated learning informs the revision of the upcoming 2017 final Standard. In 2014 and more recently in April to June 2016 there was a series of webinars for information on the standard which is now available online. IRMA's verification program builds on and applies the International Social and Environmental Accreditation and Labeling Alliance (ISEAL Alliance) procedures.

²¹ Earthworks, IndustriALL Global Union, International Boreal Conservation Campaign, Oxfam, First Nations Women Advocating Responsible Mining, Western Shoshone Defense Project, United Steelworkers, Human Rights Watch

²² Tiffany & Co., AngloAmerican, Microsoft, ArcelorMittal, Jewelers of America

IRMA Standard for Responsible Mining		
Requirements of the Standard		
Summarized standard requirements	Environmental issues	<p>Water:</p> <ul style="list-style-type: none"> • Monitoring of water quality (incl. baseline studies) • Water quality limits • Warning system and countermeasures • Best-practice treatment of water and fish test • Modeling of possible load of water • Protection of high-quality water and protected water bodies • Mixing zones • Analysis of storm-water rivers • Precautions for spoil heaps • Hydrological studies/investigations • Utilization plan for water regimes • Calculation of climate change impacts • Sustainable use of groundwater • Water efficient processes and technologies • Accounting of Water balance • Organization of process and storm-water storage • Precautionary design of mines • Drainage feedback systems • Transpiration of mine water • Mine- and tunnel replenishment (including monitoring) • Advantageous design of heaps, reliable dams <p>Waste, energy and air pollution:</p> <ul style="list-style-type: none"> • Management of waste, monitoring and reporting • Monitoring of air quality and management plans • Air quality limits • Noise pollution • Monitoring and reporting for greenhouse gases and reduction, also policy • LEED Platinum Certification for buildings • Utilization of renewable energies (25%) • Usage of hybrid technology • Protection against cyanide emissions and species loss • International Cyanide Management Code • Mercury management, study, monitoring, reporting <p>Environment and Biodiversity:</p> <ul style="list-style-type: none"> • “No-Go” areas in high-grade protected areas • Regulation for protected and unprotected areas • “Biodiversity Impact Assessment” with stakeholder consultation, monitoring system, reporting • Biodiversity management plans including policies, best-practices, protective measures with hierarchical steps • Reproduction-, renaturation- and aftercare plans, consultation with communities • Environmental and Social Impact Assessment • Environmental Monitoring
	Social and societal issues	<p>Workers’ Rights:</p> <ul style="list-style-type: none"> • Freedom of association and collective bargaining • Trade union organizations and protection of representatives • Regulation for replacement workers in case of strikes • Information for workers • Employee participation and human relations • Anti-discrimination • Programs for employment of disadvantaged people • Grievance mechanisms for employees • Child labour • Disciplinary proceeding • Prohibition of temporary contracts • Understandable contract • Remuneration • Payment of overtime • Working time • Retrenchment

IRMA Standard for Responsible Mining		
Summarized standard requirements	Social and societal issues	<p>Health and Safety:</p> <ul style="list-style-type: none"> • Emergency planning • Occupational safety and health practices • “Fly-in/Fly-out” mining sites • HIV/AIDS, tuberculosis, malaria • Risk Assessment and protective measures • Monitoring and reporting <p>Communities and other Stakeholder:</p> <ul style="list-style-type: none"> • Policy concerning social issues • Community- and stakeholder integration • Rights of indigenous people • Protection of cultural heritage • Resettlement • Human Rights Impact Assessment • Human rights and armed conflicts • Security forces • Monitoring of impacts on community
	Corporate Governance and Trade	<ul style="list-style-type: none"> • Legal compliance • Transparency of payments and revenues • Anti-corruption measures • Financial protection of reinstatement costs and long-term water treatment and monitoring (e. g. trust fond) • Grievance mechanisms
Rigor or flexibility of the standard model for compliance		<p>(1) Obligatory standard catalogue (incl. incremental catalogues and deadlines for corrective measures) or</p> <p>(2) Compulsory voting standard catalogue</p> <p>IRMA will have a status known as “Certification” which is achievement of all major requirements, it will also have recognized status “Candidate” as more entry-level recognition for mine sites meeting a designated subset of core requirements in the Standard; finally, IRMA will also offer “benchmarking” of performance for only targeted chapters (such partial review will not achieve Certification or Candidate status, but allows a mine site to use IRMA’s accredited independent third party auditors to demonstrate performance and potential improvement in a key area of topic interest, e. g. worker safety or human rights)</p>
Provided documents and tools		<ul style="list-style-type: none"> • IRMA Standard for Responsible Mining (Draft version 2.0, 2016) • IRMA Responses to Comments on the Draft Standard 1.0., Excel spreadsheet (2016) • IRMA-Anglo American Unki Mine Field Test Report (2016) • Three new webinars (2016): Introducing the Standard for Responsible Mining Draft v.2.0; Social Responsibility Chapters, Environmental Responsibility Chapters • IRMA-Stillwater Field Test (2015) • IRMA Standard Development Procedure (2013)
Number of quoted international conventions and other guidance		(2) 10–20
Referral to other standards for more information or guidance		<p>(1) Yes, existing standards and terminologies are integrated:</p> <ul style="list-style-type: none"> • IFC Performance Standards 1, 2, 4, 5 –10 • ICMM Good Practice Guidance for Mining and Biodiversity • The Cyanide Management Code • Extractive Industries Transparency Initiative (EITI) • “High Conservation Value” of the Forest Stewardship Council • Greenhouse Gas Protocol Corporate Standard
Recognition of other standards for the proof of compliance of certain issues		<p>(1) Yes</p> <p>International Cyanide Management Code</p> <p>Greenhouse Gas Protocol Corporate Standard</p>

IRMA Standard for Responsible Mining	
Assessment of Standard Compliance and Transparency of the Results	
Subject-Matter of the conformity assessment	Standard compliance of the mine site will be audited through multiple sources of information (inspections, documents, interviews).
Type of conformity assessment (audit)	(1) Verification and certification
Auditor status and frequency of audits	(1) 3 rd Party (assurance system under development; probably audits every 3–5 years with some type of interim reviews similar to FSC)
Assessment elements	Assessment requirements under development
Grievance mechanisms for auditor decisions	IRMA does have a grievance process in construction (as part of the verification/assessment system) for any stakeholder to appeal a decision
Whistle-blowing mechanism for standard non-compliances	Assessment requirements under development
Party publishing the results	(1) Standard initiative: (frequency unknown) A system for publishing compliance is planned.
Degree of detail of the published results	Requirements under development
List of References	
<ul style="list-style-type: none"> • www.responsiblemining.net • Initiative for Responsible Mining Assurance (2016): <i>IRMA Standard for Responsible Mining IRMA-STD-001, Draft 2</i>. Available online at http://www.responsiblemining.net/irma-standard/irma-standard-draft-v2.0, accessed 21.02.2017. • Initiative for Responsible Mining Assurance (2016): <i>Introducing the Standard for Responsible Mining Draft v.2.0</i>, webinar, available online at http://www.responsiblemining.net/irma-standard/stakeholder-feedback/webinars, accessed 23.08.16. • Initiative for Responsible Mining Assurance (2016): <i>About IRMA</i>. Available online at http://www.responsiblemining.net/about-irma/, accessed 08.24.2016. • Initiative for Responsible Mining Assurance (2016): <i>Stakeholder Consultation Timeline</i>. Available online at http://www.responsiblemining.net/irma-standard/stakeholder-feedback/stakeholder-consultation-timeline, accessed 08.24.2016. • Initiative for Responsible Mining Assurance (2016): <i>IRMA Responses to Comments on the Draft Standard 1.0. Excel spreadsheet</i>. Available online at http://www.responsiblemining.net/irma-standard/draft_07-2014, accessed 21.02.2017. • Initiative for Responsible Mining Assurance (2014): <i>IRMA Standard for Responsible Mining Draft v1.0</i>. Available online at www.responsiblemining.net/images/uploads/IRMA_Standard_Draft_v1.0_07-14.pdf, accessed 08.09.15. 	

ITRI Tin Supply Chain Initiative for Tin, Tantalum and Tungsten

ITRI Tin Supply Chain Initiative (iTSCi): iTSCi Membership Programme	
Background Information	
Initiators of the scheme	International Tin Research Institute (ITRI), Tantalum-Niobium International Study Center (TIC)
Administrative body	International Tin Research Institute (ITRI)
Founding date and location	1932 founded as International Tin Research and Development Council, 1995 changed into International Tin Research Institute (ITRI), Hertfordshire, Great Britain
Publication of the first standard version	In 2010, iTSCi was initiated. However, there was no development of an individual standard because the initiative aims at providing practical implementation of the due diligence recommendations from two international guidance:
Up-to-date standard version and next revision	<ul style="list-style-type: none"> • The OECD's Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas • The UN Security Council Resolution 1952 (2010)

ITRI Tin Supply Chain Initiative (iTSCi): iTSCi Membership Programme	
Background of the scheme	(2) Scheme is part of an existing institution (e. g. association or research institute) or requirements are developed by an existing institution
Stakeholder groups in a) first standard-setting b) latest revision (if applicable)	There is no own standard and therefore no standard setting process. (1) Civil society (2) Private sector (3) Public institutions
Subject-Matter of the Standard	
Main objective	The ITRI Tin Supply Chain Initiative is a joint voluntary industry initiative with a traceability and due diligence membership programme aiming to facilitate international market access of 'conflict-free' 3T-minerals produced and traded in DR Congo and the Great Lakes Region. Therefore, it provides a traceability system and database, due diligence measures and auditing of basic sustainability requirements in relation to conflict-affected and high-risk areas as recommended by the OECD and UN due diligence guidance. "Members are expected to recognize all aspects of these guidelines and cooperate with risk assessment and audits as required, as well as working on their own company policies and contracts to influence the supply chain in a positive way." iTSCi also facilitates compliance with section 1502 of the US Dodd Frank law on conflict minerals but is not a certification system in itself. Moreover, iTSCi has Memoranda of Understanding with the DRC, Rwanda and Burundi, as well as the International Conference on the Great Lakes Region (ICGLR) upon data exchange and capacity building. For example, governments provide mining services and agents in the field to perform traceability while training is provided by the iTSCi Field Operator (US-based NGO "PACT" or other local organizations).
Target commodities	3T-minerals: cassiterite (tin), columbo-tantalite (tantalum), wolframite (tungsten) and any other tin, tantalum or tungsten-bearing minerals
Application of the standard along the supply chain	<ul style="list-style-type: none"> • Upstream: traceability is established from mines to smelters/refineries and exporters • Downstream: companies can apply and pay for access to supply chain specific data to inform their own due diligence and traceability
Proof of origin	(1) Yes: The traceability system consists of tags for the mineral bags (mine tag, negotiant tag, batch number and iTSCi shipment number) and log books which need to be used by each supply chain actor to note all relevant aspects of trading minerals. The data is fed into a web-based database and further analyzed but not publicly accessible. However, the data is fully shared with host governments, the UN Group of Experts and other relevant institutionalized mechanisms. Moreover, downstream member companies can buy data to inform their own due diligence reports.
Assessment unit	(1) All facilities: all mine sites
Geographic focus	(1) National: Full members/Upstream companies from DR Congo, Burundi and Rwanda; other countries from the Great Lakes Region countries may be added in future (2) Global: Associate Members/Downstream companies
State of implementation	<ul style="list-style-type: none"> • About 1300 mine sites from Burundi, Rwanda and DR Congo entered iTSCi until 2015, 850 of which are active and employ about 80.000 workers (July 2015) who provide for about 375000 dependents. From 2011 until 2014 the yearly export numbers of 3T minerals increased from 10.000t to 18.000t. • 47 audit summary reports of the upstream companies are uploaded for the time of 2011 until 2014. One report can cover several mine sites/companies of one region or country. • Due diligence reports of the Full Members are published by iTSCi on their website – the number totaled up to 75 in 2015. Until 2014 the majority of the members who were in the Programme for a year or longer, has published such a due diligence report. • 250 provisional Full and Associate Members spanning 35 countries (2016)

ITRI Tin Supply Chain Initiative (iTSCi): iTSCi Membership Programme		
Membership program		<p>(4) Yes:</p> <ul style="list-style-type: none"> • Full Membership (174 members in 2015): local or international trader or smelter, local mine company, local exporter, any 'upstream company' (as defined in the OECD Guidelines), and any companies associated with the upstream mineral trade such as mineral transport and mineral assay companies • Associate Membership (8 members in 2015): users of the minerals, product manufacturers and 'downstream companies' (as defined in the OECD Guidelines), authorized auditors of such member companies, financial supporters <ul style="list-style-type: none"> → Currently companies from communications-, electronics-, IT- and aviation sector make up the Associate Members. → For access to data or Confidential Business Information within their supply chain an additional fee needs to be paid.
Recent developments		<ul style="list-style-type: none"> • Since 2010 the initiative developed quickly from a pilot into a compulsory requirement for the regional 3T mineral trade: until 2014 it was achieved that 92 % of the total cassiterite from Central- and East Africa was traceable through iTSCi. This is ascribed at the close working relationship with tin smelters. • Currently, there is duplication on various process levels with the Regional Certification Mechanism of the ICGLR. • In 2015, The dutch government financed a 3-year project named „Scaling up Mineral Trade“ run by iTSCi's partner on the ground Pact. The project aims at further broadening the use of iTSCi in the DR Congo. Additionally to member fees iTSCi is also financed by tonnage-specific levies (5 % of the exported minerals' value) which are currently covered by the mining company.
Requirements of the Standard		
Summarized standard requirements	Environmental issues	No environmental requirements
	Social and societal issues	<p>“Priority Checks” from the Annex II of the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict Affected and High Risk Areas:</p> <ul style="list-style-type: none"> • Forced labour • Child labour • Human Rights • Inhumane treatment • Illegal control, taxation and extortion • Direct or indirect support to non-state armed groups • Direct or indirect support to public and private security forces • Bribery and fraudulent misinterpretation of the origin of minerals • Money laundering • Payment of taxes, fees and royalties (incl. EITI) • Sources of evidence for the audit report
	Corporate Governance and Trade	<p>“5-Step Framework” from the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict Affected and High Risk Areas:</p> <ul style="list-style-type: none"> • STEP1: Establish Strong management systems: Policy, support supply chain due diligence, controls and transparency over the mineral supply chain, strengthen the company engagement with suppliers, company level grievance mechanism • STEP 2: Identify and assess risks in the supply chain: Scope for the risk assessment, mapping the factual circumstances of the supply chain(s) underway and planned, assess risks in the supply chain • STEP 3: Design and implement a strategy to respond to identified risks: Report to senior management, adopt and implement a risk management pla, additional fact and risk assessment for risk requiring mitigation • STEP 4: Independent third party audits of smelters due diligence practices: Allow access to auditors, contribute to their customer smelters supply chains • STEP 5: Report annually on supply chain due diligence • iTSCi traceability system implementation and compliance

ITRI Tin Supply Chain Initiative (iTSCi): iTSCi Membership Programme	
Rigor or flexibility of the standard model for compliance	(1) Obligatory standard catalogue (incl. incremental requirements) Full Members have to adopt the OECD Annex II Model Supply Chain Policy and fulfill all obligation recommended by the OECD Guidelines. They have to provide information to the immediate downstream purchasers e. g. on any payments made to governments and provide prompt and honest answers to any questions from operators of the Programme. They have to act on required mitigation or improvement plans, set out by the Steering Committee based on the findings of the risk assessment, within a specified time period and allow access to Auditors or other authorized validators of the Programme. "Fraudulent or criminal acts by a Full Member...] will result in immediate expulsion ...] Expelled Full Members may subsequently re-apply for admission to the Programme. The Risk Assessor will review the facts and take account of any change in circumstances, before advising the Steering Committee. Additional terms of membership may be imposed for a set period of time after re-admittance.
Provided documents and tools	<ul style="list-style-type: none"> • ITRI Tin Supply Chain Initiative: iTSCi Membership Programme (2011) • iTSCi Membership Programme Agreement Summary (2011) • iTSCi Programme Review (2014) • iTSCi joint industry traceability and due diligence programme (2016) • Mineral trade data management and analysis (year unknown)
Number of quoted international conventions and other guidance	(1) < 10
Referral to other standards for more information or guidance	(1) Yes: ISO Norms 19011 and 17021 for government audits
Recognition of other standards for the proof of compliance of certain issues	(2) No However, iTSCi compliments other initiatives: <ul style="list-style-type: none"> • CFSI's Conflict-Free Smelter Programme (CFSP) • ICGLR's Regional Certification Initiative • BGR's Certified Trading Chains Initiative (CTC) For example: A smelter getting CFSP-certified can prove its fulfillment of upstream due diligence if the upstream supply chain companies can provide evidence that they are participating in iTSCi.
Assessment of Standard Compliance and Transparency of the Results	
Subject-Matter of the conformity assessment	Member companies are regularly visited on site and audited against an OECD based checklist. At the beginning, a preliminary audit is carried out at applicant companies to recommend or advise against an iTSCi membership and full audit.
Type of conformity assessment (audit)	(2) Verification
Auditor status and frequency of audits	(3) 3 rd Party (yearly) All member mine sites, subsequent supply chain actors and exporters are audited by Synergy Global.
Assessment elements	(2) Document analysis (3) Site inspection
Grievance mechanisms for auditor decisions	(1) Yes: no detailed information available
Whistle-blowing mechanism for standard non-compliances	(2) No
Party publishing the results	(1) Standard initiative iTSCi publishes the audit summary reports of the member companies. The supply chain data from the database is only accessible to iTSCi members on request and pay.

