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Monitoring impact of mineral sustainability standards to align with the Sustainable Development Goals

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Cover photograph

The laterite bauxite plateau near Weipa in far north Queensland. This small mine site is the subject of a collaborative research project to generate better mine rehabilitation outcomes and promote indigenous employment.

Photographer: Associate Professor Peter Erskine, Centre for Mined Land Rehabilitation, Sustainable Minerals Institute, The University of Queensland.

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1. Introduction

Since the inception of the Mining and Metals for Sustainable Development (MMSD) process in the late 1990s, the imperative to show meaningful change in the sector has intensified. The number of responsible mining, minerals and metals supply chain initiatives[1] has grown rapidly over the past twenty years.

The 2030 Agenda for Sustainable Development of the United Nations has invigorated efforts for a more coherent, integrated range of sustainability initiatives across all sectors and stakeholders. The Agenda 2030 replaced the Millennium Development Goals (MDGs) of 2000 with 17 Sustainable Development Goals (SDGs), 169 targets and a detailed system of global, national and thematic indicators against which to measure progress. This umbrella of goals, targets and indicators covers the many aspects of environmental stewardship, economic and human development, governance, peace and justice that together constitute global norms for responsible business conduct.

For the increasingly complex field of mineral sustainability initiatives, the SDGs provide a much-needed focal point. A significant difference between the SDGs, and the MDGs that went before them, is a shift in emphasis: from partnerships for development between nation-states, to responsibility resting on all stakeholders to achieve the goals. The private sector is to play a more pivotal role, to incorporate the SDGs into business operations. This is prompting individual companies, industry associations and multi-stakeholder initiatives for responsible business to align their efforts with the SDGs.

This study addresses the question:

"How can the monitoring and evaluation of mineral sustainability initiatives be better designed and aligned to measure progress towards the SDGs?"

The importance of raw materials to the global economy, bringing both opportunities and risks to resource-rich developing countries, places mining, mineral and metal supply chains firmly on the Agenda 2030. A seminal study titled "Mapping Mining to the Sustainable Development Goals: A Preliminary Atlas." (UNDP, CCSI, UNSDSN, WEF, 2016) has identified how the extractives sector has the potential to contribute to the SDGs. The study highlights the dual aspects of sustainability for the mining industry:

1. **Contributing to sustainable development** by producing raw materials, paying royalties and taxes, employment, infrastructure and corporate social investment (making positive impacts within the area of influence); and
2. **Operating sustainably** (avoiding negative social, environmental, governance and human rights impacts).

How to measure this contribution of mining to the SDGs is a key challenge identified in the study and subsequent work of the Sustainable Development Solutions Network. Alongside the growth of mineral sustainability initiatives in recent years, the field of environmental and social impact assessment has become more adept at quantifying the effects of mining at the site-level of operations. A growing number of mining companies measure and report on social and

[1] For brevity, all initiatives relating to ethical, sustainable and responsible mining, minerals and metals supply chains, as well as the extractive industries more broadly (the EITI) are referred to in the report as 'mineral sustainability initiatives'.

environmental impacts in sustainability reports published alongside their annual financial reports. However, there remains a gap between these grounded, context-specific impact assessments and the more general, high-level SDG targets.

For example, the International Council on Mining and Metals (ICMM) has been working to profile the contribution of its members and provide guidance to all companies on how to track their contribution to the SDGs. It is a step in the right direction, but relatively easy to gather these good news stories from individual companies. In a highly competitive industry, it is unsurprising that companies engage with the SDGs as an opportunity to differentiate themselves, protect and enhance corporate reputation. Monitoring and evaluation of mining impacts – both positive and negative – needs to go beyond this level of analysis to really understand the sector in relation to the SDGs. This requires measuring more than the sum of site-level activities of every mine or the sustainability performance of each company. These more aggregated impacts cannot be captured at the level of single company reporting.

How should the impact of multi-stakeholder partnerships for development be measured, for instance, between public and private sector, or between companies and NGOs, if the indicators are aimed only at individual companies? In addition, how should the cumulative impacts of many mining companies operating in a resource-rich region and alongside other sectors like agriculture or tourism, be measured?

Existing sustainability initiatives for responsible mining and supply chains may be regarded as a 'bridge' between the project-specific impacts at local and company level, and broader, societal aspects of sustainable development, provided they are well integrated and aligned with the overarching goals and indicators of the Sustainable Development Framework. The role of sustainability standards in this respect has been identified in a report issued by the WWF and ISEAL, which points out that:

> *Credible standard systems can not only shape corporate policies and set sector-wide agendas or commitments, but also measure progress and verify whether such policies and commitments have been followed through* (Ugarte et al, 2017: 18).

The challenges of attributing change in complex societal and environmental systems to specific stakeholders and their actions are well documented and will be explored further in this report. Despite the methodological challenges, systems to monitor and evaluate contribution to change are increasingly factored into the design of sustainability initiatives. For example, the ISEAL Alliance has led its members toward more rigorous assessment of their impacts, with a code of good practice for impact assessment and development of common core indicators.

The ISEAL Alliance has come to represent a broad range of sustainability standards and certification schemes, firstly for renewable natural resources and agricultural commodities, such as coffee, cocoa, timber, palm oil and fish, and more recently for non-renewables: minerals and metals. This affords opportunities for knowledge transfer for the extractives sector from the more established initiatives in other sectors, including how to develop rigorous systems for monitoring and evaluation.

International organisations and development agencies are also leading approaches to monitoring and evaluation of sustainable development initiatives. For example, the UK DFID commissioned a review in 2010 of the impact of transparency and accountability initiatives in five sectors, including natural resource governance (Gaventa & McGee, 2013). The review notes that there has been a 'turn to evidence' amongst development cooperation partners, who are under increasing pressure from tightening budgets to demonstrate results in all they do. With

governance, accountability and transparency initiatives now constituting a substantial portion of the programmes of many such actors, “the search is on for credible, reliable ways to assess initiatives’ effectiveness and impact.” (Acosta, 2013).

Previous research by CSRM and other projects mapping sustainability standards in this sector have found significant shortcomings in the current lack of interoperability between initiatives (Mori Junior et al, 2017; Kickler & Franken, 2017; Rüttinger & Scholl, 2017; Russillo & Carey, 2018). This work has noted the proliferation of mineral sustainability initiatives to the extent that the sheer number of them has raised questions about their credibility and effectiveness. Comparative analysis of initiatives in the sector has looked at the design of certification schemes (Mori Junior et al., 2015; Mori Junior et al., 2016), the ability of sustainability initiatives to work together on common goals (Mori Junior et al., 2017) as well as their practices and scope of operations (Kickler & Franken, 2017; Rüttinger & Scholl, 2017; WEF, 2016). By investigating how mineral sustainability initiatives assess and measure their results, this study provides a further overview of practices in the sector and develops recommendations for greater alignment between them and the SDGs.

2. Scope and methodology

The scope of the study is to identify how mineral sustainability initiatives monitor and evaluate their impacts, how these systems could be improved and aligned to measure contribution to sustainable development of mining, minerals and metals supply chains.

The study focuses on a sample of fourteen sustainability initiatives in this sector:

Table 1: Sample of mineral sustainability initiatives

Name	Objective
Aluminium Stewardship Initiative (ASI)	ASI aims to promote the responsible production, sourcing and stewardship of aluminium, and to improve the overall sustainability performance of the entire value chain of aluminium-containing products. The initiative enables member companies to certify against a Performance Standard and a Chain of Custody Standard.
Alliance for Responsible Mining - Fairmined Standard for Gold and Associated Precious Metals (ARM-Fairmined)	ARM-Fairmined aims to promote the progressive organisation and formalisation of the Artisanal and Small-Scale Mining (ASM) sector, bringing with it improved labour rights, safer working conditions for miners, and strengthened miners' organizations with the capacity to campaign for legislation and public policies that promote their rights and enable a responsible ASM sector. It provides a certification scheme for Artisanal and Small-scale Miners' Organizations (ASMO).
Bettercoal Initiative	The Bettercoal Initiative aims to advance continuous improvement of corporate social responsibility, including social, environmental and ethical practices in the coal supply chain.
Conflict-Free Gold Standard	The World Gold Council's CFGS aims to provide a mechanism by which gold producers can assess and provide assurance that their gold has been extracted in a manner that does not cause, support or benefit unlawful armed conflict or contribute to serious human rights abuses or breaches of international humanitarian law.
Extractive Industries Transparency Initiative (EITI)	The EITI Standard aims to promote the open and accountable governance of extractive industries, to reduce corruption in the sector and increase resources available for sustainable development. It consists of procedural and output requirements for multi-stakeholder resource governance on a country level.
Fairtrade Standard for Gold and Associated Precious Metals (Fairtrade)	Fairtrade Gold aims to create opportunities for ASM miners and their communities promoting fairer market access and the formalisation of the ASM sector. It is a certification scheme for improving working conditions for producers, strengthened producer organisations with the capacity to lobby for legislation and public policies that promote a responsible ASM sector, improved environmental management, social security, gender equality, child protection and the elimination of child labour in mining communities, the well-being of families and children, benefits to local communities in mineral rich ecosystems, and improved governance to this sector.
Global Report Initiative – Mining and Metals Sector Supplement	The GRI aims to improve transparency of impacts on society, environment and economy of all kinds of organisations and provide guidance on sustainability reporting. The G4 Mining and Metals Sector Supplement contains a set of disclosures for use by all organizations in the Mining and Metals sector.
Initiative for Responsible Mining Assurance (IRMA)	IRMA aims to establish a third-party independent assurance system and develop standards that improve the social and environmental performance of industrial mining operations.
Kimberley Process	The Kimberley Process aims to stem the flow of rough diamonds (conflict diamonds) used by rebel movements to finance wars against legitimate governments. It is a certification scheme for traceability of rough diamond exports.
OECD - Due Diligence Guidance for Responsible Supply Chains of Minerals	The objective of the OECD Due Diligence Guidance is to help companies respect human rights and to avoid contributing to conflict through their mineral sourcing practices through a risk-based due diligence framework.

Name	Objective
from Conflict-Affected and High-Risk Areas	
Regional Initiative on Illicit Trade in Natural Resources (RINR) of the International Conference on the Great Lakes Region (ICGLR)	The ICGLR's Regional Initiative on Illicit Trade in Natural Resources aims to provide support for sustainable, conflict-free mineral chains in and between member states of the International Conference on the Great Lakes Region with a view to eliminating support to armed groups that sustain or prolong conflict, and/or otherwise engage in serious human rights abuses. It has six tools, including a Regional Certification Mechanism for 3Ts and gold exports.
Responsible Jewellery Council Code of Practices (RJC)	RJC aims to provide a common standard, based on international standards for responsible business practices, to advance responsible ethical, social and environmental practices, which respect human rights, throughout the diamond, gold and platinum group metals jewellery supply chain, from mine to retail.
Responsible Minerals Initiative	The Responsible Minerals Initiative aims to provide companies with tools and resources to make sourcing decisions that improve regulatory compliance and support responsible sourcing from conflict-affected and high-risk areas. The Responsible Minerals Initiative was previously known as the Conflict-Free Smelter Initiative.
XertifiX	XertifiX aims to improve working conditions and combat child labour in quarries and at processing sites for natural stone. It was the first scheme for a responsible production of natural stone. XertifiX complying producers need to hold a licence to use the XertifiX label on products.

The study is based on primary and secondary sources of information from a literature review and key informant interviews with staff and stakeholders of the fourteen initiatives. The literature review of documents and analysis of the initiatives' impact included critical assessments (academic or NGO), self-assessment by initiatives themselves and independent evaluation by consultants to the initiatives. A comparative analysis was then conducted of publicly available information on the selected initiatives' websites pertaining to the systems of monitoring and evaluation. Additional information was gathered in semi-structured, qualitative interviews with key informants from the selected initiatives.