ITRI Tin Supply Chain Initiative (iTSCi): iTSCi Membership Programme

Degree of detail of the published results	(2) Results about single standard requirement Audit findings are given in an abbreviated form for single requirements from the OCED Guidance subject to auditing under iTSCi (basically Annex II and 5-Step Framework). Next to stating if the issue is a minor or major issue, the report also contains supporting comments, recommendation references and agreed action plans for the company prior to publication of the audit report. The full audit reports are provided to mineral purchasers "to help them make their own due diligence assessments of their supply chain."
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- ITRI Tin Supply Chain Initiative (year unknown): iTSCi joint industry traceability and due diligence programme (2016), Available online at https://www.google.de/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=0ahUKEwjunoX9k9jRAhWFFiwKHWGJA7UQFgghMAE&url=https%3A%2F%2Fwww.itri.co.uk%2Findex.php%3Foption%3Dcom_mtree%26task%3Datt_download%26link_id%3D55411%26cf_id%3D24&usg=AFQjCNHrSEX5fJ4Rq7yPNB1FZuZlmp2YQ&sig2=Nh8UL5jja0T8LSHsTtSbSg&bvm=bv.144686652,d.bGg, accessed 23.01.2017.
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LBMA Responsible Gold Guidance

LBMA Responsible Gold Guidance (RGG)

Background Information

Initiators of the scheme	The London Bullion Market Association (LBMA) expanded the scope of its Good Delivery List by creating the Responsible Gold Guidance, to include OECD's risk-based due diligence as a requirement for its members. The LBMA has contributed to the development of the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from on Conflict-Affected and High-Risk Areas and the Gold Supplement.
Administrative body	London Bullion Market Association (LBMA)
Founding date and location	1987, London, England
Publication of the first standard version	LBMA Responsible Gold Guidance Version 1 (2012)

LBMA Responsible Gold Guidance (RGG)	
Up-to-date standard version and next revision	LBMA Responsible Gold Guidance Version 6 (2015), next revision unknown
Background of the scheme	(2) Scheme is part of an existing institution (e. g. association or research institute) or requirements are developed by an existing institution
Stakeholder groups in a) first standard-setting b) latest revision (if applicable)	No information is available on the participation of the following groups: (1) Civil society (2) Private sector (3) Public institutions
Subject-Matter of the Standard	
Main objective	The LBMA Responsible Gold Guidance (RGG) is mandatory for all Refiners producing Good Delivery gold bars (LBMA Good Delivery List) and wishing to sell into the London Bullion Market. The RGG builds on existing Anti-Money Laundering and Know Your Customer management systems and auditing practices and formalizes the five step framework of the OECD Due Diligence Guidance which requires independent 3 rd -party audits of refiners' supply chain due diligence practices. In line with the OECD, the RGG therefore aims at guaranteeing only conflict-free gold respecting basic human rights is being processed on the long run by regularly auditing refineries' due diligence processes for sourcing gold and where applicable improve responsible gold sourcing practices. Compliance with the Section 1502 of the Dodd-Frank Wall Street Reform and Consumer Protection Act is also being ensured by the RGG. Recently, the RGG also applies to associate refiners who are not Good Delivery List refiners.
Target commodities	Any mined, recycled or grandfathered gold-bearing material received by the Refiner (Excluded is gold-bearing material that, due to its properties – e. g. low gold content- or requirements for processing, presents minimal risks to contribute to conflict or other forms of human rights abuse, e. g. gold obtained from the processing of copper sulphide and oxide ores; low-value industrial by-products; residue cell slimes from refining of other metals)
Application of the standard along the supply chain	Gold refineries
Proof of origin	(1) Yes A supply chain traceability system of choice has to be implemented that collects and maintains supply chain information for each lot refined. Adequate records of the supply chain documentation have to be maintained for five years and should prove that appropriate and ongoing supply chain due diligence is conducted.
Assessment unit in mining	(1) All facilities No mining site is being assessed. The due diligence process of the refiner and its associated refineries is being assessed.
Geographic focus	(2) Global
State of implementation	<ul style="list-style-type: none"> All 71 Good Delivery List refiners are compliant. Since introduction of the RGG, all 71 gold refiners have completed their independent third party audit with no instances of zero-tolerance non-compliances. The Good-Delivery List distinguishes refineries according to five risk levels (Compliance, Low Risk, Medium Risk, High Risk, Zero Tolerance), however the grouping is not published.
Membership program	(1) Yes All companies within the membership must have activities that are closely related to the London market in gold or silver bullion. These activities include trading, broking, shipping and storage, mining and refining, inspection and assaying and research. There are over 137 members in more than 24 countries, admitted as either Members or Associates: <ul style="list-style-type: none"> Members (Ordinary Member or Market Maker): UK trading companies and banks; companies or organizations actively involved in the London bullion market Associate Member: different types of market participant, e. g. non-UK banks; traders, fabricators, brokers, refineries, shipping agencies, inspectors, assayers and consultants à have no voting rights

LBMA Responsible Gold Guidance (RGG)		
Recent developments		<ul style="list-style-type: none"> • “The RGG and the Third Party Audit Guidance have been updated to reflect ongoing efforts to improve the Responsible Gold program and respond to evolving industry standards. These changes include stricter timeframes for implementing corrective actions for instances of non-compliance, Country of Origin reporting, and the confidential review by the LBMA.” • The number of auditors is rising, leading to more competition and an increased variety. • Best practice guides will be developed for refiners with criteria or indicators for determining high-risk and conflict-affected areas and on how best to conduct Know-Your-Customer for scrap. • A Know-Your-Customer best practice guide for bullion banks will be developed to ensure they are compliant with the OECD and SEC due diligence rules.
Requirements of the Standard		
Summarized standard requirements	Environmental issues	No requirements
	Social and societal issues	No requirements
	Corporate Governance and Trade	<p>The LBMA Responsible Gold Guidance mirrors the OECD five-step Framework for risk-based due diligence in the mineral supply chain. The definitions are based on the OECD’s definitions as well as the Financial Action Task Force on Money Laundering’s definitions (FATF):</p> <ol style="list-style-type: none"> (1) Step 1: Establish strong company management systems <ol style="list-style-type: none"> 1.1 Adopt a company policy regarding due diligence for supply chains of gold. 1.2 Set up an internal management structure to support supply chain due diligence 1.3 Establish a strong internal system of due diligence, controls and transparency over gold supply chains, including traceability and identification of other supply chain actors 1.4 Strengthen company engagement with gold-supplying counterparties and, where possible, assist gold-supplying counterparties in building due diligence capacities 1.5 Establish a company-wide communication mechanism to promote broad employee participation and risk identification to management (2) Step 2: Identify and assess risk in the supply chain <ol style="list-style-type: none"> 2.1 Identify risks in the gold supply chain 2.2 Assess risks in light of the standards of their supply chain due diligence system 2.3 Report risk assessment to designated Senior Management (3) Step 3: Design and implement a management strategy to respond to identified risks <ol style="list-style-type: none"> 3.1 Devise a strategy for risk management of an identified risk by either (i) mitigation of the risk while continuing trade, (ii) mitigation of the risk while suspending trade or (iii) disengagement from the risk 3.2 Where a management strategy of risk mitigation is undertaken, it should include measurable steps to be taken and achieved, monitoring of performance, periodic reassessment of risk and regular reporting to designated senior management (4) Step 4: Arrange for an independent third-party audit of the supply chain due diligence (5) Step 5: Report on supply chain due diligence

LBMA Responsible Gold Guidance (RGG)	
Rigor or flexibility of the standard model for compliance	<p>(1) Obligatory standard catalogue (incl. incremental requirements)</p> <p>Refiner's gold supply chain management systems and practices are subject to auditing by independent and competent third parties. Refiners submit a corrective action plan to the LBMA Physical Committee when there is a Medium /High Risk /Zero Tolerance Non Compliance and/or the Refiner fails to satisfy one or more of the requirements as set out in Steps 1 to 5 of the LBMA RGG. The Refiner's Corrective Action Plan should include for each Medium /High Risk /Zero Tolerance non-compliance identified:</p> <ul style="list-style-type: none"> • A description of the issue; • Reference to the relevant section in the LBMA Responsible Gold Guidance; • Assigned risk rating of the non-compliance; • Corrective actions to be taken for each non-compliance identified; • The timeframe for completion of corrective actions for each non-compliance identified (not exceeding 90 days or immediate action for zero-tolerance non-compliances) • The person responsible for the implementation of each corrective action
Provided documents and tools	<ul style="list-style-type: none"> • A Guide to The London Bullion Market Association (2016) • LBMA Third Party Audit Guidance, Version 3 (2016) • LBMA Responsible Gold Guidance, Version 6 (2015) • Responsible Gold – Overview, Update and Next Steps (Power Point Presentation, 2014)
Number of quoted international conventions and other guidance	(1) < 10
Referral to other standards for more information or guidance	<p>(1) Yes</p> <ul style="list-style-type: none"> • ISAE 3000 Non-Financial Audit Approach • ISO 19011:2011 Management Systems Audit Approach (one of both audit options has to be selected)
Recognition of other standards for the proof of compliance of certain issues	<p>(1) Yes</p> <p>The LBMA recognizes that Refiner's may already have internal or external assurance processes that can be relied on for providing evidence of compliance with LBMA requirements:</p> <ul style="list-style-type: none"> • Regulatory anti-money laundering audits • Related gold supply chain due diligence initiatives, including: <ul style="list-style-type: none"> – Conflict-Free Sourcing Initiative's (CFSI) Gold Supply Chain Transparency – Refinery Audit Protocol: Refiner is validated as a conflict-free smelter and the LBMA audit period covers at least ¾ of the validation or certification period of CFSI – Responsible Jewellery Council's (RJC) Chain-of-Custody –Standard: "CoC Transfer Document" – World Gold Council's Conflict-Free Gold Standard (CFGs): "Management Statement of Conformance Document" which accompanies the gold shipments that gold-mining companies provide to Refiners – Fairtrade and Fairmined Standard for Gold from Artisanal and Small-Scale Mining, including Associated Precious Metals: "Fairtrade or Fairmined Certificate"
Assessment of Standard Compliance and Transparency of the Results	
Subject-Matter of the conformity assessment	<p>Refiner's gold supply chain management systems and practices are subject to auditing by independent and competent third parties. When there are medium-risk, high-risk or zero-tolerance non-compliances with one or more of the requirements as set out in Steps 1 to 5 of the LBMA Responsible Gold Guidance, the Refiner shall prepare a Corrective Action Plan. Auditors make recommendations about how to improve the gold supply chain practice. The two auditor deliverables vary with the chosen assurance approach:</p>

LBMA Responsible Gold Guidance (RGG)	
Subject-Matter of the conformity assessment	<p>ISO 19011:2011:</p> <p>(1) <i>The LBMA Refiner Assessment Report</i></p> <ul style="list-style-type: none"> • Assessment criteria • Assessment findings, including: a description of any non-compliance or observation, its frequency, evidence found to substantiate it and recommended corrective action • Recommendations for improvement • Assessment conclusions <p>(2) <i>The LBMA Summary Report</i></p> <ul style="list-style-type: none"> • Assessment criteria • Assessment findings including: a description of any non-compliance or observation and the timeframe for the implementation of corrective actions • Assessment conclusion including the auditor or audit team's determination of the Refiner's compliance level for each step of the LBMA Responsible Gold Guidance • Annex detailing Countries of Origin for mined gold <p>ISAE 3000:</p> <p>(1) <i>The Independent Assurance Report</i></p> <ul style="list-style-type: none"> • publicly disclosed alongside the Refiner's Compliance Report • contains auditors conclusion • Annex detailing Countries of Origin for mined gold is confidential <p>(2) <i>The Management Report is primarily addressed to the Refiner:</i></p> <ul style="list-style-type: none"> • Assurance observations, findings and recommendations for improvement • Description of any low-risk deviations from conformance identified by the auditor (refer to Appendix 4 for definitions of compliance and non-compliance); • Specific observations with respect to the Refiner's Corrective Action Plan and implementation progress; • Assurance conclusion (or reference to the independent assurance report)
Type of conformity assessment (audit)	(3) Verification and certification: Bullions get labelled
Auditor status and frequency of audits	<p>(3) 3rd Party:</p> <ul style="list-style-type: none"> • First year and every three years: Full assessment (ISO 19011) (frequency may be increased with medium or high-risk non-compliances); reasonable assurance (ISAE 3000) • Every 12 months: Assessment review (ISO 19011); limited assurance (ISAE 3000) • 90 days following an audit: follow-up assessment (ISO 19011); follow-up audit to reasonable assurance level (ISAE 3000)
Assessment elements	<p>(1) Self-Assessment (ISEA 3000)</p> <p>(2) Document analysis (ISO 19011, ISEA 3000)</p> <p>(3) Site inspection (ISO 19011, ISEA 3000)</p> <p>(4) Interviews with workers, managers, etc. (ISO 19011, ISEA 3000)</p>
Grievance mechanisms for auditor decisions	(1) Yes: No detailed information available
Whistle-blowing mechanism for standard non-compliances	(1) Yes: No detailed information available
Party publishing the results	<p>(1) Standard initiative The members of the Good Delivery List are published online.</p> <p>(2) Company The Refiner is required to report publicly on its gold supply chain due diligence policies and practices according to Step 5 of the LBMA Responsible Gold Guidance. Next to the company policy regarding gold supply chain, the refiner has to publish one or two audit deliverables depending on the audit approach chosen:</p> <ul style="list-style-type: none"> • ISO 19011: LBMA Summary Report • ISAE 3000: Independent Assurance Report; Refiner's Compliance Report

LBMA Responsible Gold Guidance (RGG)	
Degree of detail of the published results	<p>(2) Results about single standard requirement For both audit approaches the refiner must publish the audit conclusion for each step of the LBMA Responsible Gold Guidance.</p> <ul style="list-style-type: none"> • ISO 19011: Refiners are not required to disclose publicly the Annex report disclosing the countries of origin of mined gold • ISAE 3000: The Refiner Compliance Report includes the following information: <ul style="list-style-type: none"> – Name of refinery; Time period of compliance; – Summary of activities undertaken during the period to demonstrate compliance; – Refiner's level of compliance with each step of the <i>LBMA Responsible Gold Guidance</i>; – Management conclusion statement on compliance with the LBMA Responsible Gold Guidance. – Annex: List of countries of origin of mined gold for the reporting period
List of References	
<ul style="list-style-type: none"> • http://www.lbma.org.uk • The London Bullion Market Association (2014): <i>LBMA: Responsible Gold – Overview, Update and Next Steps. Power Point Presentation</i>. Available online at http://www.lbma.org.uk/responsible-gold, accessed 08.25.2016. • The London Bullion Market Association (2015): <i>LBMA Responsible Gold Guidance. Version 6</i>. Available online at http://www.lbma.org.uk/responsible-gold, accessed 08.25.2016. • The London Bullion Market Association (2016): <i>LBMA Third Party Audit Guidance. Version 3</i>. Available online at http://www.lbma.org.uk/responsible-gold, accessed 08.25.2016. • The London Bullion Market Association (2016): <i>A Guide to The London Bullion Market Association</i>. Available online at, http://www.lbma.org.uk/good-delivery, accessed 08.25.2016. • The London Bullion Market Association (2016): <i>LBMA – The Competent Authority for the world Bullion Market</i>. Available online at http://www.lbma.org.uk/about-us, accessed 08.25.2016. • The London Bullion Market Association (2016): <i>LBMA Responsible Gold Programme. LBMA Third Party Audit Guidance</i>. Available online at http://www.lbma.org.uk/assets/LBMA_Third_Party_Audit_Guidance_v3_20160311.pdf, accessed 08.25.2016. 	

MAC's Towards Sustainable Mining

Towards Sustainable Mining (TSM)	
Background Information	
Initiators of the scheme	Mining Association of Canada (MAC)
Standard initiative	Mining Association of Canada (MAC)
Location of the standard initiative	Ottawa, Canada
Founding date of the standard initiative	2004
Publication of the first standard version	2004
Up-to-date standard version and next revision	The TSM Guiding Principles (basic values and targets), TSM Frameworks (issue specific commitments) and TSM Protocols (performance indicators) are developed and revised as needed
Background of the scheme	(2) Scheme is part of an existing institution (e.g. association or research institute) or requirements are developed by an existing institution
Stakeholder groups participating in a) first standard-setting b) latest revision (if applicable)	(1) Civil society (a, b: by COI Panel which advises on all aspects of TSM including first standard setting and all revisions. A list of panel members as well as meeting records dating back to the start of TSM are available online.)

Towards Sustainable Mining (TSM)		
Stakeholder groups participating in a) first standard-setting b) latest revision (if applicable)	(2) Private sector (a, b) – All MAC member companies are able to contribute to the development of TSM and all producing companies with Canadian operations are required to participate in TSM as a condition of membership. (3) Public institutions – There are no public institutions involved in TSM.	
Subject-Matter of the Standard		
Main objective	TSM requires MAC members to commit to certain responsible practices through principles and frameworks and measure the improvement of mainly management systems by reporting against 23 indicators set by six assessment protocols (for 6 out of 8 identified core issues there are protocols with 3 to 5 varying indicators each).	
Target commodities	All mineral commodities	
Application of the standard along the supply chain	TSM is applied at the facility level and includes mine sites, smelters and refineries.	
Proof of origin	(2) No	
Assessment unit in mining	(2) Selected facilities: individual facilities	
Geographic focus	(1) National: Canada (mandatory for MAC members) (2) Global: Some companies voluntarily report against the TSM indicators for their international mining sites and some are also publishing those results. The national chambers of mines of Finland, Argentina and Botswana have formally adopted TSM	
State of implementation	In 2014, 23 members published facility-level performance indicator, comprising 63 facilities. 8 companies had their results already externally verified.	
Membership program	(1) Yes: <ul style="list-style-type: none"> 39 “Full Members”: companies that operates a mine in Canada or abroad. Full members also include companies actively involved in mine development and exploration. Members with producing mines in Canada are required to participate in TSM; entitled to vote; opportunity to become part of the steering group 50 “Associate Members”: company is not directly active in mining business but delivers products or service features; equal privileges except for voting power 	
Recent developments	<ul style="list-style-type: none"> A significant update of the TSM tailings management protocol is scheduled to be complete in March 2017 The development of a TSM Water Protocol will commence in 2017 In March 2017 MAC also announced a new membership commitment requiring members that rely upon private or public security forces to implement a human rights and security approach consistent with the Voluntary Principles on Security and Human Rights (VPs) and based on a determination of risk at mining facilities that they control. Members with international mining operations will report on their implementation annually in MAC’s Towards Sustainable Mining Progress Report. Finnish Mining Association FinnMin’s adopts TSM in November 2015 as the first mining association outside of Canada Camara Argentina de Empresarios Mineros, Argentina’s national Chamber of Mines, adopted TSM in October 2016 The Chamber of Mines of Botswana adopted TSM in February 2017 The Mining Association of British Columbia and the Quebec Mining Association are implementing TSM 	
Requirements of the Standard		
Summarized standard requirements	Environmental issues	<ul style="list-style-type: none"> Tailings Management indicators: Policy and commitment; management systems; assigned responsibility; annual review; operation- and surveillance manual Biodiversity Conservation Management indicators: Policy, accountability and communications; conservation plans and implementation; reporting Energy Use and GHG Emissions Management indicators: management systems, report systems, performance targets

Towards Sustainable Mining (TSM)		
Summarized standard requirements	Environmental issues	<ul style="list-style-type: none"> • Crisis Management and Communications Planning indicators: preparedness; review; training • Mine closure policy framework • Water policy framework
	Social and societal issues	<ul style="list-style-type: none"> • Aboriginal and Community Outreach indicators: Identification of Community of Interest (COI); commitment and communication; response mechanism; reporting • Health and Safety indicators: Policy; plans, implementation and operation; training and behaviour; monitoring and reporting; performance
	Corporate Governance and Trade	<ul style="list-style-type: none"> • No protocols or policies
Rigor or flexibility of the standard model for compliance	<p>(3) Voluntary degree of compliance with the standard catalogue Indicators for management practices with a 5 level performance scale: AAA, AA, A, B, C, for example: AAA: leadership/excellence AA : integration of management systems in management decisions and functions A : management system introduced B : management system immature C : no management system in place, uncoordinated activities New MAC members have three years to start publicly reporting. On the long run level A or higher shall be achieved by all mining companies.</p>	
Offered documents and tools	<ul style="list-style-type: none"> • TSM Guiding Principles (basic values and targets) • Six TSM Protocols (with performance indicators): Energy and GHG Emission Management Tailings Management Crisis Management Biodiversity Conservation Management Aboriginal and Community Outreach Safety and Health • Five TSM Frameworks (with policy commitments): Biodiversity Conservation Management Mine Closure Aboriginal and Community Outreach Safety and Health Water • Additional Guidelines and Manuals: <ul style="list-style-type: none"> – A Guide to the Management of Tailings Facilities (2011) – 2017 edition will be released in the first half of 2017. – Developing an Operation, Maintenance and Surveillance Manual for Tailings and Water Management Facilities (2011) – A Guide to Audit and Assessment of Tailings Facility Management (2011) – Crisis Management and Communications Planning Reference Guide (2016) – Energy and GHG Emissions Management Reference Guide (2014) – A Practical Design and Implementation Guide for the Resource Development Industry (2015) 	
Number of quoted international conventions and other guidance	(1) < 10	
Referral to other standards for more information or guidance	(1) Yes: climate change policy from the International Council on Mining and Metals (ICMM)	
Recognition of other standards for the proof of compliance of certain issues	(1) Yes TSM has developed a checklist for ISO 50001 and OHSAS 18001 to be used during external verification. If a company has ISO 50001 certification or OHSAS 18001 certification, they can use a separate checklist for the energy/GHG protocol or the Safety/Health protocol respectively. The checklists include elements additional to these standards.	

Towards Sustainable Mining (TSM)	
Assessment of Standard Compliance and Transparency of the Results	
Subject-Matter of the conformity assessment	Annual self-assessments of the reported performance indicators, set in six TSM assessment protocols, and verified externally every three years by MAC-trained verifiers (all verifiers are listed on the TSM website). For water and mine closure there are no indicators, though indicators for water are being developed in 2017. There is no assessment of the alignment of policies.
Type of conformity assessment (audit)	(2) Verification
Auditor status and frequency of audits	(1) 1 st party (yearly) (3) 3 rd party (all 3 years) “Annually, the Community of Interest (COI) Advisory Panel selects a sample of mining companies to appear before the Panel and participate in a Post-Verification Review. In this review, the verified results are discussed and the Panel asks questions about the company’s operations.” (TSM website)
Assessment elements	(1) Self-Assessment (2) Document analysis (3) Site inspection (4) Interviews with workers, managers, etc.
Grievance mechanisms for auditor decisions	(1) Yes There is an arbitration process for when there is a difference in opinion between a facility and its verifier. Through this process TSM asks an independent consultant (who is an expert on TSM) to draft a response and recommendation. A sub-committee of the board makes a decision based on this recommendation
Whistle-blowing mechanism for standard non-compliances	(2) No
Party publishing the results	(1) Standard initiative: The audit reports are not published. MAC yearly publishes the TSM progress report which includes the performance levels for the various Canadian mine site which can include local processing and tailings facilities. Smelters and refineries are also included. Those results are verified externally in every third year. Additionally, several members report on performance for their international operations. The TSM progress report clearly indicates who has verified their results in each year. (2) Company: Some companies publish their levels achieved on their own homepage.
Degree of detail of the published results	(2) Results about single standard requirements: The audit reports are not published. All the performance levels per indicator are published at the facility level. Individual results are published for each indicator for each mine site. For example a mine with a tailings facility will report its scores for each of the five tailings indicators.
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<ul style="list-style-type: none"> • mining.ca/towards-sustainable-mining • The Mining Association of Canada (2014): <i>Towards Sustainable Mining Progress Report 2014</i>. Available online at http://mining.ca/sites/default/files/documents/TSM_Progress_Report_2014.pdf, accessed 31.08.15. • The Mining Association of Canada (2015): <i>Towards Sustainable Mining 101: A Primer</i>. Available online at http://mining.ca/sites/default/files/documents/TSM_Primer_March_2015.pdf, accessed 31.08.15. • The Mining Association of Canada (2016): <i>Towards Sustainable Mining Progress Report 2015</i>. Available online at http://mining.ca/sites/default/files/documents/TSM-Progress-Report-2015_0.pdf, accessed 17.08.2016. • The Mining Association of Canada (2016): <i>About Us</i>. Available online at http://mining.ca/about-us, accessed 08.25.2016. • The Mining Association of Canada (2016): <i>Components of TSM</i>. Available online at http://mining.ca/towards-sustainable-mining/how-tsm-works/components-tsm, accessed 08.25.2016. 	

ICGLR's Regional Certification Mechanism for Tin, Tantalum, Tungsten and Gold

Regional Certification Mechanism (RCM)	
Background Information	
Initiators of the scheme	The International Conference on the Great Lakes Region (ICGLR) ²⁵ established the Regional Initiative against the Illegal Exploitation of Natural Resources (RINR) comprising the RCM among other tools.
Administrative body	International Conference on the Great Lakes Region (ICGLR) – Conference Secretariat and Member State Committees
Founding date and location	2009 (RINR foundation), Bujumbura, Burundi (ICGLR Secretariat)
Publication of the first standard version	ICGLR Regional Certification Mechanism: Certification Manual and Appendix, Version 1 (2011)
Up-to-date standard version and next revision	ICGLR Regional Certification Mechanism: Certification Manual and Appendix, Version 1 (2011), next revision not decided yet
Background of the scheme	(3) Scheme is governed by a public institution and positioned in legal regulations
Stakeholder groups in a) first standard-setting b) latest revision (if applicable)	(1) Civil society (2) Private sector (3) Public institutions (a) The standard was developed by consultants in the context of regional German development cooperation with the ICGLR and then consulted and approved by ICGLR member states.
Subject-Matter of the Standard	
Main objective	The main objective of the RCM is to support conflict-free supply chains for “conflict minerals” (gold and 3Ts). As a response to decades of conflicts in the Great Lakes region, the Member states of the ICGLR established the RINR including six inter-linked tools, namely formalization of the ASM sector; a Regional Mineral Certification Mechanism; the EITI; a database on conflict mineral flows in the region; a whistle blowing mechanism; and the harmonization of relevant national legislation across the region. The RCM requires upstream companies to comply with minimum requirements relating to conflict issues and implementation of due diligence practices based on the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas. Additionally, the CTC standards were integrated into the RCM as “progress criteria”, however not for enforcement but for monitoring of production conditions. The RCM is implemented at two levels, national and regional. At the national level, Member states are supposed to facilitate (1) mine site inspections by the national mining authority; (2) chain of custody tracking (outsourcing to industry initiatives allowed); (3) mineral export shipment certification (via a national certification unit working in coordination with (1) and (2)), and (4) data management and exchange with the ICGLR secretariat for all of the above processes. At the regional level, the ICGLR secretariat supports different regional committees and offices to facilitate independent auditing and verification of national-level RCM implementation. This is mainly supposed to be done through third party audits, an institutionalized ombudsman (termed “IMCA”), data monitoring and a whistle blowing mechanism.
Target commodities	“Conflict minerals 3TG”: Cassiterite (tin), columbite-tantalite (tantalum), wolframite (tungsten) and gold
Application of the standard along the supply chain	Upstream supply chain: mine (both large-and small-scale mining) until export

²⁵ The ICGLR is an inter-governmental organization made up of twelve member countries from Central Africa, namely: Angola, Burundi, Central African Republic, Republic of Congo, Democratic Republic of Congo, Kenya, Uganda, Rwanda, Republic of South Sudan (currently becoming a full member), Sudan, Tanzania and Zambia.

Regional Certification Mechanism (RCM)	
Proof of origin	(1) Yes RCM is a top-down mechanism that demands exporters to trace back the origin of minerals through disclosing their suppliers. To this end, the RCM defines Chain-of-Custody requirements and requires implementation of a traceability/tracking system for individual certified export shipments, e.g. through iTSCi, Met Trak or Better Sourcing Program (BSP). Certification takes place at the point of export where export containers get certified if the exporters and the previous supply chains and mine sites meet the respective RCM standards which are verified by various actors (mine sites: governmental inspectors/agents; Chain-of-Custody: scheme-specific verification elements; Exporters: 3rd party audits; plus risk-based spot checks along the supply chain, e.g., through the IMCA or other stakeholders).
Assessment unit in mining	(2) Selected facilities: selected mine sites (as per government definition, usually mining concessions or, in the DRC, sites/sectors within a larger concession block)
Geographic focus	<ul style="list-style-type: none"> • National: <ul style="list-style-type: none"> – Rwanda: operational since 2012 with progressively increasing scope; full country integrated in 2016 – DR Congo: partly operational since 2012 (theory), 2013 (practice), operative for selected 3T and gold mine sites; national RCM implementation methodology not fully compliant with regional requirements; allegations of corruption (certification process) – Burundi: took initial steps of implementation in 2013-2014, since then mainly focusing on iTSCi at selected 3T mine sites; no oversight on gold sector – Uganda and Tanzania: certain preparatory steps for RCM implementation taken sporadically <p>Theoretically, all twelve ICGLR member states committed themselves to implement the RCM. However, RCM implementation is mainly relevant for those Member states actually producing 3TG minerals. Member states have some limited choice how to operational the RCM but are required to ensure compliance with the regional requirements in the end.</p>
State of implementation	<ul style="list-style-type: none"> • DR Congo: <ul style="list-style-type: none"> – 408 mine sites have been inspected by a “qualification and validation mission” (proxy for RCM inspections in the DRC) leading to red-yellow-green classification (>90 % are green-flagged) – iTSCi implementation (3Ts) in all major producing provinces with increasing coverage; 327 “sub-sectors” with 420 active pits in total – 3T exports: 264 ICGLR certificates issued in 2014, 156 in 2015 – Industrial gold mining exports: 1194 ICGLR certificates issued in 2014, 682 in 2015 – Artisanal gold mining exports: 6 ICGLR certificates issued in 2014, 15 in 2015 – 3 independent 3rd party ICGLR audits of exporters • Rwanda: <ul style="list-style-type: none"> – 232 government inspected mine sites (2015), 113 inspected mine sites (2016), >90% are green-flagged – iTSCi implementation (3Ts) country-wide at 298 active tagging sites – Piloting of BSP program (alternative to iTSCi) in selected supply chains – Close to 100% of mineral export shipments (3T containers) apply for and, after CoC verification, receive an ICGLR certificate (168 certificates from January-April 2016) – 5 independent 3rd party ICGLR audits of exporters
Membership program	(2) No
Recent developments	<ul style="list-style-type: none"> • Progress in initial RCM implementation (2012–2013) focused exclusively on Member state activities (Rwanda, DRC) while, more recently (since 2015), regional-level RCM implementation, too, started to show more progress (e.g., installation of a Technical Unit at the ICGLR secretariat, accreditation of a number of audit firms).

Regional Certification Mechanism (RCM)		
Recent developments		<ul style="list-style-type: none"> • Overlap and duplication of parts of the RCM with 3T industry schemes (e.g., iTSCi) is recognized as a problem, in particular in view of fixed implementation costs vs. lower mineral/metal prices. The sustainability of auto-financing the RCM is called into question and may require more efforts for harmonization (synergies) and cost savings. Current discussions evaluate partly financing RCM implementation at the regional level through additional ICGLR Member state contributions to the ICGLR secretariat. • The low effectiveness of the RCM engagement of the informal ASM gold sector in the region is recognized as a problem; new strategies (beyond certification) may be required in order to improve gold sector governance and management practice. • In some cases, issuing of ICGLR certificates in the DRC has been associated with alleged corruption and conflict-affected mineral shipments (mainly for ASM gold) illegally received ICGLR certificates. Improved oversight efforts are required to avoid damaging the credibility of the RCM.
Requirements of the Standard at the mine site level (excluding CoC/exports)		
Summarized standard requirements	Introduction	The RCM mainly certifies Due Diligence according to the OECD Due Diligence Guidance and varying national regulations affecting sustainability topics such as environmental management. The RCM includes different mine site requirements for “artisanal” and “industrial” mines. The latter includes semi-industrial mines that represent formalized ASM operations. Requirements for these “industrial” mines are somewhat higher than for “artisanal” mines.
	Environmental issues	<ul style="list-style-type: none"> • Environmental compliance (industrial mines only) • Environmental requirements can be added by member states • Additional environmental progress criteria (only monitored, not certified): Compliance with environmental laws, impact assessment and environmental plans, management of hazardous substances, waste management, overburden and tailings, mine site reclamation planning and financing
	Social and societal issues	<ul style="list-style-type: none"> • Child labour • Forced Labour • Compliance with community relations (industrial mines only) • Community development requirements can be added by member states • Working conditions can be added by member states • Additional progress criteria for working conditions (only monitored, not certified): Personal protective equipment and trainings, remuneration, freedom of negotiation and assembly, occupational health and safety • Additional progress criteria for community development (only monitored, not certified): FPIC, stakeholder consultation, local procurement, development of infrastructure and social services, livelihood security and capacity building, women rights
	Corporate Governance and Trade	<ul style="list-style-type: none"> • Conflict and non-state armed groups • Role of Public or Private Security Forces • Illegal control and taxation of mine sites and transportation • Payments to criminal or political organizations • Payment of taxes and fees (EIT) • Extortion, bribery, corruption and illegal business • Mine site production contamination by illegal inflow of and mixing with un-certified minerals sourced from red flag mine sites. • Due diligence according to OECD • Minerals leaving the mine site are registered in a Chain-of-Custody Tracking system • Mine site operator allows reference sampling for the Analytical Fingerprint (AFP) upon request by Member state authorities or independent auditors • Additional progress criteria (only monitored, not certified): fight against corruption and fraud by mine site operator, mine site registration at member state mining authority and compliance
Rigor or flexibility of the standard model for compliance		<p>(1) Obligatory standard catalogue (incl. incremental requirements)</p> <p>3-level-scale for mine sites:</p> <ul style="list-style-type: none"> • „red flag“ indicators: serious non-compliance of minimum requirements, 6-month ban to sell or export minerals in certified supply chain (that is, effectively, suspension of mining activities)

Regional Certification Mechanism (RCM)	
Rigor or flexibility of the standard model for compliance	<ul style="list-style-type: none"> • „yellow flag“: minor non-compliance of the minimum requirements, export allowed with a 6-month grace period for implementing corrective actions, otherwise red flag classification • „green flag“ = compliance with the minimum requirements and traceability of the origin of minerals <p>→ Individual supply chains are independently verified through a top-down audit starting at the exporter and including a representative sample of associated mine sites. The third party auditor selects certain mine sites to be included in a given audit (selecting all associated mine site would not be feasible, financially and organizationally).</p> <p>→ The CoC mineral tracking scheme is supposed to be assessed at the system-level by the Independent Mineral Chain Auditor (IMCA) in an ombudsman function.</p>
Provided documents and tools	<ul style="list-style-type: none"> • Rwandan ICGLR mine sites database (2015) • Rwanda Mine Site Inspection Template (2013) • ICGLR Audit Methodology (2013) • ICGLR Regional Certification Mechanism (RCM) – Certification Manual (2011) • ICGLR Appendices to Certification Manual (2011)
Number of quoted international conventions and other guidance	(1) < 10
Referral to other standards for more information or guidance	(1) Yes <ul style="list-style-type: none"> • iTSCi • Conflict-Free Smelter Initiative (CFSI)
Recognition of other standards for the proof of compliance of certain issues	(1) Yes <p>The RCM recognizes industry initiatives active in the 3T sector, such as iTSCi or BSP, to fulfill the Chain of custody tracking component for RCM supply chains (from mine to exporter). However, duplication exists because these industry initiatives provide additional services, beyond CoC tracking, such as audits that are also directly facilitated through the RCM.</p>
Assessment of Standard Compliance and Transparency of the Results	
Subject-Matter of the conformity assessment	The ICGLR Mineral Tracking and Certification Scheme has four main pillars which shall ideally serve as a guarantee that minerals exported with an ICGLR Certificate are conflict-free: <ol style="list-style-type: none"> 1. Mineral Tracking from Mine Site to Export via a member state database <ul style="list-style-type: none"> • Mine Site Inspection and classification as green/certified, yellow or red/uncertified) according to the RCM criteria • Standards for Chain of Custody Tracking within Member States • Certification of Mineral Exports: Standards for Exporters of Minerals from Certified Mine Sites and for Issuing ICGLR Mineral Certificates 2. Independent Third Party Audits: scope from exporter over transporter up to mine site; risk assessment 3. ICGLR Independent Mineral Chain Auditor: monitors the full supply chain for discrepancies and anomalies arising from system data; initiates independent investigations; on-going risk assessments of the conflict situation in mining areas where armed groups are potentially active; closing loopholes 4. Regional Mineral Tracking via ICGLR Database and transfer of member state databases
Type of conformity assessment (audit)	(3) Verification and certification
Auditor status and frequency of audits	(3) 3 rd Party (yearly): mine inspection by governmental inspectors 3 rd Party (yearly): independent audit with focus on the exporter and covering a selected fraction of the associated upstream supply chain (incl. transport) up to the mines sites. Note: huge mine sites may be directly registered as exporters.
Assessment elements	(2) Document analysis (3) Site inspection (4) Interviews with workers, managers, etc.