A conceptual framework for analysis of the sustainability initiatives was developed, based on the ISEAL code of good practice for impact assessment of sustainability standards, and the Sustainable Development Framework of the SDGs, targets and indicators. The framework identifies the components of an M&E system and a matrix of SDGs, targets and indicators most relevant to mineral sustainability initiatives.

The comparative analysis profiles how the impact of each of the mineral sustainability initiatives is currently assessed, as well as future plans for M&E design and implementation. We identify challenges for M&E specific to each initiative and suggests ways in which the M&E systems could be strengthened and aligned with other initiatives and the SDGs. The conclusion draws together general findings and recommendations of the study.

Conceptual framework

Impact evaluation (or assessment) is 'a study of the attribution of changes in the outcome to an intervention, which typically focuses on the effect of the intervention on the outcome for the beneficiary population' (3ie Impact Evaluation Glossary, 2012). For the purposes of this study, a mineral sustainability initiative is defined as:

> *An intervention in the business conduct of mining, minerals and metals supply chains to improve environmental, social and governance performance.*

In this context, an 'impact' describes 'how an intervention alters the state of the world' (ibid.) Note that the impact of mineral sustainability initiatives in altering the mining and related industries as a whole should not be confused with the impact of mining companies on the stakeholders within their area of influence. The impact assessment of mineral sustainability initiatives is at a different level of analysis to the environmental and social impact assessment conducted by mining companies and host governments in the course of mining approvals and operations. We therefore distinguish between the assurance systems of sustainability initiatives, by which member companies or governments are typically certified against a standard, and the monitoring and evaluation system to measure the overall impact of the sustainability initiative itself.

The ISEAL Alliance identifies monitoring and evaluation of impact as 'a cornerstone of credibility' for sustainability initiatives:

> *M&E systems track progress toward achieving intended outcomes and evaluate the contribution that the initiative makes toward achieving long-term social, environmental or economic impacts* (ISEAL Code of Good Practice Assessing the Impacts of Social and Environmental Standards Systems, 2014).

A recent study of transparency and accountability initiatives (2010) further distinguishes between 'effectiveness' and 'impact'. 'Effectiveness' is used to describe 'the extent to which initiatives are successful at achieving their stated goals'; and 'impact' as 'the attainment of the initiative's further-reaching or 'second-order' goal. For example, the EITI could be considered 'effective' if it has achieved greater information disclosure in implementing countries. It would have had an impact if this transparency has led to a reduction in corruption and to sustainable development of these countries. Effectiveness is easier to demonstrate than impact, and a necessary but insufficient condition for impact. Sustainability initiatives face all the challenges of assessing impact in the development and social change field, where impacts are rarely visible, tangible or countable. (Gaventa & McGee, 2013, p. s8).

The ISEAL Impacts Code is the tool by which ISEAL encourages its members "to measure and improve the results of their work and to ensure that standards deliver the desired impact." It is subdivided in requirements of compliance with the code, aspirational goals and guidance stipulations. The requirements established by ISEAL for M&E mechanisms constitute a benchmark reference of best practices for sustainability initiatives aiming to measure and disclose their impacts to stakeholders. The following aspects of a sound M&E mechanism were identified from the Impacts Code and general literature on impact monitoring and evaluation (see table 2):

1. Clear objectives and intended change
2. Appropriate, measurable indicators
3. Baseline data

4. Regular data collection
5. Evaluation, review and reporting

Requirements for a good M&E system are that it is:

- Clear and up to date
- Adequately resourced
- Participatory
- Interoperable with other initiatives and the SDGs

To measure progress towards the 17 SDGs and 169 targets of the Sustainable Development Framework, there are over 250 indicators under development (UN Statistical Commission, 2017). The UN Sustainable Development Solutions Network (SDSN) has already identified several existing initiatives with a role to play in measuring specific SDGs, such as the EITI for SDG targets 16.6 and 16.7 (building transparent and accountable institutions; widening political space for stakeholder engagement), and the GRI for SDG 12.6 (to encourage companies to integrate sustainability information into their reporting cycle).

In this vein, the other initiatives within our sample could each be aligned with specific SDGs and targets, such as, the initiatives to empower artisanal and small-scale miners with poverty alleviation (SDG1) and decent work (SDG8); the responsible large-scale mining and supply chain initiatives with target 12.2 (Achieve sustainable management and efficient use of natural resources); and the 'conflict minerals' initiatives with peace and justice (SDG16). This is not to say that other SDGs and targets are irrelevant to these initiatives, as all of the initiatives address cross-cutting environmental, socio-economic, human rights and governance issues from their various approaches (see Mori Junior, et al 2017 for a detailed mapping of the thematic scope of mineral sustainability initiatives). However, it is useful to the study of potential interoperability and alignment to the SDGs to identify four 'clusters' of initiatives around specific SDGs and targets.

Table 3 identifies the specific SDGs, targets and indicators most relevant to the sample of mineral sustainability initiatives.

Table 2: Framework for assessment the M&E systems of mineral sustainability initiatives

ISEAL Code of Good Practice for Assessing Impacts									
M&E System Requirements				**Defining the intended Change**	**Monitoring and Evaluating**			**Learning and Improving**	**Transparency and Public Information**
Scope and boundaries of the M&E system were defined and are up to date (**What is and what is not included**).	Sufficient resources are allocated (**budget, skilled staff members, person designated to be responsible for M&E**).	Interoperability **(potential for collaboration; standardised indicators; shared databases, aligned data collection periods).**	Participation **(Stakeholders were involved? When? What was the outcome of this engagement ?).**	What is the "Intended Change"? (e.g. LogFrame, Theory of Change, Outcome Mapping) **(Intended outcomes, impact, assumptions casual pathways, unintended effects and influencing factors.**	Indicators to track progress towards intended outcomes and impact**.**	Baseline data, counterfactuals or a hypothetical prediction of what would have happened in the absence of the intervention in place?	Data is collected on an on-going basis? **(How often? How? Who?)**	Activities in place to use results to improve effectiveness of the M&E system and learning **(inclusion in meeting agendas, presenting in conferences / round tables, sharing and discussing results?)**	Results are publicly available and contain enough information for the scheme owner and other stakeholders to understand conclusions and quality of the work conducted **(e.g. who conducted the evaluation, methodology indicators used, limitations, contact point for submission of comments.**

Table 3: SDG targets and indicators relevant to selected mineral sustainability initiatives[2]

SDG targets and indicators	Relevant sustainability initiatives
1.1 By 2030, eradicate extreme poverty for all people everywhere… 1.2.1 Proportion of population living below the national poverty line, by sex and age.	All, but especially the initiatives aimed at empowering ASM miners: Fair Trade Gold, ARM's Fairmined Standard
8.3 Promote… decent job creation, entrepreneurship… encourage formalization and growth of micro-, small-and medium-sized enterprises... 8.3.1 Proportion of informal employment in non-agricultural employment by sex.	As above, especially Fair Trade Gold and ARM's Fairmined Standard
8.7 Forced labour, modern slavery, child labour 8.7.1 Proportion and number of children aged 5-17 years engaged in child labour, by sex and age.	All except EITI, KP. Xertifix on labour practices in natural stone production
8.8 Protect labour rights and promote safe and secure working environments for all workers, including migrant workers 8.8.1 Frequency rates of fatal and non-fatal occupational injuries, by sex and migrant status.	All except EITI, KP Xertifix on labour practices in natural stone production
Goal 12. Ensure sustainable consumption and production patterns 12.4 By 2020, achieve environmentally sound management of chemicals and all wastes… 12.4.2 Hazardous waste generated per capita and proportion of hazardous waste treated, by type of treatment	Responsible sourcing and chain of custody initiatives, especially ASI, Bettercoal, RJC, RMI, ResponsibleSteel for sustainable consumption; IRMA, CFGS for sustainable production
12.6 Encourage companies, especially large and trans-national companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle 12.6.1 Number of companies publishing sustainability reports.	All, especially GRI mining and metals supplement for reporting
16.1 Significantly reduce all forms of violence and related death rates everywhere 16.1.2 Conflict-related deaths per 100,000 population, by sex, age and cause.	KPCS, OECD-DD, ICGLR, RMI, WGC
16.5 substantially reduce corruption and bribery in all its forms 16.5.2 Proportion of businesses that… paid a bribe to a public official, or were asked for a bribe… during the previous 12 months.	All initiatives that include business integrity standards and the EITI Standard
17.17 encourage and promote effective public, public-private, and civil society partnerships, building on the experience and resourcing strategies of partnerships 17.17.1 Amount of USD committed to public-private and civil society partnerships.	EITI and other multi-stakeholder initiatives

[2] This table is indicative only, and not a comprehensive list of all relevant SDGs, targets and indicators across all themes covered by the 15 initiatives.

Comparative analysis of M&E systems

The following section of the report profiles each of the mineral sustainability initiatives and provides an analysis of their approaches to monitoring and evaluation. Where relevant, academic and independent assessments of the effectiveness of these initiatives are cited, in addition to documents and information provided by the initiatives themselves. The profiles are listed in order of the four areas of most relevance to the SDGs.

3. Initiatives for sustainable livelihoods of artisanal and small-scale miners

3.1 ARM-Fairmined Standard

The Alliance for Responsible Mining (ARM) was established in 2004, with a mission to empower artisanal and small-scale miners and promote their inclusion in the formal economy (ARM website). The ARM-Fairmined Standard for Gold and Associated Precious Metals is a voluntary certification scheme, which aims to create opportunities for artisanal and small-scale miners and their communities (Version 2, 2014). The objective of the Standard is:

> …to promote the progressive organization and formalization of the ASM sector, bringing with it improved labour rights, safer working conditions for miners, and strengthened miners' organizations… improved environmental management, especially mitigating the effects of use of mercury and other toxic chemicals, enhancing ecological restoration, and responsible water management… better social security, gender equality, child protection and elimination of child labor in certified organizations… fairer market access and a premium for social investment. (V.2, 2014)

Building on this mission, ARM considers that the most significant impacts of ARM-Fairmined Standard are the improvement of artisanal and small-scale mining practices and access to fair market conditions, which will generate long-term positive outcomes for artisanal and small-scale miners and their communities (Interview, April 2018).

ARM-Fairmined has strengthened its impact evaluation strategy in recent years, although its M&E system is still under development. A Theory of Change (ToC) was adopted in 2015, which is publicly available. A team responsible for M&E has been created and instruments put in place to monitor and evaluate impacts of selected certified mining organisations. Information about organisational uptake and case-specific improvement in relation to the Fairmined Standard is reported on the website. New project proposals for ARM-Fairmined implementation always include a budget and time allocated for M&E.

Like other certification schemes with third party assurance, the main continuous source of information for M&E is the data provided by audit firms during the certification and re-certification of mining organisations. The advantage of this process is that the data is credible and is collected regularly and consistently. A limitation, however, is that the auditors focus narrowly on checking compliance against the Fairmined Standard. Further contextual and historical information is needed to assess the broader impacts of the implementation of the Standard.

ARM-Fairmined offers support to mining organisations by providing a gap analysis of their mining practices before they seek certification. This information is later used as a source of baseline data once the mining organisation is certified. Not all mining organisations that seek certification

against the Fairmined Standard make use of ARM's support, however. This is a challenge for M&E, as comprehensive baseline data for all implementing mining organisations is not available.

In 2017 Fairmined conducted impact assessments of certified mining organisations in Colombia, Peru and Bolivia, which had yet to be reported at the time of writing. Further impact assessments are planned by the ARM-Fairmined M&E team.