Regional Certification Mechanism (RCM)	
Grievance mechanisms for auditor decisions	(1) Yes: The draft audit report (exporter third party audits) is supposed to be sent to the auditee for review prior to review of the audit report by the ICGLR Audit Committee. There is no formal grievance mechanism for mine inspections done by national authorities within the RCM. However, national regulative frameworks might foresee certain mechanisms to perform similar functions.
Whistle-blowing mechanism for standard non-compliances	(1) Yes: indirectly – there is a general whistle blowing mechanism as one of the six tools of the RINR that may be also used to report RCM-specific issues. However, the mechanism has not been implemented in practice beyond the pilot stage in few regions.
Party publishing the results	(1) Standard initiative (national authorities) The results of annual mine site inspections are registered by national authorities in a national database. These results are semi-regularly transmitted to the ICGLR Secretariat which shall publish the results on its website. In practice, publication is ensured by national sector authorities directly on their websites.
Degree of detail of the published results	(2) Results about single standard requirement In case of Rwanda, an Excel database is accessible on the website which shows various information about 114 assessed mine sites in Rwanda (2017): mining license information, number of workers, mine production details, certification status (RCM), red flag information (e.g. child labour, armed groups, forced labour, etc.), date of inspection and inspection comments, progress criteria score (CTC), national mines site requirements and other. Third party audit results are published as summaries, providing aggregated information on the employed audit methodology and RCM criteria evaluations performed by the auditor.

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RJC Code of Practice & Chain-of Custody Standard for Diamonds, Gold and Platinum

Responsible Jewellery Council (RJC)	
Background Information	
Initiators of the scheme	14 organizations from across the diamond and gold jewellery supply chain (e.g., BHP Billiton, Rio Tinto, Tiffany & Co, Cartier, Jewelers of America, etc.)
Administrative body	Responsible Jewellery Council (RJC)
Founding date and location	2005, London, Great Britain
Publication of the first standard version	2009
Up-to-date standard version and next revision	There are two standards: 1. RJC Code of Practices (CoP): 2013, revision expected for 2018 2. RJC Chain-of-Custody Standard (CoC): 2012, revision expected for 2017
Background of the scheme	(1) Scheme has exclusively been established for the standard development and implementation
Stakeholder groups participating in a) first standard-setting b) latest revision (if applicable)	(1) Civil society (b) (2) Private sector (b) (3) Public institutions For a) there is no information available.
Subject-Matter of the Standard	
Main objective	RJC focuses on the jewellery sector and promotes responsible business practices throughout the supply chain from mine to retail for diamonds, gold and platinum group metals (PGM). The CoC Standard defines requirements for Chain-of-Custody management systems, including systems for sourcing, segregating and transferring eligible precious metals. RJC also works with other multi-stakeholder initiatives on responsible sourcing and supply chain due diligence.
Target commodities	Diamonds (CoP), Gold and platinum group metals (CoP, CoC), with an expansion of scope to coloured stones currently under consideration
Application of the standard along the supply chain	The entire supply chain
Proof of origin	(1) Yes, CoC transfer documents for identification
Assessment unit	(1) All facilities or (2) Selected facilities The unit of the assessment is the member, and the scope of the membership can be defined by the member themselves and can be a single site or a corporate group. RJC specifies that the Member's scope includes all the entities/facilities that it owns and/or controls.
Geographic focus	(2) Global: RJC members in 29 countries, and certified facilities are present in over 65 countries
State of implementation	<ul style="list-style-type: none"> • 7400 certified facilities with 348.600 employees; 3.399 facilities in USA, 1769 facilities in UK, 275-120 in China, Japan, India, France, Swiss, Hong Kong, Italy and Belgium • 929 Commercial Members along the supply chain in 2016: <ul style="list-style-type: none"> – 8 Producer – 69 Refiner – 310 Diamond trader, cutter and polish – 461 Jewellery Manufacturers and Wholesaler – 55 Jewellery Retailer – 15 Service Industry – 11 Trade Association

Responsible Jewellery Council (RJC)		
State of implementation	<ul style="list-style-type: none"> • 586 CoP certified RJC Commercial Members in 2016 (after 2 years upon joining certification has to be achieved): <ul style="list-style-type: none"> – 5 Producer – 49 Refiner – 216 Diamond trader, cutter and polish – 262 Manufacturers – 42 Retailer – 12 Service Industry – Trade associations not require certification • 153 days taken on average by members to become CoP certified in 2015 after joining as a member • 40 % of CoP certificates in 2015 were issued with zero non-conformances • Top 5 areas of non-conformances in 2015: Health and Safety (39 %), Money Laundering Risks (15 %), Policy and Implementation (12 %), Hazardous Substances (9 %), Legal Compliance (8 %) • Good practices were identified in 29% of the CoP audits in 2015 in the area of management systems, employee recognition and remuneration, local community development and in investment in improved working conditions 	
Membership program	<p>(1) Yes</p> <p>“Commercial Membership”:</p> <ul style="list-style-type: none"> • Eligibility: Companies which are actively involved for commercial reasons in the diamond, gold and/or platinum group metals jewellery supply chain – this includes jewellery watches for their diamond, gold and/or platinum components; who commit to achieve RJC Certification within two years of joining the Council. <p>“Association Membership”:</p> <ul style="list-style-type: none"> • Eligibility: trade associations whose members are actively involved in the diamond, gold and platinum group metals jewellery supply chain is eligible to subscribe to become an Association Member of the Council. Association Members are not required to seek RJC certification. 	
Recent developments	<ul style="list-style-type: none"> • 2011: RJC attains full member status in ISEAL, an alliance of sustainability standards who commit to transparency, co-operation and good governance. • RJC has signed MOUs with the World Jewellery Confederation (CIBJO), Diamond Development Initiative (DDI) and the Alliance for Responsible Mining (ARM) to strengthen collaboration and efforts in addressing sustainability issues in the supply chain. • A new focus is put on the cooperation with the Indian industry – RJC establishes a presence in India with the hiring of a Country Head. The aim is to increase the support, recognition and implementation of the RJC program. • The aspect „provenance claims“ is integrated into the COP Standard (2013 version) to support the compliance of guidance, like the US Dodd Frank Act. • In 2016, an expansion of scope to include coloured stones underway. • In 2015, RJC had 17 audit forms accredited worldwide. 	
Requirements of the Standard		
Summarized standard requirements	Environmental issues	<p>COP:</p> <ul style="list-style-type: none"> • Compliance • Environment management • Hazardous substances • Waste and emission • Utilization of natural resources • Biodiversity • Slurries and overburden a • Mercury • Cyanide • Environmental Impact Assessment • Mine closure and rehabilitation

Responsible Jewellery Council (RJC)		
Summarized standard requirements	Social and societal issues	COP: <ul style="list-style-type: none"> • Compliance • Human Rights • Terms of Employment and Workers' rights • Health and Safety • Communal development • Indigenous people and FPIC • Resettlement • Emergency preparedness • Conflict areas • Conflict diamonds • Artisanal and small-scale mining • Security force and training • Remuneration • Working conditions • Working hours • Respectful interaction and disciplinary proceeding • Child Labour • Forced labour and human trafficking • Freedom of assemblage and negotiation • Anti-discrimination • Social Impact Assessment
	Corporate Governance and Trade	COP: <ul style="list-style-type: none"> • Compliance • Policies • Reporting (GRI Guidelines) • Financial accounting • Bribery/facilitation • Money laundry and financing of terrorism • Grievance system for stakeholders in case of violations • Proof of origin • Assessment and valuation reports of diamonds • Extractive industries • Transparency initiative • Trading partner • Product details and transparency • Management systems CoC: <ul style="list-style-type: none"> • Management system and responsibility • Internal material control • Outsourcing partners and providers • Qualified ("eligible") materials • Eligible material declarations • Chain-of-Custody (CoC) transfer documents • Conflict-sensitive sourcing
Rigor or flexibility of the standard model for compliance		(1) Obligatory standard catalogue (incl. incremental requirements) CoP Standard must be complied within 2 years after becoming a commercial member of RJC. In case of incomplete compliance a "Corrective Action Plan" has to be developed and implemented. Participation in the CoC Standard, however, is voluntary. Companies seeking RJC certification have to become RJC members first.
Provided documents and tools		<ul style="list-style-type: none"> • RJC Chain-of-Custody Standard (2012) • RJC CoC Assessment Toolkit – Assessment Questions and Types of Evidence (2012) • CoC Standards Guidance (2012) • CoC Certification Handbook (2012) • CoC Assessment Toolkit (Excel, 2012) • CoC Outsourcing Contractors Assessment Form (Excel, 2012) • RJC Code of Practices (2013) • CoP Certification Handbook (2013) • CoP Assessment Manual (2013) • CoP Assessment Questions (2013) • CoP Standards Guidance (2013)

Responsible Jewellery Council (RJC)	
Provided documents and tools	<ul style="list-style-type: none"> • CoP Assessment Workbook (Excel, 2013) • CoP Human Rights Due Diligence Toolkit (2013, Excel) • CoP Risk Assessment Toolkit (2013, Excel)
Number of quoted international conventions and other guidance	(1) < 10
Referral to other standards for more information or guidance	<p>(1) Yes (relevant to CoC or CoP)</p> <ul style="list-style-type: none"> • EICC-GeSI Smelter Validation Program • Extractive Industries Transparency Initiative (EITI) • Fairtrade und Fairmined Gold Standard • Global Reporting Initiative (GRI) Guidelines und GRI Mining and Metals Sector Supplement • London Bullion Market Association (LBMA) – Responsible Gold Guidance • WGC Conflict-Free Standards • International Council on Mining and Metals (ICMM) Sustainable Development Principles, Position Statements and guidance Documents • International Finance Corporation (IFC) Performance Standards • International Cyanide Management Code • International Diamond Council Rules for Grading Polished Diamonds • Financial Action Task Force (FATF) standards against money laundering and the finance of terrorism; • Ethical Trading Initiative – Base Code • Kimberley Process Certification Scheme and World Diamond Council System of Warranties for Diamond shipments • Social Accountability International SA 8000:2008
Recognition of other standards for the proof of compliance of certain issues	<p>(1) Yes</p> <p>With regard to RJC CoC-Standard:</p> <ul style="list-style-type: none"> • Implementation and auditing of the OECD Due Diligence Guideline is accepted as RJC CoC Standards compliance. • Certified refineries of the EICC-GeSi Smelter Validation Program and of the LBMA Gold Guidance the following standards are recognized as already compliant with the RJC standards 10.4 (Standard 10: “Conflict-Sensitive Sourcing”) • Mining companies compliant with the World Gold Council Conflict-Free Standard is taken into account for RJC Standard 4.2 “Eligible Mined Materials”. • Fairmined Standard Version 2.0 is accepted through the RJC CoC Standard, so the Fairmined certified gold is considered eligible gold which can be traded through RJC’s CoC. <p>Recognition of the RJC CoC through laws, initiatives and guidelines:</p> <ul style="list-style-type: none"> • Compliance with the US Dodd-Frank Act (“Conflict Mineral Report”) through the RJC CoC transfer documents, which can indicate origin or transport through conflict regions. • Upstream and downstream companies through the RJC CoC Standard can achieve compliance with the OECD Due Dilligence Guidelines. Refineries especially comply to STEP 4 of the OECD Due Dilligence Guidelines. • RJC CoC Certification can be used to support implementation of the Dubai Multi Commodities Centre (DMCC) Practical Guidance and Review Protocol. • For refineries, the LBMA recognizes the RJC CoC Standard as a yearly audit of Supply Chain Due Diligence if an additional “Surveillance Audit” is conducted.

Responsible Jewellery Council (RJC)	
Recognition of other standards for the proof of compliance of certain issues	<p>With regard to RJC CoP-Standard:</p> <ul style="list-style-type: none"> • No audit is required for facilities which are SA8000:2008 certified against the following RJC CoP provisions: 13. General Employment, 14. Working Hours, 15. Remuneration, 16. Discipline and Grievance Procedures, 17. Child Labour, 18. Forced Labour, 19. Freedom of Association and Collective Bargaining, 20. Discrimination, 21. Health and Safety (partly) • No audit is required for facilities which are ISO14001:2004 certified against the following RJC CoP provisions: 22. Environmental Management, if the auditor verifies that the ISO14001 report addresses these areas: 23. Hazardous Substances (partly), 24. Waste and Emissions (partly), 25. Use of Natural Resources, 36. Biodiversity (partly), 39. Mercury • No audit is required for facilities which are OHSAS18001:2008 certified against the following RJC CoP provisions: 21. Health and Safety (partly) • Other recognized responsible mining standards will be reviewed by RJC as a candidate certifications system for recognition
Assessment of Standard Compliance and Transparency of the Results	
Subject-Matter of the conformity assessment	RJC certified member conforms with the RJC Code of Practices, the standard for responsible business practices for different supply chain tiers. CoC certification verifies that systems are in place for custody and/or supply of responsible mined/sourced precious metals. CoC material comes from responsible sources in accordance with the RJC CoC Standard.
Type of conformity assessment (audit)	(3) Verification and certification
Auditor status and frequency of audits	<p>(3) 3rd Party (CoP, CoC)</p> <p>CoP: Every 3 years if no or minor non-conformances are found; after one year if major non-conformances are found and a “Corrective Action Plan” necessary</p> <p>CoC: The certification audit is followed by an surveillance audit within 12–18 months if no major non-conformances exist. Re-certification is conducted every 3 years.</p>
Assessment elements	<p>(1) Self-Assessment</p> <p>(2) Document analysis</p> <p>(3) Site inspection</p> <p>(4) Interviews with workers, managers, etc.</p>
Grievance mechanisms for auditor decisions	(1) Yes, via the auditors internal systems
Whistle-blowing mechanism for standard non-compliances	<p>(1) Yes</p> <p>a) Can be submitted by employees of Members, Auditors or RJC (can be handled anonymously)</p> <p>b) Process is handled under ad-hoc panel (RJC staff members, lawyer, third party)</p> <p>c) Ad-hoc panel may i.a. request for further information or commission additional audits</p> <p>d) Ad-hoc panel makes recommendations to RJC and decides about appropriate actions</p> <p>e) Appropriate actions include loss of membership, withdrawal of certification, corrective actions, matter being flagged for next audit</p>
Party publishing the results	<p>(1) Standard initiative: (yearly)</p> <p>No audit reports are published. Only a fictional audit report is accessible as an example. Aggregated certification data has been reported publicly via the Impacts Reports and Annual Progress Reports since 2012.</p>
Degree of detail of the published results	<p>(1) Summarized results</p> <p>The progress reports only names the main issues with rule violations against the CoP Standard but with no specification who is not conform in which issue. In the impact report, the proportion of rule violations for the six main issues and different supply chain tiers is disclosed. However, progress is not reported for single requirements.</p>

Responsible Jewellery Council (RJC)	
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•	Responsible Jewellery Council (2014): <i>2014 Annual Progress Report</i> . Available online at http://www.responsiblejewellery.com/files/RJC-2014-Annual-Progress-Report.pdf , accessed 10.09.15.
•	RJC (2014): <i>Building Responsible Jewellery Supply Chains. RJC Impacts Report</i> . Available online at http://www.responsiblejewellery.com/files/RJC-2014-Annual-Progress-Report.pdf , accessed 23.10.15.
•	RJC (2015): <i>2015 Annual Progress Report</i> . Available online at http://www.responsiblejewellery.com/annual-progress-report/ , accessed 10.09.15.
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WGC' Conflict-Free Gold Standard

Conflict-Free Gold Standard	
Background Information	
Initiators of the scheme	World Gold Council (WGC)
Administrative body	World Gold Council (WGC)
Founding date and location	1987, Geneva, Switzerland
Publication of the first standard version	Version 1, 2012
Up-to-date standard version and next revision	Version 1, 2012, next revision as required
Background of the scheme	(2) Initiative is part of an existing institution (e.g. association or research institute) or requirements are developed by an existing institution
Stakeholder groups in a) first standard-setting b) latest revision (if applicable)	(1) Civil society (a) (2) Private sector (a) (3) Public institutions (a)
Subject-Matter of the Standard	
Main objective	The Conflict-Free Gold Standard was developed for WGC member companies and other gold mining entities to provide an assurance mechanism for gold that has been extracted in a manner that does not cause, support or benefit unlawful armed conflict or contribute to serious human rights abuses. The requirements “operationalise” the OECD Due Diligence Guidance for Responsible Supply Chains for Minerals from Conflict-Affected and High-Risk Areas and the attached Supplement for Gold. It “uses criteria to assess whether the company has the appropriate mechanisms in place to demonstrate an ability to operate in ‘conflict-affected or high-risk’ areas.” The Standard also supports downstream supply-chain participants in meeting their due diligence requirements by providing them with a Management Statement of Conformance (Part E) from the compliant gold mining company. In this way, the Conflict-Free Gold Standard can support the refiners’ due diligence requirements as set out in the LBMA Responsible Gold Guidance.