ARM-Fairmined is updating its indicators and data collection instruments for more rigorous assessment of activities, outcomes and impact. Indicators currently under discussion relate to participation of beneficiaries in capacity-building sessions (activities); changes in levels of compliance with good mining practices by certified mining organisations before and after ARM-Fairmined intervention (outcomes); and socio-economic and environmental indicators of change (impact). Perceptions of change and impacts observed by beneficiaries of infrastructure and programs funded with the Fairmined Premium will be incorporated into a holistic assessment of the ARM-Fairmined intervention, as well as external expert studies of environmental and socio-economic change.

The two key challenges for ARM-Fairmined impact assessment relate to difficulty quantifying and attributing complex socio-economic and environmental change to their intervention; and limited resources for M&E. Data to evaluate changes in mining practices (outcomes) is easier to quantify than data to evaluate economic, social and environmental changes for miners and their communities (impact). In addition, the majority of external funding opportunities involve cooperation to support mining organisations during the pre-certification phase, rather than tracking impact over the medium- to long-term (Interview, April 2018).

The evaluation of impacts of ARM-Fairmined will be used to provide post-certification support to mining organisations, as it enables stakeholders to track change over the medium- and long-term. The M&E team periodically runs internal sessions with local coordinators and leaders to foster more participatory M&E within ARM-Fairmined. Externally, the M&E team subscribes to the ISEAL Alliance and other initiatives to identify impact evaluation best practices and share experience on challenges and opportunities in this space. Analysis of how the ARM-Fairmined Standard may be aligned with the SDGs was in progress by the ARM-Fairmined communications team at the time of writing (Interview, April 2018).

3.2 Fair Trade Gold

Fairtrade focuses on the improvement of production and trading conditions for small-scale producers of a range of primarily agricultural commodities. Hence, the theory of change is not specific to the Fairtrade Standard for Gold and Associated Precious Metals for Artisanal and Small-Scale Mining, but should to be interpreted in the wider context of the Fairtrade mission. Outstanding features of Fairtrade's theory of change are its comprehensiveness and participatory approach to its development, as outlined in a 44-page document titled "Journeys to Change".

The theory of change sets out Fairtrade's vision, goals and approach. Fairtrade principles include empowerment of small-scale producers, good governance and commitment to continuous learning. Interventions include standards and certification with a focus on economic protection, empowerment, and the Fairtrade premium as well as support to producers, the building of markets for fair products, networking and advocacy. Fairtrade also aims to influence producers beyond its own supply chains.

On this basis, Fairtrade formulates its theory of change with outputs, outcomes, and impacts. A further particularity of Fairtrade is that it has translated its organization-wide theory of change into more detailed sub-theories of change for small-scale producers and workers, the main beneficiaries of the initiative.

Fairtrade has had a monitoring system since 2007 and extended this approach to a monitoring, evaluation, and learning program (MEL) in 2013. It comprises monitoring of compliance by certified organisations as well as ex-post evaluations by external researchers. Results at the output-level are published annually as aggregated data and are available online. Data is collected as part of the audit process within the Fairtrade system. Commissioned evaluation research of outcomes and impacts is also provided on the webpage. Beyond the effects on certified producer organisations, the monitoring and evaluation measures also target information on households and communities. A list of indicators is provided in an appendix to the document titled "Monitoring, Evaluation, and Learning Programme". A first baseline was established in 2007, with further baselines being subsequently developed during first audits.

Commissioned research to evaluate the effectiveness of the Fairtrade system is an ongoing component of the MEL programme. This is intended to deliver "contextual analysis and explanation that monitoring data cannot yield" and to be essential for organisational learning. Fairtrade's MEL programme complies with the ISEAL Impacts Code. The MEL is overseen by a working group composed of stakeholder from member organisations. It meets twice a year, supports MEL staff globally and has an advisory role to the board. At Fairtrade International, MEL activities are operated by a distinct unit. It is the only initiative of the 14 analysed providing information on its monitoring database and how it is used by auditors and staff.

Fairtrade has outlined its interpretation of its relevance to the SDGs in a document titled "Sustainable Development Goals and Fairtrade: A case for partnership". Seven of the goals are presented with a Fairtrade lens, the approaches and contributions possible by Fairtrade as well as case study insights. It does not address how the Fairtrade MEL system could contribute to measuring progress toward the SDGs, however.

A recent review by the Overseas Development Institute consolidated results of 45 impact assessments in one evaluation report (Darko et al., 2017). There is also a small, but growing literature on the specific impacts of Fair Trade Gold. For example, Hilson et al (2018) state that "The fanfare and euphoria surrounding Fair Trade as an 'alternative' avenue for purchasing would be justified if it was fulfilling its stated objectives." Their critical perspective is that the impact is too narrow and reaches relatively few, relatively more organised, legal miners, while having no impact on the vast majority of people who eke out a livelihood from ASM. Thus, the challenge for Fair Trade Gold is to demonstrate impact on the livelihoods of a significant number of ASM miners.

4. Initiatives for sustainable production and consumption

4.1 Responsible Jewellery Council

The Responsible Jewellery Council (RJC) was established in 2005 by a group of organisations from a cross section of the diamond and gold jewellery business, with a mission to reinforce consumer confidence in the jewellery industry by advancing responsible business practices throughout the diamond, gold and platinum group metals jewellery supply chain (RJC website).

The RJC Code of Practices and Chain of Custody Standard apply to the whole jewellery supply chain, from mine to retail. The Code of Practices states clear objectives, including and to “drive improvement of business practices for the Diamond, Gold and Platinum Group Metals Jewellery supply chain” (COP Standard, 2013). The Chain of Custody Standard was revised in 2017 to ensure alignment with the OECD Due Diligence Guidance and other initiatives for responsible sourcing from conflict-affected areas (OECD Alignment Assessment Report, 2018).