Conflict-Free Gold Standard		
Target commodities	Gold	
Application of the standard along the supply chain	Mine site; predominantly large-scale mining	
Proof of origin	(1) Yes The Conflict-Free Gold Standard requires companies to assess their mine of origin and route to market and determine if either of these are located in an area assessed to be conflict-affected or high-risk. If so, they need to undertake further assessment to demonstrate that they are operating in a manner that will not support such unlawful, armed conflict.	
Assessment unit	(1) All facilities: gold mining company (Part A, D and E: all operations) (2) Selected facilities (Part B and C: only in those operations in areas assessed to be "conflict-affected or high-risk", Part C: also if gold is transported through such areas while in the custody of the company)	
Geographic focus	(2) Global The Conflict-Free Gold Standard is an open standard and can be used by any entity that mines gold (not only WGC members).	
State of implementation	No information available on the numbers of compliant companies among WGC members. However, company websites have been viewed randomly, showing that some member companies publish a Conflict-Free Gold Report (e.g. Barrick Gold Corporation, Kinross Gold Corporation, New Gold Inc., Eldorado Gold, Goldcorp, Newmont Mining Corporation) while others don't seem to do so (e.g. Golden Star, China Gold Group). It is also not known how many refineries rely on the Conflict-Free Gold Report for their own LBMA conformance.	
Membership program	(1) Yes Currently the WGC counts 21 member companies: Agnico Eagle, Alamos Gold Inc., AngloGold Ashanti, Barrick Gold Corporation, Buenaventura, Centerra Gold, China Gold Group, Eldorado Gold, Franco Nevada, Goldcorp, Golden Star Resources Ltd., IAMGOLD, Kinross Gold Corporation, New Gold, Newmont, Oceana Gold, Primero, Royal Gold, Sibanye Gold, Silver Wheaton, Yamana Gold	
Recent developments	<ul style="list-style-type: none"> • Together with the Accounting and Auditing Organisation for Islamic Financial Institutions (AAOIFI) and Amanie Advisors, the WGC has developed a global Shari'a Standard on Gold. The "Standard will provide guidance from the Shariah perspective on the usage of gold in financial and investment transactions for Islamic financial institutions and participants." 	
Requirements of the Standard		
Summarized standard requirements	Environmental issues	<ul style="list-style-type: none"> • No environmental requirements contained because the standard focuses on "conflict-free" gold mining.
	Social and societal issues	<ul style="list-style-type: none"> • Public commitment to human rights • No support of illegal armed groups by company security forces • Stakeholder engagement • Grievance mechanisms for local stakeholders
	Corporate Governance and Trade	<ul style="list-style-type: none"> • Part A: Conflict Assessment using external criteria to assess if the area should be considered 'conflict-affected or high-risk,' incl. international sanctions and authoritative internationally accepted guidance such as the Heidelberg conflict barometer • Part B: Company Assessment to provide assurance that the company has systems in place in order to not support conflict or human rights abuses: commitment to human rights, corporate activities, security, payments and benefits-in-kind, engagement, complaints and grievances • Part C: Commodity Assessment: processes in place to manage the movement of gold and ores while in the custody of the company (control against theft or illegal addition at operational level or at transportation) • Part D: Externally Sourced Gold Assessment: Risk-based due diligence in place for externally sourced gold (gold suppliers) • Part E: Management Statement of Conformance: a statement is provided to the next party in the chain of custody to prove conformance from A to D

Conflict-Free Gold Standard		
Summarized standard requirements	Corporate Governance and Trade	<ul style="list-style-type: none"> • Transparency and disclosure of payments to governments in line with instruments, such as EITI or OECD Supplement on Gold • Publishing the Conflict-Free Gold Report incl. the management structure for conformance and a declaration for external sources
Rigor or flexibility of the standard model for compliance		<p>(1) Obligatory standard catalogue (incl. incremental requirements)</p> <p>The Standard catalogue comprises five parts which have to be met within the “Conflict Free Gold Report” depending on whether the area is identified as being conflict-affected or high-risk:</p> <p>Part A: Conflict Assessment Part B: Company Assessment Part C: Commodity Assessment Part D: Externally Sourced Gold Assessment Part E: Management Statement of Conformance</p> <p>Parts A, D and E need to be completed in all cases.</p> <p>If the company operates in – or transports gold through areas considered conflict-affected or high-risk, the company also has to conduct Parts B to E. In Part B it is assessed whether the appropriate corporate systems are in place to avoid supporting unlawful armed conflict or human rights abuses. In Part C, it is assessed whether the company has appropriate controls in place on the gold itself. When there is a deviation from conformance at the time of disclosure, the Conflict-Free Gold Report should also include a summary disclosure of activities (Remedial Action Plan) underway to achieve conformance within 90 days. If the plan is not implemented within 90 days following the identification of an issue, the company counts as non-conformant in the reporting period.</p>
Provided documents and tools		<ul style="list-style-type: none"> • Conflict Free Gold Standard (2012), various languages • Conflict Free Gold Standard: An Introduction (2012), various languages • Guidance for Assurance Providers (2012) • Guidance for Implementing Companies (2012)
Number of quoted international conventions and other guidance		(2) 10–20
Referral to other standards for more information or guidance		<p>(1) Yes</p> <ul style="list-style-type: none"> • Global Reporting Initiative Guidance and Mining and Metals Sector Supplement • LBMA Responsible Gold Guidance • OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas and the Supplement on Gold
Recognition of other standards for the proof of compliance of certain issues		<p>(1) Yes</p> <p>The WGC recognizes that other assurance arrangements may be already present in companies due to other reporting obligations. It encourages companies and their assurance providers provide that these are reliable and add additional assurance works as is required to conform with the Conflict-Free Gold Standard.</p>
Assessment of Standard Compliance and Transparency of the Results		
Subject-Matter of the conformity assessment		<p>The criteria to which companies have to be compliant are set out in Parts A to E of the Conflict-Free Gold Standard. Companies also have to disclose summarized information about their conformance with the Standard in the Conflict-Free Gold Report for which external assurance must be provided. A review of conformance to the Standard is undertaken on a site-by-site basis and must include all operating assets under the control of, or managed by, the company. If a gold producer operates in an area assessed “conflict-affected or high-risk” various measures have to be taken, such as a company commitments, security measures, controls, payment disclosures, grievance mechanism, transportation and a due diligence procedures for external gold.</p>
Type of conformity assessment (audit)		(2) Verification
Auditor status and frequency of audits		(3) 3 rd Party (yearly)

Conflict-Free Gold Standard	
Assessment elements	(1) Self-Assessment (2) Document analysis (3) Site inspection (4) Interviews with workers, managers, etc.
Grievance mechanisms for auditor decisions	(2) No
Whistle-blowing mechanism for standard non-compliances	(1) Yes Any complaints related to the Conflict-Free Gold Report should be directed to the company concerned. It is up to individual companies to determine how they will address complaints.
Party publishing the results	(2) Company The Conflict-Free Report is either published individually or within the corporate financial or sustainability report once a year.
Degree of detail of the published results	(1) Summarized results The information provided through the Conflict-Free Gold Report is very short, but very clear, and often covers only a few pages.
List of References	
<ul style="list-style-type: none"> • http://www.gold.org/gold-mining/responsible-mining/conflict-free • PricewaterhouseCoopers LLP (2012): <i>Golden opportunity – Building an industry commitment to conflict-free gold production</i>. Available online at http://www.pwc.co.uk/industries/mining/insights/golden-opportunity-building-an-industry-commitment-to-conflict-free-fold-production.html, accessed 08.25.2016. • World Gold Council (2012): <i>Conflict-Free Gold Standard</i>. Available online at https://www.gold.org/sites/default/files/documents/Conflict_Free_Gold_Standard_English.pdf, accessed 20.08.2015 • World Gold Council (2012): <i>Conflict-Free Gold Standard. Guidance for Assurance Providers</i>. Available online at http://www.gold.org/sites/default/files/documents/Guidance_for_Assurance_Providers.pdf, accessed 20.08.2015. • World Gold Council (2012): <i>Guidance for Implementing Companies</i>. Available online at http://www.gold.org/sites/default/files/documents/WGC202-CFGS-GIC.pdf, accessed 08.25.2016. • World Gold Council (2015): <i>Conflict-free gold mining</i>. Available online at http://www.gold.org/gold-mining/responsible-mining/conflict-free, accessed 20.08.2015. • World Gold Council (2016): <i>Who we are</i>. Available online at http://www.gold.org/about-us/who-we-are, accessed 08.25.2016. 	

XertifiX Standard for NaturalStone

XertifiX Standard	
Background Information	
Initiators of the scheme	A group of stonemasons from „Signum GmbH“ from Freiburg decided to occupy a market niche and import responsibly produced natural stone after investigating upon child labour in Indian export quarries. XertifiX was then founded together with the trade union Bauen-Agrar-Umwelt (IG BAU) celebrities, politicians and other. XertifiX was the first worldwide to sensitize consumers, trade, and the public for responsible purchase of natural stone.
Administrative body	(1) XertifiX e. V.: Signs contracts with European natural stone importers, commissions controls in Asian quarries and processing factories, makes lobbying and public relations in Germany and beyond. (2) XertifiX Sozialprojekte e. V.: Owns the XertifiX Standard, consults and coordinates social projects in India which are conducted by partners ²⁶ , collects donations, makes lobbying and public relations in Germany and beyond.
Founding date and location	XertifiX e. V.: 2005, Hannover, Germany XertifiX Sozialprojekte e. V.: 2013, Hannover, Germany

²⁶ Partners in China and Vietnam: Institute of Contemporary Observation (ICO); in India: Building and Wood Workers's Internationale (BWI)

XertifiX Standard	
Publication of the first standard version	Standard version from 2005
Up-to-date standard version and next revision	Standard version from 2012 (first revision), next revision: October 2016–April 2017
Background of the scheme	(1) Scheme has exclusively been established for the standard development and implementation
Stakeholder groups in a) first standard-setting b) latest revision (if applicable)	(1) Civil society b) (2) Private sector b) (3) Public institutions b) No information available for a)
Subject-Matter of the Standard	
Main objective	XertifiX aims at primarily combating child and bonded labour through minimum social standards (specifically better remuneration of adults) and higher awareness of stone purchasers in Germany. XertifiX promotes schooling and professional education as a measure of both rehabilitation for former child labourers and prevention of future child labour. The standard was recently also extended to other social and new environmental requirements. On the long-term, cooperation with organizations that specialize in social labels and certification is planned to lead to standardization and merging of existing labels and certificates.
Target commodities	Natural stone (especially sandstone, limestone and granite)
Application of the standard along the supply chain	Quarry up to the European stone importer/salesman: The stone importer signs a contract with XertifiX to buy certified natural stones from China, India or Vietnam and requests the producers in his supply chain to comply with the XertifiX Standard who then become subject to assurance audits. The producers and exporters commit to fulfill the standard at all production sites and allow the XertifiX auditors to audit and inspect unannounced at any time.
Proof of origin	(1) Yes The traceability system consists of a physical mark (ID-label distributed by the auditor) and a documentary traceability which compares amounts of purchases and sales (pilot project): a) Quarry level: the amount of ingots sold to the processor has to be documented and ingots are marked with the label. b) Processing level: labeled ingots are stored separately with supplier documents later transferred to the importer. c) Processing/Exporting level: boxes filled with XertifiX natural stones are being labeled and a list of the labels' ID numbers and shipping information (container number, date of shipping) is created. d) Importer: stores all boxes with labelled natural stone in a way that allows comparison of label IDs and respective export lists at any time
Assessment unit in mining	(1) All facilities: quarrying and processing
Geographic focus	(1) National: India (main focus), China, Vietnam
State of implementation	<ul style="list-style-type: none"> • In total, 208 quarries (India: 186, China: 21, Vietnam: 1) and 167 processors (India: 143, China: 23, Vietnam: 1) have been captured in the XertifiX Database-System. Since 2011, over 700 controls in quarries and 450 at natural stone processors were conducted. • In 2015, 13 sales companies across Germany and one in Austria and one in Swiss offer XertifiX-certified natural stone. Among the licensees is also one DIY warehouse which is considered a special success. • Changes in the product range of companies have been observed especially in the area of sandstone, limestone and granite, which is used for kitchen tiles, exterior facades or gardening.
Membership program	(2) No XertifiX Sozialprojekte e. V. only has a membership program to collect donations for their social projects but not along the supply chain. Every natural or juristic person can apply via claim form. Member fees and their due date is decided by the members' meeting.

XertifiX Standard		
Recent developments		<ul style="list-style-type: none"> • In December 2014, a board of trustees with participants from politics, business and scientific community and civil society was constituted to advise and monitor the Work of XertifiX. • On 30th September 2015, the public charity XertifiX e. V. celebrated its 10th anniversary in the German Bundestag in Berlin. The chairwoman explained that child labour in XertifiX-observed quarries was practically eliminated while worldwide there are still 168 million child labourers under the age of 15 years, roughly half of them under exploitative conditions, i. e. seriously damaging. • Successes of the last years were the extension of the XertifiX Criteria with ILO norms and working safety requirements, while challenges remain for an increased number of workshops for employees and management in the whole supply chain, as well as higher purchase of natural stone by construction projects on the level of the state, federal states, communities and church institutions. • The Federal minister for Economic Cooperation and Development, Dr. Gert Müller, praised the pioneering of XertifiX and underlined that natural stone is especially important to public procurement because of the enormous volume of orders. XertifiX among others will therefore be integrated in the new consumer informing portal of the German government, called "Siegelklarheit".
Requirements of the Standard		
Summarized standard requirements	Environmental issues	Environmental Protection <ul style="list-style-type: none"> • Reforestation and re-establishing the original ecosystem • Waste Management • Recycling of material • Reducing the water consumption to a minimum through water saving installations (re-use or rainwater) • Reducing the energy consumption to a minimum through newer machines and electrical equipment for saving energy • Usage of renewable energy sources
	Social and societal issues	ILO Core Labour Conventions: <ul style="list-style-type: none"> • Prohibition of child labour • Prohibition of bonded labour • Labour union access and collective bargaining • Prohibition of discrimination Additional criteria by an individual yearly step-by-step procedure: Health and Protection of Workers: <ul style="list-style-type: none"> • Responsibility • Annual safety training • Documentation of accidents and adequate measures • Information about the purpose of XertifiX and workers' rights • Healthy workplace (e. g. water, shadow, sanitation) • Safe workplace (e. g. personal protective equipment, dust, etc.) • Medical Care Contractual Issues <ul style="list-style-type: none"> • Employment contracts and semi-bonded labour • Remuneration (e.eg. living wage, payment form, deductions) • Social insurance • Working hours • Women's Rights (pregnancy, care for babies, equal wage) Community <ul style="list-style-type: none"> • Free prior informed consent • Living conditions of the workers: drinking water and sanitation
	Corporate Governance and Trade	<ul style="list-style-type: none"> • Legal Compliance • Transparency and traceability to the quarry

XertifiX Standard	
Rigor or flexibility of the standard model for compliance	<p>A combination of “standard models” is applied by XertifiX: (1) Obligatory standard catalogue (incl. incremental requirements) (2) Compulsory voting standard catalogue</p> <p>There is a given set of basic obligatory criteria (ILO core norms) which is extended by a yearly step-by-step improvement procedure in consultation with the licensee (stone importer). If all facilities of a single supply chain comply to the control criteria, the natural stone product is marked with one of the three product labels:</p> <ol style="list-style-type: none"> 1) XertifiX Label: basic ILO norms as requirements 2) XertifiX PLUS Label: extended obligatory criteria and compliance to two thirds of all criteria (However, it allows exceptions on criteria such as re-habilitation of ecosystems, written contracts in the language of the worker, payment of minimum living wages) 3) XertifiX PLUS Label – Factory ONLY: applied solely at products where traceability up to the first supplier is not possible due to the high granularity of the additions (e.g. splitters of glas, stone or metal for the production of tiles). <p>If during an audit or inspection it is noticed that criteria of the standard are not fulfilled as expected, a warning is issued to the producers, the exporter and the importer. A correction plan is developed and if the same violation is noticed again at the next audit or inspection, the certificate will be withdrawn.</p>
Provided documents and tools	<ul style="list-style-type: none"> • XertifiX annual reports (balance sheets) since 2008 • Constitutions of XertifiX e.V. 2005 and XertifiX Sozialprojekte e.V. • XertifiX criteria catalogue • License contract • List of stone importers
Number of quoted international conventions and other guidance	(1) < 10
Referral to other standards for more information or guidance	(2) No
Recognition of other standards for the proof of compliance of certain issues	(2) No The planed cooperation with Fair Stone e.V. was given up.
Assessment of Standard Compliance and Transparency of the Results	
Subject-Matter of the conformity assessment	Compliance of quarries and processing facilities is assessed against the XertifiX Standards as demanded by the annual step-by-step procedure. Documentary audits are announced as common before conduct, while inspections on-site quarries and processors are not announced prior. “The objective of these inspections is to ensure that no children are employed in export quarries and factories in terms of ILO Convention No. 182, all other ILO core labour conventions are fulfilled, the working conditions of the adult workers are improved continuously, and adult workers are being paid guaranteed minimum wages. “
Type of conformity assessment (audit)	(3) Verification and certification The importer is being certified. The quarries and processors are being verified. The stone from certified importers is labeled throughout the supply chain with a trademark.
Auditor status and frequency of audits	(3) 3 rd Party (yearly) At minimum two audits per year – one of it is an announced documentary audit and the other a not priory announced on-site inspection. In China and Vietnam, audits are conducted by ICO Consulting CO. Ltd., in India by the XertifiX Chief Inspector and a Consultant.
Assessment elements	<ol style="list-style-type: none"> (2) Document analysis (3) Site inspection (4) Interviews with workers, managers, etc.