The RJC has a monitoring and evaluation system in place based on the ISEAL Alliance Code of Good Practice for Assessing the Impacts of Social and Environmental Standards Systems (Impact Code). As a member of ISEAL Alliance, RJC is required to comply with ISEAL Codes. The M&E system is based on a Theory of Change, which was developed in 2014 and will be reviewed in 2019 through a public consultation process.

Results of monitoring have been disclosed as aggregated data in annual progress reports since 2012. These reports contain performance monitoring figures about reach, coverage and audit compliance with the standards. Number of members and certified members, number of commercial members and their aggregate annual sales, percentage of members certified with one or more non-conformance against standards by type of non-conformance and global reach, are examples of the performance indicators used.

The RJC is planning to improve its performance monitoring in order to better capture impacts on practices. The aim is to develop and monitor additional specific performance indicators, rather than monitor and report only on reach, coverage and compliance indicators.

As an ISEAL member, the RJC has to commission in-depth impact evaluation case studies at least once a year, in addition to its performance monitoring program. These case studies are important to assess whether RJC is achieving the desired impacts through a robust methodological approach. These in-depth impact evaluations tend to be narrow and answer specific research questions related to RJC impacts. Findings of these in-depth impact evaluations are provided as aggregated data in annual progress reports or as additional reports available on the RJC website.

Quality assurance mechanisms are also in place to ensure that data is collected, analysed and reported accurately and consistently. Cross-checks are also in place to ensure that monitoring data is collected from members and input into the M&E systems precisely. Overall, the M&E system is transparent and easily accessible to the public.

Challenges for the RJC to improve M&E further relate to the difficulty of collecting and analysing data from more than one thousand members throughout the members’ certification journey. This requires investment in good IT platforms and software to capture such a large quantity of data and support respective analysis effectively. In this context, it is also important to invest in training and guidance for the members to understand the M&E program, as well as the data that should be collected and systems that should be used to report data to ensure comparable data is reported by the members.

A further challenge is to design indicators that are relevant to a diverse range of members operating in different parts of the supply chain. For example, it is difficult to find a common, comparable and meaningful indicator for both a small trader in Europe and a large global mining organisation. The RJC could either determine a set of indicators that can monitor members across the supply chain or design specific indicators for members operating in each part of the supply chain.

In relation to interoperability, the RJC continues to collaborate with ISEAL and other initiatives to identify opportunities to develop common indicators applicable to the sector. The RJC is also undertaking a mapping exercise on its standards provision against the SDGs. The aim is for the RJC to be able to demonstrate how members in compliance with RJC standards can contribute to the SDGs and whether the RJC's performance indicators can be linked with the SDGs. The RJC is also expanding its scope to include responsible business practices for the silver and coloured gemstones supply chains.

4.2 Aluminium Stewardship Initiative

The Aluminium Stewardship Initiative (ASI) is a new third party certification scheme, launched in 2017, which aims to ensure that sustainability and human rights principles are increasingly embedded in aluminium production, use and recycling. The ASI's Performance Standard and Chain of Custody Standard cover the whole aluminium supply chain, in order "to link responsible production with responsible sourcing" (ASI website, 2018).

The ASI has a theory of change published on its website. The theory of change identifies short-term outcomes as inclusive membership; increasing uptake of certification by diverse businesses; relevant, practical and consistent assurance, continual improvement among certified entities, enhanced ability to leverage existing certifications and recognition of ASI as a valuable initiative. Medium-term outcomes are identified as: reduced climate change impact; enhanced waste management of upstream processing residues; enhanced biodiversity management; practices that implement business' responsibility to respect human rights; increased material stewardship by all actors in the aluminium value chain; and society making effective use of aluminium. ASI's strategies to achieve these outcomes includes effective governance, a credible program, a growing membership base, and financial resilience.

Ultimately, ASI has three long-term goals, whereby:

1. Stakeholders increasingly invest in and/or reward improved practices and responsible sourcing for aluminium
2. Sustainability and human rights principles are increasingly embedded in aluminium production, use and recycling
3. Aluminium continues to improve its sustainability credentials.

The ASI Standards Committee has developed a plan for impact monitoring and evaluation, including a set of indicators related to the theory of change. Indicators are differentiated in accordance with the ISEAL data pyramid as:

Level 1 (monitoring): monitoring data from all certified entities through existing ASI processes

Level 2 (sampled monitoring): monitoring data from a sample of certified entities and stakeholders

Level 3 (in-depth evaluations): in-depth studies to support evaluation of outcomes

The indicators framework consists of 27 level 1 indicators and 25 level 2 and 3 indicators. The monitoring and evaluation plan identifies how the ASI's program aligns with the SDGs, and notes linkages of individual indicators to specific SDGs.

4.3 Bettercoal Initiative

The Bettercoal Initiative was established in 2012 by a group of major coal buyers to improve sustainability performance in their coal supply chain. The aim is “to promote the continuous improvement in the mining and sourcing of coal for the benefit of all people impacted by the industry, workers and coal mining communities” (Bettercoal website).

The Bettercoal Code sets out ethical, social and environmental principles and provisions for its members and supplier coal mining companies to align with. Supplier companies can by assessed by independent, third-party Assessors qualified by Bettercoal, and members are required to exercise due diligence of their coal supply chain. The Bettercoal Code commits to “publicly report on the performance of Bettercoal at least annually, including reporting on the consolidated performance of all assessed coal mining sites” (V.1.1, 2017). A theory of change for Bettercoal was drafted in 2017 and will be published in 2018, as a simple M&E framework is developed (Interview, February 2018).

Bettercoal has a monitoring system to track the progress of its members, named the Members’ Implementation and Reporting Obligation (MIRO). A set of key performance indicators (KPI) are defined against which the progress is reported. The data is collected each year from member companies using a KPI scorecard. New members are required to provide data within one year. Reporting on progress by companies is on a “comply or explain basis”.

So far, Bettercoal has developed two KPI scorecards both used at different phases of MIRO. The scorecard of phase one in 2014 focussed on aspects of commitment to the Bettercoal Code by public statements and stakeholder engagement; participation at Bettercoal meetings; the code’s integration into due diligence procedures; application of the code in procurement; and for mining companies the production of coal under adherence to the code. The second scorecard introduced in 2016 built on these KPIs and extended them by the provision of evidence for supplier assessment as well as the involvement of staff and coverage of new supply contracts. The second scorecard includes a self-assessment questionnaire to determine whether suppliers adhere to the Bettercoal Code.

Results are available in MIRO conformity review reports for 2015, 2016 and 2017. The reports include information about members not delivering or delivering incomplete data. The MIRO reports of 2016 and 2017 reflect on previous reports and include recommendations for further implementation for the member companies.

The key challenge for the Initiative is to develop indicators to measure the “higher level impact” on the ethical, social and environmental issues addressed by the Standard, such as conflict, community health, biodiversity and water management. Bettercoal has a Country Prioritisation Strategy, which collects country level data and engages stakeholders in priority countries in discussions about sustainable coal mining (Bettercoal website). Countries are prioritised according to whether they are a significant coal source for members, are a major coal exporting country, and/or have a high risk profile. Priority countries for 2018 include Colombia, Russia, South Africa, the USA, Indonesia and Australia.

Bettercoal is currently working with the World Coal Association on alignment with the SDGs. If data collection, monitoring and evaluation of impact were organised on a country-by-country basis, this could align well with the SDG indicators, which consist primarily of national development indicators.

4.4 Initiative for Responsible Mining Assurance

The Initiative for Responsible Mining Assurance (IRMA) was established in 2006 by a coalition of NGOs, companies sourcing mining and metals, affected communities, mining companies and trade unions. The aim is "to improve the social and environmental performance of industrial mining operations" as "a tool for companies, communities and civil society to ensure that mining is free from associations with harmful labour practices, human rights abuses, environmental degradation or other unnecessary negative impacts" (IRMA website).

IRMA's certification system consists of a Standard for Responsible Mining and a third-party, independent assurance system, which is being launched from 2018-2019. Mine sites that are participating in the launch phase may self-assess against the requirements of the Standard or be audited. Besides stating that the IRMA Steering Committee will be evaluating the system during this launch phase, little information has been provided so far on monitoring and evaluation of progress. Rather, the process of multi-stakeholder engagement and decision-making is put forward as a distinguishing feature of IRMA.

IRMA has sought to build a credible standard by emphasising broad representation and participation, for example, with IndustriALL and AngloAmerican as key members of its steering committee. The key challenge for this approach has been the slow pace of implementation compared to industry-led initiatives, such as the Conflict-Free Gold Standard or the RJC Code of Practices and Chain of Custody Standard (Resolve, 2010). However, the dialogue approach has the advantage of operating as a procedural mechanism for participatory monitoring and evaluation of the initiative. For example, during the launch phase of IRMA, the initiative plans to "seek further public review on the metrics of the Standard that need to be improved" by hosting a global dialogue, including working groups to address controversial issues (IRMA website).

4.5 Xertifix

XertifiX was established as a certification scheme in 2005 and addresses work conditions and environmental protection in quarries and natural stone manufacturing plants. The initiative started out with a focus on child labour eradication in Indian plants. With a regional expansion to quarries in China and Vietnam, also the scope of the initiative developed to incorporate other relevant criteria of decent work and environmental protection. XertifiX's certification approach is twofold, with a basic version for businesses meeting minimum requirements and an advanced version for businesses complying with the full standard.

XertifiX is a relatively small certification scheme with an operational focus on importers of natural stones in Germany and three retailers in Austria, Belgium, and Sweden respectively. The initiative became a subscriber to ISEAL in 2017 and as a result is now in the process of a standard revision that includes the establishment of M&E practices. Before joining ISEAL, M&E may not have been of high relevance to XertifiX for three reasons: 1) Stakeholders did not raise specific demands about demonstrating effectiveness; 2) peer initiatives certifying the production of natural stones neither engaged in M&E; and 3) the size of the initiative did not allow to contribute resources to activities outside of the ongoing operational tasks. With the new revision and practice development, this is ought to change.

The creation of a theory of change is the first step for XertifiX to establish M&E practices that meet organisational requirements and international best practices. The first draft of the theory of change shows that XertifiX is putting its operational outcomes into a wider global sustainability context that includes its contributions to the SDGs. Through an equal incorporation of the environmental aspects of managerial compliance, a more holistic approach will be taken in the

future. This revised perspective includes a business case orientation, as participating companies experience an added value from improved responsibility and sustainability performance of their businesses.

XertifiX regards the establishment of M&E practices as a learning process that will require an ongoing adaptation to the organizational, industrial, and regional realities. A set of indicators for medium to long-term achievements of the initiatives will be set up to assess its effectiveness. A variety of factors are considered to lie outside of the sphere of influence of certification. At the same time, unexpected outcomes of certification are acknowledged to potentially occur and to influence anticipated results. To initiate the new M&E practices, baseline assessments are planned for the focal countries, through which the applicability of the indicators and the certification mechanism will be reviewed. XertifiX stresses that M&E expectations must primarily align with the initiative's operational context, before it can benefit from alignments with other initiatives. On a systemic level, XertifiX benefits from ISEAL providing effective support and guidance with its quality criteria for the creation of good practices and the exchange with other initiatives. Whereas assessments of effectiveness were previously conducted on an *ad hoc* basis, with data collected during audits, XertifiX foresees in the future a more systematic approach that shall also include regular evaluation.

5. Initiatives for conflict-free minerals:

5.1 Kimberley Process

The Kimberley Process Certification Scheme (KP) is one of the longest running intiatives to address armed conflict fuelled by illicit trade in natural resources. It arose from African governments seeking to end civil wars in Angola, Sierra Leone and Liberia in the 1990s, by addressing trade in rough diamonds by armed groups. The Kimberley Process aims to ensure that participants trade only in diamonds that can be certified as originating from legitimate sources (Fishman, 2004). The scheme combines voluntary industry certification with government import and export regulation (Haufler, 2009).