XertifiX Standard	
Grievance mechanisms for auditor decisions	(1) Yes There is a complaint mechanism and form on the website: a) Accused party must be informed of the complaint. XertifiX tries to solve the matter between affected parties. b) If no solution is reached, the XertifiX board will authorize a consulting team. The team has to be composed of persons of different sectors (e. g. civil society, trade, labour union). The appointed persons should be independent. Affected parties must accept the consulting team. c) The consultation team is to come to a conclusion to clarify the matter. Results will be summarized and send to XertifiX. Based on this, XertifiX will come to a binding decision.
Whistle-blowing mechanism for standard non-compliances	(1) Yes see <i>Grievance mechanism for auditor decisions</i>
Party publishing the results	(1) Standard initiative No audit results or information on the stepwise implementation of XertifiX criteria are published. There are addresses and a map available about importers in Germany offering XertifiX-certified natural stone and about three social projects in the producers' countries.
Degree of detail of the published results	No audit results are being published.
List of References	
<ul style="list-style-type: none"> • www.xertifix.de • XertifiX (2012): <i>XertifiX Standard</i>. Available online at http://www.xertifix.de/en/siegel/kriterien/, accessed 12.09.2016. • XertifiX (2013): <i>XertifiX Sozialprojekte e. V. Satzung</i>. Available online at http://www.xertifix.de/kinderarbeit/projekte/sozialprojekte-satzung/, accessed 12.09.2016. • XertifiX (ohne Jahr): <i>Lizenzvertrag</i>. Available online at http://www.xertifix.de/pic/Lizenzvertrag-XertifiX-2014.pdf, accessed 12.10.15. • XertifiX (2015): <i>XertifiX – Jahresbericht 2015</i>. Available online at http://www.xertifix.de/en/wir/jahresberichte/, accessed 12.09.2016. • XertifiX (2016): <i>Auditors, Controls, Certification and Trainings</i>. Available online at http://www.xertifix.de/en/siegel/kontrollen/, accessed 25.08.2016. • XertifiX (2016): <i>Complaint Mechanism</i>. Available online at http://www.xertifix.de/en/kinderarbeit/beschwerde-mechanismus/, accessed on 13.09.2016. • XertifiX (2016): <i>History</i>. Available online at http://www.xertifix.de/en/wir/entstehung/, accessed 25.08.2016. • XertifiX (2016): <i>Standard Revision</i>. Available online at http://www.xertifix.de/en/siegel/kriterien/standard-revision/, accessed on 13.09.2016. 	

Annex II – Additional Information and Overview Tables

Advisory Board of the NamiRo Project

To accompany and support the project, an advisory board was established, composed of representatives from manufacturing, mining, refining, non-governmental organizations, governmental institutions and associations from commodity and mining sectors. The advisory board accepts no responsibility for any outcome of the project.

- Bundesverband der Deutschen Industrie e. V., Eva Stollberger
- Bundesverband Materialwirtschaft, Einkauf und Logistik e. V., Matthias Berg
- Corporate Responsibility Interface Center e. V., Dr. Klaus Gabriel
- CRONIMET Mining AG, Philipp Kistner
- Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH, Berthold Hansmann and Franziska Rau
- Fachvereinigung Auslandsbergbau und internationale Rohstoffaktivitäten in der Vereinigung Rohstoffe und Bergbau e. V., Dr. Martin Wedig
- Forum Nachhaltige Geldanlagen e. V., Volker Weber
- Global Nature Fund, Stefan Hörmann
- Industriegewerkschaft Bergbau, Chemie, Energie, Dr. Ralf Bartels
- K+S Aktiengesellschaft, Britta Sadoun
- MinPol KG – Agency for International Minerals Policy, Dr. Horst Hejny
- Sächsisches Oberbergamt, Prof. Dr. Bernhard Cramer
- Saxore Bergbau GmbH, Dr. Marco Roscher
- Südwind e. V., Antje Schneeweiß and Friedel Hütz-Adams
- Umweltbundesamt, Jan Kosmol

Classification of Schemes due to Company Scale

Table 9: Target regions of sustainability schemes and actual applicability in small- and large-scale mining based on observations from practice. * = For the purpose of this classification, ASM includes both manual and semi-mechanized (semi-industrial) mining operations.

Commodity focus	Scheme	Target Region	Actual Target Sector		Explanation
			LSM	ASM*	
All minerals	GRI	Global	x	(x)	De-facto LSM: Applied especially by large companies due to the great number of reporting indicators. Originally destined for both sectors.
	IFC	Developing Countries	x	(x)	De-facto LSM: No information provided. From IFC case studies a focus on investing in large-scale projects was concluded.
	IRMA	Global	x		
	MAC	Canada	x		Developed for use by MAC industrial members.
	ICMM	Global	x		Developed for use by ICMM industrial members.
Gold and associated	Cyanide Code	Global	x	(x)	De-facto LSM: Developed to be adopted by both small and large scale mining operations, however, the program so far includes operations producing at minimum 25,000 ounces of gold annually (700 kg).
	WGC	Global	x		Developed for use by WGC industrial members. WGC however also deals with external sourcing of gold from legitimate ASM.
	FM	Developing countries ²⁷		x	
	FT	Developing countries ²⁸		x	
Tin, tantalum, tungsten, and gold	RCM	Great Lakes Region ²⁹	x	x	Varying red and yellow flags for LSM and ASM; it is the only scheme with two distinct sets of requirements
	ITSCI	Great Lakes Region ³⁰	x	x	ITSI provides mineral traceability and due diligence for supply chains beginning at both ASM and LSM. However, there are almost no industrial mines in the Great Lakes Region but instead many semi-industrial companies and ASM.
	CTC	DR Congo	(x)	x	Requirements developed especially for ASM which forms the majority of mining in the DR Congo. The original CTC from Rwanda was developed as minimum requirements for both LSM and ASM, though.
Natural stone	FS	China, India, Vietnam	x	x	Minimum requirements applicable to both ASM and LSM.

²⁷ Currently: Colombia, Bolivia, Peru, Ecuador, Mongolia, Senegal

²⁸ Currently: Peru

²⁹ Currently: DR Congo, Rwanda, Burundi

³⁰ Currently: DR Congo, Rwanda, Burundi

Commodity focus	Scheme	Target Region	Actual Target Sector		Explanation
			LSM	ASM*	
	XF	India, China, Vietnam	x	x	Minimum requirements applicable to both ASM and LSM.
Diamonds, gold, plat.	RJC CoP	Global	x	(x)	RJC mining requirements (CoP) are only applied by LSM diamond companies and middle-sized gold mining companies but RJC integrates gold from ASM into the RJC supply chain (RJC CoC) in two ways. ³¹
Aluminum	ASI	Global	x		Aluminium is extracted by a small number of industrial mining companies worldwide.
Coal	BC	Global	x		No information provided. Since BC was founded by major coal companies and members pay a fee of 35.000 Euro, we assume a focus on LSM though coal is also mined by ASM in some parts of the world.

³¹ Integration of ASM gold into the RJC supply chain in two ways: 1) by sourcing from a certified ASM producer with a certification from a Recognized Responsible Mining Standard (e.g. Fairmined/Fairtrade); 2) by sourcing gold from ASM producers operating on the company's concessions by providing Eligible Material Declarations. Both paths require documented due diligence

Documents and Sections included in the Assessment of Sustainability Issues

Table 10: Documents and Sections included in the Assessment of Sustainability Issues included in sustainability schemes for mining. Chain-of-Custody Standards and supply chain relevant practices were not included in the analysis.

Sustainability Scheme	Assessed Documents and Sections	Excluded Documents or Sections
GRI	G4 Sustainability Reporting Guidelines (2013): Reporting Principles and Standard Disclosures, G4 Sector Disclosures (2013): Mining and Metals (incl. mining and metals references)	G4 Sustainability Reporting Guidelines: Implementation Manual (incl. general references)
MAC	Five-level indicators from six TSM Protocols (various years)	TSM Frameworks, TSM Handbooks and Guidance
ICMM	ICMM Principles and six ICMM Positions Statements (various years); GRI compliance as a requirement is not assessed again since it is assessed separately	ICMM Handbooks and Guidance
WGC	Criteria and Reference Sources from the Conflict-Free Gold Standard (Version of 1st December 2012)	Introduction, process, assessment, further information, etc.
IFC	Requirements from IFC Performance Standards (2012); ESG Guidelines (2007), ESG Guidelines for Mining (2007) with sections: Impacts and Management; Performance Indicators and Monitoring	Introductory sentences in ESH Guidelines; IFC Policies; IFC Manuals; IFC Guidance Notes
IRMA	Criteria and Requirements from the Standard for Responsible Mining (Draft Version 2.0)	Introduction, intent, MoV
ASI	Criteria from ASI Performance Standards designated for mining (Version 1, 2014)	Criteria for smelters and other processors; ASI Chain-of Custody Standard
RJC	Provisions from the RJC Code of Practice (Version 2, November 2013) designated for mining	Provisions designated for retailers; RJC Handbooks

Sustain-ability Scheme	Assessed Documents and Sections	Excluded Documents or Sections
BC	Requirements listed beneath more general principles of the Bettercoal Code (Version 1, 2013)	Principles of the Bettercoal Code
ARM	Requirements (Entry/Progressive) of the Fairmined Standard for Gold (Version 2.0) without guidance (letters in gold)	Descriptions and Guidance, Market Annex
FT	Requirements (Core/Development) of the Fairtrade Standard for Gold (Version 1.2, 2015)	Other sections than requirements, such as intent and guidance
CTC	Five-level indicators together with the head requirements of the Manual For The Certification Of Ores In The Tin Industry In The Democratic Republic Of The Congo (Version 0, 2011)	CTC Principles
FS	Serially numbered requirements of Part I and II (requirements for quarries and stone processing very similar) of the Fairstone Standard (Version 4, 2010)	Introduction or explanations to requirements
XF	XertifiX Criteria in the Annex 3 of the XertifiX licence contract (Version 2014)	–
ICMI	Standards of Practice beneath the Principles of the Cyanide Code (Version 2014)	Principles of the Cyanide Code
RCM	Red and Yellow Flags of the ICGLR Regional Certification Mechanism (RCM) Certification Manual (Version 2011) located in Appendix 3: Mine Site Inspection and Certification for ASM and Industrial Mining	Progress Criteria (adapted CTC requirements) are only monitored
ITSCI	There is no official standard documents; ITSCI references certain sections of the OECD Guideline for Conflict Minerals (Annex II paragraphs: 1,2,3,4,5,10,11,13, Step 1–5 in an adapted way) in its Audit Summary Report	ITSCI Membership Program

Definitions of the Sub-issues of the Consolidated Framework

Table 11: Definitions of the sub-issues in figure 4 by enumerated explanatory key words.

Sub-Issue	Definition (key word list)
1. Workers' Rights and Benefits	
1.1 Serious Human Rights Abuses	
Child Labour & Education	Minimum working ages and tasks; restrictions in child work (family work; child-headed households); compulsory schooling; no work shifts; hazard substances; protection from violence; policy and prevention measures; remediation programs
Forced Labour	Forced labour, bonded or involuntary prison labour, human trafficking; slavery; freedom of spouses; freedom to terminate work; voluntary uptake of work; freedom of movement; confiscation of personnel documents; monitoring the mine's primary suppliers
Women Rights	Reduced working hours for pregnant and nursing women; maternity leave; child-care; equal remunerations; exposure of pregnant and breast-feeding; night work
Discrimination & Diversity	Freedom of discrimination (race, colour, gender, sexual orientation, disability, age, religion, political opinion, union membership, etc.); equal working conditions; protection of minorities; positive discrimination; remediation of past discrimination
Disciplinary Practices & Violence	Violent-free communication; corporal punishment, harsh or degrading treatment; mental, physical or verbal abuse; sexual harassment; gender-based violence; coercion; intimidation; grievance procedure; clear disciplinary process

Sub-Issue	Definition (key word list)
1.2 Terms of Employment	
Continuous Improvement	Progressively improve employment conditions; employment policy; assessment of existing employment condition; identify priority needs; monitoring; labour improvement plan
Work Contract and Rights	Employment contract upon employment terms and rights and any applicable collective agreements; legal effectiveness; understandable language; rights in regard to the standard
Forms of Employment	Favor regular employment relationships; restricted use of subcontracting arrangements, piecework contracts or fixed-term contracts; equal work conditions for permanent and temporary workers
Wages & Employee Records	Living wage/legal minimum wage; increasing wage levels; overtime; piece-rates; wage slips; wage advances; wage deductions; regular payment; reasonable payment form; no vouchers and forced purchases; non-monetary benefits; employee records
Working Hours & Rest	Daily and weekly regular working hours; shift work; overtime hours; regular breaks; rest period; voluntary and timely restricted overtime
Leave Entitlement	Legally mandated public holidays; paid annual leave; maternity/paternity leave; marriage and funeral leave, home leave
Social Insurance	Health insurance and pension contributions; public insurance or private social security scheme; group insurance; solidarity fund; widow(er)s and heirs, compensation of injuries
Retrenchment	Analysis of alternative employments; transparent retrenchment plan; notification of public authorities; appropriate notice of dismissals; compensation or severance payment
Freedom of Association & Collective Bargaining	Establish and join a trade union or workers' organizations; associate freely; collective negotiation of working conditions; collective bargaining agreement; no obstruction or discrimination of representatives; alternative forms of independent worker organizations
Communication & Grievance	Open and constructive communication and engagement with employees; resolve workplace and compensation issues; grievance mechanism; no threat of reprisal; intimidation or harassment
1.3 Occupational Health & Safety	
OHS Management	Management system; legal compliance; policies; qualified staff; performance targets; planning and implementation; prevention measures; risk monitoring; investigation of incidents; review and improvement plan; employee engagement; reporting
H&S Committee	Provided mechanism, such as a joint Health and Safety committee, for employees to raise and discuss Health and Safety issues with management; make decisions and implement actions
Workplace Hazards & Machinery	Safe and healthy workplace, processes & machinery; inspections; elimination of workplace fatalities, injuries and diseases; risk identification; protective measures; warning signals; blasting; chemicals; dust; noise; temperature; lighting; ventilation; repetitive strain activities; fitness
Personal Protective Equipment (PPE)	Personal Protective Equipment (PPE) provided free of charge; correct and careful use; training on use; disciplinary process; maintenance; helmets, hearing and breathing protection, gloves, safety glasses, high-visibility clothing, water protection
OHS Training	Education and trainings on risk prevention in the mine; role-related health and safety risks and hazards; fire safety; emergency procedures; first-aid; understandable employee and supplier information about H&S risks in the mine; safety training plan for the security staff; observation
Building & Transport Safety	Design, construction, operation and decommissioning of facilities by professionals; external review for high-risk locations; geotechnical safety; transport equipment; traffic; lifting devices; storage; loading; illumination; handrails; barriers; floor; risks to third parties and communities
Electricity	Equipment suitable for rough/wet environments; power distributors; electrical control boxes; high voltage; reparation of cables; electrical connections; labelling; emergency stop switches

Sub-Issue	Definition (key word list)
Emergency Preparedness	Emergency procedures and evacuation plans; plans clearly displayed; review and maintenance; alarms and warning devices; fire safety; emergency exits; escape routes; emergency lighting; public liability accident insurance
Basic Supplies	Potable drinking water; hygiene sanitary facilities; food storage; sewage and garbage disposal system; reasonable on-site housing & upkeep; lighting; air quality; temperatures
Medical Care	On-site health and medical facilities; first-aid provisions; first-aid personnel; transportation to medical facilities; reporting of incident and reactions; HIV/AIDS and other diseases; regular medical checks and ongoing health surveillance; health programs (incl. worker mental health)
Hazardous Substances	Modification, substitution or elimination of hazardous substances in use; substances with international bans due to high toxicity; safety data sheets; safety instructions; inventory; awareness rising; pregnant and breast-feeding women
• Mercury Use & Production	Elimination of mercury; protective measures; vulnerable people; pre-concentration before amalgamation; mercury recovery; awareness; not as primary product of a mine; material stewardship; best available technology; transfer of low- to no-mercury technologies to ASM
• Cyanide Use	Design and construction of cyanide leaching plant; safe operation; trained personnel; cyanide manufacture; cyanide transport and storage; detoxification of cyanide solutions and tailings; discharge in lined pond or tank; water bodies and biodiversity; Cyanide Code
• Silicate Exposure	Reduction of silicate dust; technical solutions (wet process, wet drilling, suction units) and organizational approaches to reduce workers' exposition (workplaces' location), regular cleaning of certain facilities, awareness rising
2. Societal Welfare	
2.1 Community Rights	
Residential & Indigenous Rights	residential rights; rights of indigenous people; Land and water rights; Impacts on livelihoods; consultation and broad-based consent; partnerships and/or benefit programs
Community & Stakeholder Engagement	Identification of stakeholders potentially affected; SH engagement process; Stakeholder Engagement Plan tailored to development stage; provision of understandable information; SH requests and communication; early warning tool for stakeholder relationships
Free, Prior and Informed Consent (FPIC)	Free, Prior and Informed Consent (FPIC) for indigenous and tribal people; respect natural resources; policy; FPIC scoping and process; face-to-face meetings; indigenous peoples' consent; implementation and ongoing engagement
Cultural Heritage	Assessment; professionals; legally protected cultural heritage; natural areas with cultural or spiritual value; critical cultural heritage; replicable and non-replicable cultural heritage; use of traditional knowledge; conditions for commercialization
Resettlement & Displacement	Alternative project sites; involuntary resettlement and displacement; livelihood restoration plan; compensation; early stakeholder consultation; uncontrolled settlements
Medical Care	Medical surveillance of affected communities; monitoring indicators; noise sources; gender-based diagnosis of risks; community vulnerability to accidents and disasters; action plan; educational programs
Conflict-Affected and High-Risk Areas	Site assessment concerning conflict-affected and/or high-risk area; due diligence process; monitor business relations and transactions; no payments to illegal armed groups; no breach of international sanctions
Security Forces	Legal private or public safety staff; due diligence for hiring; human rights training and screening; safety for workers and communities; theft prevention; security risk assessments; security arrangements with government; communication and reporting
2.2 Local Value Added	
Payment of taxes & EITI	Revenue and payments transparency; publication of revenues and payments; project-level disclosure; endorse and implement Extractives Industry Transparency Initiative (EITI); engage in country multi-stakeholder processes and forums

Sub-Issue	Definition (key word list)
Local Workforce	Promote local employment and hire local staff; senior management hired from the local community; majority of miners must be community based; provide training to access created jobs
Local Procurement	Local supply chain; Purchase of local material and products of daily use; support local small and medium-sized local enterprises to supply goods and services
Infrastructure Investments	Construction of physical infrastructure (transportation, electricity, water distribution system, schools, etc.)
Community Initiatives	Initiatives for benefitting communities; support or develop partnerships or collaborations with other stakeholder groups; activities to address priority issues
Support of nearby ASM	Engage with artisanal and small-scale miners (ASM) operating on or around a mining operation; actively promote responsible ASM practices in the mining area; participate in initiatives that enable the professionalization and formalization
Community Development Plan	Development objectives upon social services and social and physical infrastructure laid down in a Community Development Plan/integrated development plan; price premium mechanism (see 5.1); Premium Committee; accounting system; reporting
Institutional Capacity	Support local and institutional capacity; work with the public services of states; partnerships with governments, industry and other stakeholders to achieve effective public policy and laws to facilitate the sector's contribution to sustainable development
3. Use of Natural Resources	
3.1 Land Use and Biodiversity	
Internationally Recognized Areas (No-Go Areas)	No mining in internationally highly protected areas with exceptions: UNESCO Natural World Heritage Sites & Biosphere Reserves, IUCN designated areas; Ramsar wetlands
Legally Protected Areas	Protected areas designated by governments for the conservation of biodiversity; identification procedure; activities in or adjacent to areas
Unprotected Areas	Protection of biodiversity in areas not protected legally: Key Biodiversity Areas; High Conservation Values; professionals; cumulative effects; corrective actions; assigned resources; aquatic habitats
	<p>For all three types of areas: Permits, Biodiversity Impact Assessment; Biodiversity Action Plan; viable alternatives; stakeholder consultation; critical, natural and modified habitats; net loss/gain of biodiversity; mitigation hierarchy; biodiversity experts; endangered species; long-term biodiversity monitoring program</p> <p>Only for recognized and legally protected areas: consistency with governmental management plans; stakeholder consultation; additional conservation programs</p>
• Threatened species	No net reduction on the global, national or regional population of any critically endangered or endangered species over a reasonable period of time; critical natural habitats
Invasive species	Intentional/accidental introduction of non-native species; strict prohibition of high-risk invasive species; compliance; risk assessment; prevention; not spreading already introduced invasive species; eradicate invasive species from the managed area
Ecosystem Services	Risks and impacts identification process; review on priority ecosystem services; engagement of affected communities; mitigation hierarchy; increase resource efficiency of the operations
Alluvial Mining	Conditions for mechanical dredging of gold or associated precious metals by ASM in natural water bodies; capacity and number of dredges; natural turbidity levels; toxic substances; protective measures against spill
Offshore Exploration & Mining	Exploration or mining activities in deep sea areas; ensure sufficient scientific knowledge of potential impacts of their activities and that controls can be implemented to mitigate adverse impacts
Integrated Land Management	Support the development and implementation of scientifically sound procedures for integrated approaches to land-use planning, biodiversity, conservation and mining

Sub-Issue	Definition (key word list)
Conflict with Agriculture	Red flag for areas where conflict between the mining organization and the surrounding agricultural sector; stakeholder submission of areas to be excluded; exception through support by independent NGO or government institution
Conflict with LSM or indigenous	Red flag for areas where occurs conflict between ASM and large-scale mining and or with indigenous peoples
3.2 Water Use	
Water Management	Alternative water supplies/projects; water stewardship; integrated water resource management; stakeholder engagement; impact assessment; ground/surface water extraction; biodiversity; mitigation; mine water management plan; reviews; grievance; groundwater analysis; streamflow/groundwater model; mine-site water balance accounting; monitoring; disclosure
Surface Water Pass-by Flows	Pass-by flows for sites affected by surface water withdrawals; pass-by flow standards; flow maintenance goals/exceedance flows; best available data/methodology; documentation; natural flow regime method; in-stream habitat methodology; channel-building flow; aquatic and terrestrial life; river flow gauging station; monitoring and adaptation; revision; legal water regimes
Groundwater Use	Withdrawal in maximum by rate of replenishment; impacts on off-site groundwater uses; groundwater use in arid regions; effects on surface water; water conservation activities
Mine Dewatering & Pit Lakes	Impacts of mine dewatering and mitigation measures; use as production water; provision to other water users; return to same aquifer or streams; quality and quantity requirements; pit lake shape; pit lake overflow; evaporation losses in arid regions; long-term usage of the pit lake water;
Efficient Water Use and Recycling	Measures for improving water use efficiency; maximum efficiency; installations to avoid or reduce water use; targets; principles of cleaner production; product design and production processes; benchmarking data; relative level of efficiency; recycling of waste water; rain water use
3.3 Energy Use	
Renewable Energies	Adopt renewable or low carbon energy sources
Efficient Energy Use	Improving energy use efficiency; reduce energy consumption to a minimum; set targets; core business activities; substitution of old machinery with high energy consumption with low energy consumption; energy efficient equipment; principles of cleaner production; product design and production processes; benchmarking data; relative level of efficiency
3.4 Material Use	
Sustainable Sourcing	Sourcing policy covering environmental, social and governance aspects; sustainable sourcing for e. g. bought-in gold
Natural Resources Use	Practices for sustainable and efficient use of natural resources; impact assessment of natural resources usage; local stakeholders access to and use of the resources; cumulative impacts on natural resources in the area
Efficient Material Use & Recycling	Measures for improving material use efficiency; set targets; core business activities; re-use of material; recycling of material; principles of cleaner production; product design and production processes; benchmarking data for relative level of efficiency
Material Stewardship	Initiatives; Environmental Life Cycle Assessment (LCA) of own products; public access to LCA information; contribute to development of Life Cycle Inventory (LCI) datasets in the region of operation; external business initiatives; engage with value chain and external stakeholders
4. Emissions Prevention and Land Reclamation	
4.1 Closure and Land Rehabilitation	
Closure & Reclamation after Exploration	Cost of implementing exploration reclamation covered; guarantee; grievance mechanism; consideration in biodiversity impact assessment

Sub-Issue	Definition (key word list)
Closure & Reclamation after Mining	Social and environmental mine rehabilitation and closure plan; reclamation and closure planning; reviews; good practice techniques; protection of soils; revegetation; sustainable native ecosystem or other post-mining land use; early stakeholder consultation incl. ASM; mine closure planning process; local land planning authorities
• Financial Surety for Closure	Reliable financial surety instrument; cost calculation for implementation of the mine rehabilitation and closure plan; third-party analysts; accepted accounting methods; in place before first ground disturbance; sufficient resources for implementation; national law; prevailing industry standards; reviews and disclosure; stakeholder participation
• Subsidence & Backfilling	Minimize the effect of subsidence; compensation for incidents of subsidence; re-filling or blocking of open pits or underground mine apertures; pit lakes; socioeconomic and environmental benefits; economic viability; acid-generating/metals leaching materials
Post-Closure Activities	Post-closure planning and monitoring; geotechnical stability and routine maintenance; inspection and maintenance; surface and underground mine workings; tailings and waste rock disposal facilities; covers; seepage capture systems; mechanisms for contingency and response; post-closure water treatment; water quality monitoring and modelling; biological monitoring
• Financial Surety for Post-Closure	Reliable long-term financial surety instrument (e.g. trust fund); third-party analysts; Long-term Net Present Value (NPV) calculations; reviews; cost calculation for implementation of the post-closure plan and post-closure water treatment; effective treatment technology; post closure site monitoring and maintenance; baseline water quality values
Historical Liabilities	historically accumulated pollution; land or groundwater contamination; assessment of responsibility for mitigation measures incl. rehabilitation; national law or good international industry practice
4.2 Mine Wastes and Waste Water	
Reduction of Emissions	Feasible pollution prevention techniques; identify wastes and emissions to air, water and land; professional disposal; avoid and minimize pollutants/impacts; emission offsets; national requirements; good international industry practice; professionals; performance levels (e.g. EHS Guidelines from IFC); implementability/availability; local conditions; alternative project location
Waste Water & Water Quality Management	Protection of water quality; plan to minimize non-beneficial discharges to water; proper disposal of waste water; professionals; baseline water quality of surface or groundwater bodies; water quality criteria for water discharges; catchment-wide risk-based approach to water quality management; water quality monitoring; mixing zones; storm water & erosion, disclosure
• Acid Mine Drainage (AMD)	Identify risk of acid rock/mine drainage; heavy metal leachate; mine dewatering; tests of rock used for construction and all mine waste; water quality maintenance; collection and treatment of AMD leachate; surface-management system; seepage collection; active or passive treatment systems; baseline values; limits of water treatment; during operation and decommissioning
Waste Management	Identify significant wastes to air, water and land; proper disposal; principles of avoid, reduce, recover, re-use and recycle; control of emissions and residues resulting from the handling; national requirements; good international industry practice; regular removal of waste from workplace; environmental impact considerations alongside cost considerations; monitoring
• Hazardous & Chemical Waste	Avoid, minimize and control the release of hazardous material; impact assessment of production, transportation, handling, storage, and use of hazardous materials; use of less hazardous substitutes; international bans and phase-outs; acceptable hazardous waste disposal by licensed third parties; chain of custody documentation; develop own recovery or disposal facilities
• Overburden, tailings & effluents	Engineering plans by licensed professionals; legal compliance; risk assessment; waste rock facilities/geochemical characterizations; riverine, marine and lake disposal; tailings dams and impoundments; heap leach facilities; process water facilities; liner systems; leak detection and collection systems; spills; storm water facilities; residue lagooning; dry stacking; dross residues; land filling; state of the art technologies; precipitation and climate change; (biological) monitoring

Sub-Issue	Definition (key word list)
<ul style="list-style-type: none"> Land Application Disposal (LAD) 	LAD not as primary treatment method for metals; LAD areas safe against breakthrough of contamination; risk assessment; analysis of contaminants and soil conditions; potential plant uptake and risks; LAD not allowed sometimes; monitoring; water quality trigger levels; review
4.4 Air Emissions and Noise	
Air Quality Management	Develop and implement air quality management plan; reviews; monitoring by professionals; air dispersion modeling consistent with leading methodologies; air collection canisters; compliance with air quality criteria; publication of air quality management plan and compliance information
Dust & other air emissions	Operating procedures to minimize fugitive emissions; dust control at blasting; drilling; material transport; dumping; best available processes; integrate control into operating procedures; dust deposition criteria; dust deposit gauges; air emission plan; ozone-depleting substances, NOx, SOx
Noise and Vibrations	Prevent and control noise sources ; prevailing land use; allowable noise levels and time frames; types of noise; mitigation plan; blast noise and vibration; level for air blast overpressure; wildlife or human receptors; mitigation of noise-related complaints; disclosure on request
Greenhouse Gas Emissions	Quantify direct and indirect emissions; national standards, internationally recognized methodologies and good practice; disclosure of material GHG emissions and energy use and emissions reduction targets; reduction plan; material sources of direct and indirect emissions; feasible and cost-effective options
5. Corporate Governance	
5.1 Business Practices	
Business Ethics	Company statements of ethical business principles; practices that management is committed to enforcing; compliance; sound systems of corporate governance and transparency
Corruption	Anti-corruption measures; policies and practices to prevent/prohibit all forms of corruption by employees and contractors; pecuniary or other advantages; internal recording and reporting; employee and contractor training; applicable law; international instruments
<ul style="list-style-type: none"> Bribery & Facilitation 	Management system; policies and practices to prevent/prohibit bribery and facilitation payments; employee and contractor training; applicable law and international instruments; public commitments; disclosure of mitigation measures; sanctioning bribery; criteria and approval procedure; exceptions for facilitation payments of limited nature and scope
Extortion	Work against extortion; applicable law and international instruments; public commitments against extortion and publicly disclosing measures undertaken
Money Laundering	Know Your Customer principles for suppliers or customers of diamonds; gold and platinum group metals; identity and beneficial ownership of the supplier or customer; monitoring transactions for unusual or suspicious activity; reporting suspicions of money laundering or finance of terrorism to an authority; cash or cash-like transactions above the relevant defined financial threshold
Mergers & Acquisitions	Inclusion of environmental, social and governance aspects in the due diligence process for mergers and acquisitions
Divestment	Inclusion of environmental, social and governance aspects in the due diligence process for closure, decommissioning and divestment
Fair Competition	Support public policies and practices that foster open and competitive markets
Pricing & Price Premium	Regulated commodity price in relation to exchange prices; additional payment of price premium for realization of developmental or ecological efforts; premium utilization plan (see 2.2); direct trade with ASM; contracted trade operators; transportation and insurance cost; invoices
Shareholder Value	Enhance shareholder value; innovate to improve social, environmental and economic performance

Sub-Issue	Definition (key word list)
5.2 Management Practices	
Legal Compliance	Compliance with all national laws and regulations; international human rights laws and principles; identification procedure; response to non-compliances; record-keeping; reporting; contractors
Policies	Policies on environmental, social, and governance policies aligned with the standard; internal communication; sustainability performance throughout the operational life cycle
Impact Assessment & Management Systems	Environmental, social, cultural and human rights impact assessments; due diligence process for risks and impacts; stakeholder engagement and consultation; environmental and social management systems; organizational capacity; mitigation hierarchy; reviews; reporting
• Human Rights Impact Assessment	Human Rights Impact Assessment (HRIA); HRIA report publication; due diligence; policy; mitigation hierarchy; remediation plan; reviews; security providers; contractors; stakeholder engagement and consultation; grievance mechanism; monitoring with qualitative and quantitative indicators; multi-sectoral initiatives; violations by third parties; reporting
• Environmental and Social Impact Assessment	Environmental and Social Impact Assessment (ESIA), scoping; preliminary information; data collection; impact analysis; ESIA report and management plan; assessment appropriate to the scale of the project; baseline conditions; mitigation; engagement with affected communities; stakeholder participation; subject matter experts; monitoring; disclosure
• Environmental Management	Study about the environmental risks and significant impacts; environmental management system; minimize and mitigate impacts; continual performance improvement; environmental monitoring; reviews; policy; training for employees and contractors in understandable form; fines paid
Sustainability Reporting	Reporting on material impacts and ethical, social, and environmental performance; good practice international reporting guidelines (e.g. GRI); ongoing reporting to affected communities about progress with Action Plan implementation; external communication
Grievance Mechanisms & Conflict Resolution	Protected whistle-blowing mechanism for employees; grievance process for affected communities over ESG performance; consultative process for conflict resolution; effective and timely remedy; existing traditional or judicial (inter)national mechanisms; information; costs
Financial Accounts	Maintain financial accounts of all business transactions; national requirements; national or international accounting standards; independent certification/audit
Production Plan	Indicative annual production plan (e.g. for Fairtrade business partners); Quarry Management Plan (e.g. Fairstone; information on the quarry site, infrastructure, scope of exploitation, etc.)
Responsible Person for the Standard	Contact person; responsibilities for implementing the standard; at least one person for each production unit (quarry/mine/factory); manager for each section of the standard

Overview of External Documents Referenced

Table 12: External documents references for sub-issues indicated in Table 7.

Sub-Issue	External References
1. Workers' Rights and Benefits	
1.1 Employment Conditions	
Improvement Process	
Work Contract	<ul style="list-style-type: none"> • IFC Performance Standard 2 Labor & Working conditions • ILO Convention 110 on Conditions of Employment of Workers
Forms of Employment	<ul style="list-style-type: none"> • IFC Performance Standard 2 Labor & Working conditions

Sub-Issue	External References
Wages & Records	<ul style="list-style-type: none"> • IFC Performance Standard 2 Labor & Working conditions • ILO Convention 100 on Equal Remuneration
Working Hours	<ul style="list-style-type: none"> • IFC Performance Standard 2 Labor & Working conditions • ILO Convention 1 and 14 on Wages & Working hours
Leave Entitlement	<ul style="list-style-type: none"> • IFC Performance Standard 2 Labor & Working conditions
Social Insurance	<ul style="list-style-type: none"> • International Workers' Compensation by Indiana Compensation Rating Bureau (Eleson, R. 2002)
Retrenchment	<ul style="list-style-type: none"> • IFC Performance Standard 2
Freedom of Association and Collective Bargaining	<ul style="list-style-type: none"> • ILO Convention 87 on Freedom of Association and Protection of the Right to Organize • ILO Convention 98 on the Right to Organize and Collective Bargaining • ILO Recommendation 143 on Workers' Representatives • ILO Convention 154 Freedom to form Union • ILO Convention 135 Workers' Representatives Convention • ILO Convention 141 Rural Workers' Organisations Conventions
Communication and Grievance Mechanism	
1.2 Decent Working Conditions	
Child Labour & Schooling	<ul style="list-style-type: none"> • ILO Convention 138 on Minimum Age of Employment and ILO Recommendation 146 • ILO Convention 182 on the Worst Forms of Child Labor and ILO Recommendation 190 • UN Convention on the Rights of the Child (CRC), Article 32.1, protective framework • IFC Performance Standard 2 Labor & Working conditions, footnote 12 • OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas
Forced Labour	<ul style="list-style-type: none"> • ILO Convention 29 on Forced Labor • ILO Convention 105 on the Abolition of Forced Labor • OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas
Women Rights	<ul style="list-style-type: none"> • UN Convention on the Elimination of all Forms of Discrimination Against Women (CEDAW)
Discrimination	<ul style="list-style-type: none"> • ILO Convention 111 on Discrimination (Employment and Occupation) • ILO Convention 100 • UN Convention on the Protection of the Rights of all Migrant Workers and Members of their Families • OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas
Violence & Disciplinary Practices	
1.3 Occupational Health & Safety (OHS)	
OHS Management	<ul style="list-style-type: none"> • ICMM Good Practice Guidance on Occupational Health Risk Assessment (2009) • International Labour Organization: C176 – Safety and Health in Mines Convention, 1995 (No. 176) <p>Hazard Assessment/internationally-accepted methodologies:</p> <ul style="list-style-type: none"> • Hazardous Operations Analysis (HAZOP) • Hazard Identification (HAZID) • Quantitative Risk Assessment (QRA) • ILO Convention 176 on Health and Safety in Mines
H&S Committee	
Workplace Hazards & Machinery	<ul style="list-style-type: none"> • ILO Convention 176 and ILO Recommendation 183 • ILO Code of Practice on Safety and Health in Underground Coalmines • CTC Congo (for non-compliance): The enterprise obliges its manual miners to cater for their own safety and production equipment and opposes any interference by the relevant authorities (SAESSCAM, Mines Administration)

Sub-Issue	External References
Workplace Hazards & Machinery	<ul style="list-style-type: none"> • Machinery in conformance with a Standard such as CSA Z460 Lockout or equivalent ISO or ANSI Standard • The American Conference of Governmental Industrial Hygienists (ACGIH): Threshold Limit Values for Chemical Substances in the Work Environment
Personal Protective Equipment (PPE)	<ul style="list-style-type: none"> • The American Conference of Governmental Industrial Hygienists (<i>IRMA</i>, p.51 – 2.2.4.2 <i>Inspections, Monitoring and Investigations</i>)
OHS Training	<ul style="list-style-type: none"> • RJC Section 2.6 par.9 on page 13
Building and Transport Safety	<ul style="list-style-type: none"> • The International Labour Organizations • United Nations Environment Programme. 2001. Awareness and Preparedness for Emergencies at the Local Level (APELL) for Mining, (Technical Report 41).
Electricity	
Emergency Preparedness	<ul style="list-style-type: none"> • United Nations Environment Programme. 2001. Awareness and Preparedness for Emergencies at the Local Level (APELL) for Mining, (Technical Report 41). • ILO Conventions 174 on Prevention of Major Industrial Accidents • ILO Convention 176 on the Safety and Health in Mines, 1998 • Occupational Health and Safety Assessment Series (OHSAS) 18001/2
Basic Supplies	<ul style="list-style-type: none"> • ILO Helpdesk Factsheet No. 6, 2009 • The American Conference of Governmental Industrial Hygienists (ACGIH): Threshold Limit Values for Chemical Substances in the Work Environment
Medical Care	<ul style="list-style-type: none"> • ILO Convention C176 – Safety and Health in Mines • ILO Convention 155 on Occupational Safety and Health • Access to Medical and Exposure Records and Permissible Exposure Limits (PELs), U.S. Department of Labor: Occupational Safety and Health Administration (OSHA) • Canadian Standards Association and Bureau de normalisation du Québec. 2013. Psychological health and safety in the workplace – Prevention, promotion, and guidance to staged implementation. (<i>IRMA</i>, p. 51–53, 2.2. <i>Occupational Health and safety Requirements</i>) • ISO/IEC 17025 certified or nationally accredited laboratory • national occupational exposure limits (OELs) and/or biological exposure indices (BEIs), if they exist (the ILO website provides links to agencies responsible for establishing exposure limits in various countries) • OELs/BEIs developed by the American Conference of Governmental Industrial Hygienists (ACGIH) • Threshold Limit Value (TLV) occupational exposure guidelines and Biological Exposure Indices (BEIs) by the American Conference of Governmental Industrial Hygienists (ACGIH) • The Pocket Guide to Chemical Hazards by the US National Institute for Occupational Health and Safety (NIOSH) • Indicative Occupational Exposure Limit Values by the European Union member states or other similar sources • Hazard Analysis Critical Control Point (HACCP) Standards
Hazardous Substances	<ul style="list-style-type: none"> • ICMM. 2009. Good Practice Guidance on Occupational Health Risk Assessment <p>Hazard Assessment/internationally-accepted methodologies:</p> <ul style="list-style-type: none"> • Hazardous Operations Analysis (HAZOP) • Failure Mode and Effects Analysis (FMEA) • Hazard Identification (HAZID) <p>Transport:</p> <ul style="list-style-type: none"> • IATA requirements (2005) • IMDG Code sea transport • UN Model Regulations of other international standards: Transport of Dangerous Goods – Model Regulations • Basel Convention on the Control of Transboundary Movements of Hazardous Waste • Rotterdam Convention on the prior Inform Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade
Mercury Use & Production	<ul style="list-style-type: none"> • Phase out dates of Annex A (Products) or Annex B (Processes) of the Minamata Convention on Mercury • Strategic Approach to International Chemicals Management (SAICM)

Sub-Issue	External References
Mercury Use & Production	<ul style="list-style-type: none"> GRI Guidelines UNIDO Technical Guidelines on Mercury Management in Artisanal and Small-Scale Gold Mining
Cyanide Use	<ul style="list-style-type: none"> International Cyanide Management Code
Silicate Exposure	
2. Societal Welfare	
2.1 Community Rights	
Residential & Indigenous Rights	<ul style="list-style-type: none"> UN Declaration on the Rights of Indigenous and Tribal Peoples ILO Convention C169: Indigenous and Tribal Peoples Convention IFC Performance Standard 7 ICMM. 2013. Indigenous Peoples and Mining. Position Statement. p. 3 (IRMA, p.104, Chapter 2) Voluntary Guidelines on the Responsible Governance of Tenure as defined by the Committee on World Food Security-Food and Agricultural Organization (CFS-FAO) in May 2012
Community & Stakeholder Engagement	<ul style="list-style-type: none"> World Resources Institute's Breaking Ground: Engaging Communities In Extractive And Infrastructure Projects (Herbertson et al. 2009) Principle 10 of the UN Rio Declaration of 1992
Free, Prior and Informed Consent (FPIC for Indigenous People)	<ul style="list-style-type: none"> UN Declaration on the Rights of Indigenous Peoples UN Guidelines on Indigenous Peoples' Issues ILO Convention 169 Extractive Industries and Indigenous Peoples. UN Report of the Special Rapporteur on the Rights of Indigenous Peoples. IFC Performance Standard 7: Indigenous Peoples A New Dawn over the Land: Shedding Light on Collective Ownership and Consent." Gilbert, J. and Doyle, C. 2011. (IRMA, p. 109, Chapter 2.10 FPIC)
Cultural Heritage	<ul style="list-style-type: none"> IFC Performance Standard 8 and Guidance note IFC's Guidance Note 7: Performance Standards on Environmental and Social Sustainability Highly protected areas: World Heritage Sites; IUCN category I-III protected areas; IUCN category I-V marine protected areas; core areas of UNESCO biosphere reserves Protection of the heritage of indigenous people (1995): Final report of the Special Rapporteur, Mrs. Erica-Irene Daes, in conformity with Subcommission resolution 1993/44 and decision 1994/105 of the Commission on Human Rights Negotiating Cultural Heritage? (2008) by Aboriginal-Mining Company Agreements in Australia; The Anglo Social Way: Management System Standards. Anglo American (2009) and Why Cultural Heritage Matters, Rio Tinto (2011)
Resettlement & Displacement	<ul style="list-style-type: none"> UN Basic Principles and Guidelines on Development-Based Evictions and Displacement UN Committee on Economic, Social and Cultural Rights (CESCR) (1997): General Comment No. 7: The right to adequate housing (Art. 11.1): forced evictions IFC Performance Standard 5 European Bank for Reconstruction and Development. Performance Reqt 5. Land Acquisition, Involuntary Resettlement and Economic Displacement. Basic Principles and Guidelines on Development-based Evictions and Displacement (Kothari, M. 2007) World Bank Operational Manual. Operational Directive OD 4.30 (1990) IFC Handbook for Preparing a Resttlemnt Action Plan(2002)
Prevention & Medical Care	<ul style="list-style-type: none"> ICMM Good Practice Guidance on Health Impact Assessment IFC Performance Standard 2
Conflicts and Armed Groups	<ul style="list-style-type: none"> UN Global Compact Guidance on Responsible Business in Conflict-Affected and High-Risk Areas UN Convention Against Bribery Voluntary Principles on Security and Human Rights

Sub-Issue	External References
Conflicts and Armed Groups	<ul style="list-style-type: none"> • OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas and the Supplement on Gold and especially the “Red flags” • The Conflict Barometer produced by the Heidelberg Institute for International Conflict Research • UN Security Council Resolutions and Peacekeeping Operations • US State Department “Conflict Minerals Map” and associated reports required by the Dodd Frank Act • US State Department Country Reports on Human Rights Practices • Geneva Academy indicators for conflict-affected and high-risk areas • Transparency International Corruption Index • World Gold Council’s Conflict-Free Gold Standard. A2.4. • IFC Performance Standards • Foreign Corrupt Practices Act and equivalent authoritative national legislation <p>For international sanctions:</p> <ul style="list-style-type: none"> • The United Nations Security Council • The European Union • The African Union (and specifically the Department of Peace and Security) • The Organization of American States
Security Forces	<ul style="list-style-type: none"> • UN Code of Conduct for Law Enforcement Officials • UN Basic Principles on the Use of Force and Firearms by Law Enforcement Officials • Voluntary Principles on Security and Human Rights • International Code of Conduct for Private Security Service Providers (ICoC) • OECD Due Diligence Guidance for Responsible Supply Chain
2.2 Local Value Added	
Payment of taxes (incl. EITI)	<ul style="list-style-type: none"> • The Extractive Industries Transparency Initiative (EITI) or an equivalent mandatory transparency regime • European Union Accounting Directive 2013/34/EU • European Union Transparency Directive 2013/50/EU (See IRMA Guidance for examples and links to equivalent mandatory transparency regimes, e. g., US, Canadian, Norwegian) • Transparency International, The Anti-Corruption Plain Language Guide, 2009 (ASI) • OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas
Local Workforce	
Local Procurement	
Infrastructure Investments	
Community Initiatives	
Support of Close ASM	<ul style="list-style-type: none"> • Communities and Small Mining (CASM) – working together paper
Community Approval & Community Development Plan	
Institutional Capacity & Partnerships	
3. Use of Natural Resources	
3.1 Land Use and Biodiversity	
Internationally Protected Areas (No-Go Areas)	<ul style="list-style-type: none"> • The official list of World Heritage Sites by the World Database on Protected Areas (WDPA) • Sites on a State Party’s official Tentative List for World Heritage Site inscription • The official list of IUCN: e. g. category I-III protected areas and category I-V marine protected areas • UNESCO biosphere reserves list • IFC Performance Standard 6 on Biodiversity Conservation and Sustainable Natural Resource Management

Sub-Issue	External References
Legally Protected Areas	<ul style="list-style-type: none"> • The official list of IUCN: e.g. V–VI protected areas • Natura 2000 sites list • Indigenous and Community Conserved Areas (ICCAs) • Important Bird Areas (IBAs) • Ramsar sites that are not IUCN category I–III protected areas • UNESCO Biosphere Reserves beyond the core areas • IFC Performance Standard 6 on Biodiversity Conservation and Sustainable Natural Resource Management
Legally Unprotected Areas	<ul style="list-style-type: none"> • High Conservation Value' (HCVs) developed originally by the Forest Stewardship Council (FSC) • IFC Performance Standard 1 for community and stakeholder engagement • WHO recommended Classification of Pesticides by Hazard Classes 1a and 1b and 2 • Annex A and B of the Stockholm Convention on Persistent Organic Pollutants (2001) • IFC Performance Standard 6 on Biodiversity Conservation and Sustainable Natural Resource Management
Threatened species	<ul style="list-style-type: none"> • IUCN lists of species threatened or threatened by extinction by extinction
Alien species	
Ecosystem Services	<ul style="list-style-type: none"> • ICMM Good Practice Guidance for Mining and Biodiversity • World Business Council on Sustainable Development • Corporate Ecosystem Services Review (World Resources Institute)
Deep Sea Exploration and Mining	
Integrated Land Management	
Conflict with Agriculture	
Conflict with LSM/Indigenous	
3.2 Water Extraction and Use	
Water Extraction & Management	<ul style="list-style-type: none"> • Applied Groundwater Modeling: Simulation of Flow and Advective Transport. Second Edition. Academic Press. (Anderson et al. 2015)
Surface Water	<ul style="list-style-type: none"> • The Natural Flow Regime. BioScience. Vol. 47, No. 11. (Poff et al. 1997)
Groundwater	
Mine Dewatering	
Pit Lakes and Mine Workings	
Non-Industrial Storm Water	
Efficient Use and Recycling	
3.3 Energy Use	
Renewable Energies	
Efficient Use	
3.4 Material Use	
Sustainable Sourcing	
Natural Resource Use	
Efficient Use & Recycling	
Material Stewardship	<ul style="list-style-type: none"> • Maximizing Value: Guidance on implementing materials stewardship in the minerals and metals value chain, ICMM • Minerals and Metals Management 2020, ICMM

Sub-Issue	External References
4. Emissions Prevention and Land Reclamation	
4.1 Closure and Land Rehabilitation	
Exploration reclamation	
Reclamation and closure planning	<ul style="list-style-type: none"> • Toolkit: Planning for Integrated Closure: Toolkit (2008), ICMM • ICMM 2005 & 2006 • Kuipers 2000 • USDA 2004 • Business and Biodiversity Offsets Programme (BBOP) endorsed by the Convention on Biological Diversity and the Ramsar Convention • ICMM Planning for Integrated Mine Closure Toolkit
Financial surety for mine closure	<ul style="list-style-type: none"> • IFC Performance Standards • ICMM 2005 • Kuipers 2000 • USDA 2004
Decommissioning, subsistence and backfilling	
Post-closure activities	
Financial surety for post-closure activities	
Reclamation and alternative after-uses	
Rehabilitation of historical pollution	
4.2 Mine Wastes	
Reduction of Emissions (gen.)	
Waste Water and Water Quality Management	<ul style="list-style-type: none"> • US Environmental Protection Agency's Hardness-based or Biotic Ligand Model „chronic“ calculations • Australian National Health and Medical Research Council • Australian and New Zealand Environment and Conservation Council • Canadian Council of Ministers of the Environment • European Union • Food and Agriculture Organization of the United Nations; Health • Health Canada • International Finance Corporation of the World Bank Group • US Fish and Wildlife Service • World Health Organization of the United Nations • Canadian Metal Mining Effluent Regulations • Drinking Water Standard • Irrigation/Agricultural/Livestock Standard • IFC EHS mining guidelines
Acid Mine Drainage	<ul style="list-style-type: none"> • IFC EHS mining guidelines • Global Acid Rock Drainage (GARD) Guide issued by the International Network for Acid Prevention
Waste Management (gen)	<ul style="list-style-type: none"> • IFC EHS mining guidelines
Hazardous and Chemical Waste	
Overburden, Tailings and Effluents	<ul style="list-style-type: none"> • IFC's Performance Standards • ILO's Convention 176 on Safety and Health in Mines • Canadian Dam Association Dam Safety Guidelines
Land Application Disposal	

Sub-Issue	External References
Overburden, tailings, residues and effluents (spills, facilities, inspections)	<ul style="list-style-type: none"> • IFC's Performance Standards • ILO's Convention 176 on Safety and Health in Mines • Dam Safety Guidelines (2007) and Application of Dam Safety Guidelines to Mining Dams (2014) by Canadian Dam Association • World Bank Operational Manual. OP 4.37 on review of the investigation, design, construction and filling of new large dams and complex remedial work on existing dams. • Report on Mount Polley Tailings Storage Facility Breach, Independent Expert Engineering Investigation and Review Panel, Province of British Columbia (2015) • Regulations from Arizona, Nevada and New Mexico guidance and regulations • Design, operation and maintenance of structures according to specifications of ICOLD3 and ANCOLD4 or other internationally recognized standards based on a risk assessment study
4.4 Air Emissions and Noise	
Air Quality Management	<ul style="list-style-type: none"> • US EPA's Air Quality Guidelines, Appendix W To Part 51—Guideline On Air Quality Models • The Application of Models under the EU Air Quality Directive (2011) and other technical guidance; European Environment Agency • German TA Luft (Technical Instructions on Air Quality Control) Regulation • EU's Air Quality Standards • WHO Ambient Air Quality Guidelines • National or international methods for sample collection and analysis, e. g. by The International Organization for Standardization; The European Committee for Standardization; U.S. Environmental Protection Agency
Dust and Fugitive Emissions	
Noise and Vibrations	<ul style="list-style-type: none"> • IFC Performance Standard requirements on allowable noise levels • The Industrial Noise Policy developed by the NSW Environment Protection Authority • Australia and New Zealand Environment Council's Technical basis for guidelines to minimise annoyance due to blasting overpressure and ground vibration (1990) • The American Conference of Governmental Industrial Hygienists (ACGIH): Threshold Limit Values for Chemical Substances in the Work Environment
Greenhouse Gas Emissions	<ul style="list-style-type: none"> • IFC Performance Standard 2 Guidelines • WRI and WBCSD' GHG Protocol Corporate Accounting and Reporting Standard (GHG Protocol) • ISO 14064 • UN Framework Convention on Climate Change, the Company is committed to reducing its Green House Gas (GHG) emissions
5. Corporate Governance	
5.1 Business Practices	
Business ethics (gen.)	
Corruption (gen.)	<ul style="list-style-type: none"> • UN Convention against Corruption
<ul style="list-style-type: none"> • Bribery and Facilitation 	<ul style="list-style-type: none"> • UN Convention against Corruption • OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas
Extortion	
Money Laundering	<ul style="list-style-type: none"> • OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas
Mergers and Acquisitions	
Divestment	
Fair Competition	
Pricing and Price Premium	

Sub-Issue	External References
Shareholder Value	
5.2 Management Practices	
Legal Compliance	
Policies	
Impact Assessment and Management Systems	<ul style="list-style-type: none"> • WBCSD's GHG Reporting Protocol
Human Rights Impact Assessment	<ul style="list-style-type: none"> • International Bill of Human Rights • Universal Declaration of Human Rights • UN Guiding Principles on Business and Human Rights • UN "Protect, Respect and Remedy" Framework • Universal Declaration of Human Rights • UN Global Compact – Company Communication on Progress • UN Guiding Principles on Business and Human Rights • Voluntary Principles on Security and Human Rights • OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas and the Supplement on Gold • Office of the High Commissioner for Human Rights (OHCHR): OHCHR lists a number of United Nations human rights instruments that enumerate the rights of persons belonging to particular groups or populations (Ruggie, J. 2011) • IRMA, p. 59, Chapter 2.4 Human Rights Due Diligence and Compliance • Business and Human Rights Resource Centre website • International Alert Conflict Sensitive Business Practices • International Committee of the Red Cross – Business and Humanitarian Law
Environmental and Social Impact Assessment	<ul style="list-style-type: none"> • National legal requirements for undertaking ESIA • The UN University's guidance on international theory and practice of environmental (and social) impact assessment and other elements typically contained in an ESIA report • IFC Performance Standard 1: Assessment and Management of Environmental and Social Risks and Impacts
Environmental Management	
Sustainability Reporting	<ul style="list-style-type: none"> • The Global Reporting Initiative
Grievance Mechanisms and Conflict Solution	<ul style="list-style-type: none"> • UN Guiding Principles on Business and Human Rights (specifically Principles 29, 30 and 31)
Financial Accounts	<ul style="list-style-type: none"> • International Financial Reporting Standards (IFRS), by the International Accounting Standards Board (IASB)
Production Plan	
Responsible Person for the Standard	

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ISBN: 978-3-943566-94-9 (PDF)