To date, the KP has been adopted by 54 diamond trading countries around the world, including the European Union as one member, hence representing 81 countries in total. The KP estimates that it is currently protecting over 99% of the world-wide trade in diamonds (Kimberley Process, 2014b).

A Working Group on Monitoring ensures the implementation of the Kimberley Process Certification Scheme by participants (Kimberley Process, 2014b). The Working Group is made up of a Chair, Vice Chair and Members. The current Chair of the group is South Africa, elected in 2017, and the Vice Chair is Botswana (Kimberley Process, 2014b). A further 15 governments are represented on the Working Group, as well as the African Diamond Producers Association (ADPA), World Diamond Council (WDC), Civil Society Coalition (CSC) and the Diamond Development Initiative (DDI). It may be considered to be a multi-stakeholder group, although membership is heavily skewed towards governments.

The Working Group conducts and manages a peer review process, organises review visits to participating countries and conducts an assessment of the participants' annual reports. All member states are required to submit annual reports to the Working Group and these are reviewed to ensure compliance with the KP rules (Global Witness, 2005; Haufler, 2009). The review visits are the main tool for validating the country reports, but are by invitation of participant countries. These visits occur approximately once every three years (Dussenne, 2017). The Working Group may conduct mandatory review visits, as was the case in Venezuela before its re-

admittance to the Kimberley Process. At the end of each review mission, the team submits a written report and a list of recommendations to the government of the country and other members of the Kimberley Process (Dussenne, 2017). The Working Group meets face-to-face at plenary and Inter-sessional meetings of the Kimberley Process.

Apart from the Working Group, which functions more an assurance process for country compliance with the KP rules than as a forum for impact evaluation, the KP lacks a robust, transparent system for M&E. For example, the absence of a comprehensive theory of change makes it difficult to establish a causal link between a reduction in illicit trade in rough diamonds and the KP (Acosta, 2014). Information on the KP website estimates that over 99% of the diamonds now traded are legal. However, critics have pointed out that without accurate baseline figures for the volume of trade in illicit rough diamonds before the advent of the KP, claims that the KP has made a difference lack evidence (Haufler, 2009).

The reliance of the KP on national governments for implementation means that the effectiveness of the scheme is dependent on the effective governance of individual countries (Fishman, 2004). Third-party assurance of the KP has been recommended as a means to increase effectiveness of the scheme (Gooch, 2008).

Researchers and NGOs have criticized aspects of the current monitoring mechanism. The Partnership Africa Canada (PAC), an observer of the Kimberley Process, criticized the review process for being inconsistent, under resourced and too short for adequate monitoring to be undertaken within the allocated time period. It also noted that countries had been non-compliant with the requirements of the scheme, especially regarding submission of data, mostly because there were no consequences for non-compliance. Others point out that the credibility of the scheme is compromised by the fact that no country has yet been expelled, despite implementation lapses (Global Witness, 2016; Mejía Acosta, 2013).

Unlike other government-led initiatives like the EITI and the ICGLR, the KP does not have a permanent secretariat. Member states chair the KP on a rotating basis. The costs of the Working Group on Monitoring reviews are borne by the members of the review team and the inviting member state. This lack of resources for assurance of the KP suggests that there would also be limited resources available for more systematic M&E of the scheme's impact.

5.2 OECD Due Diligence Guidance

The OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas aims to help companies to respect human rights and avoid contributing to conflict through their mineral purchasing decisions and practices. The Guidance, in its third edition (2016), includes the text of the guidance, a supplement on tin, tantalum and tungsten, a supplement on gold, and a recommendation of the OECD Council.

The monitoring and evaluation system for the OECD Guidance is multi-faceted, consisting of three elements: (1) review of the implementation of the Guidance by member and non-member countries of the OECD; (2) co-ordinated review of the impacts of the many initiatives aligned with the OECD Guidance aimed at addressing conflict minerals; and (3) assessing how well aligned with the OECD Guidance these various initiatives are.

The recommendation of the Council includes that "Members and non-Member adherents to the Declaration on International Investment and Multinational Enterprises actively promote the observance of the Guidance by companies operating in or from their territories…" (OECD-DD Guidance, 2016: 9). The OECD Investment Committee and the Development Assistance

Committee are instructed to monitor the implementation of the Recommendation and report to the Council. All of the 35 OECD Members and eight non-Members, namely Argentina, Brazil, Colombia, Costa Rica, Lithuania, Morocco, Peru and Romania, have adhered to the Council Recommendation (OECD website).

The Responsible Business Conduct Unit of the OECD Directorate for Financial and Enterprise Affairs plays a co-ordinating and review role for a number of initiatives related to conflict minerals, through bi-annual and more recently annual meetings held in Paris. Launched in 2011, the Forum on Responsible Mineral Supply Chains is jointly organised by the OECD, the ICGLR and the UN Group of Experts on the DRC. The Forum brings over 700 stakeholders together to participate in a wide range of thematic and commodity specific sessions, and includes a session on monitoring OECD Guidance uptake and promotion by adherent governments.

The forum may be regarded as the key multi-stakeholder mechanism for evaluation of the impact of the broad range of initiatives relating to conflict minerals, and not only of the OECD Guidance itself. This approach matches evidence from the field that the impacts of the various initiatives overlap, particularly in conflict-affected areas on the Democratic Republic of Congo (DRC) where the efforts of most initiatives have been concentrated (Matthysen and Montejano 2013). A study of the impact of conflict minerals initiatives in the DRC found that, “none of the initiatives’ impacts can be assessed in isolation, but rather necessitate a more holistic approach to analysis” (Mattysen and Montejano, 2013: 6).

Challenges identified in these studies and the wider academic literature on conflict minerals relate to unintended consequences for the regional and local economies under scrutiny. The danger of a *de facto* embargo on the ‘3T’s tin, tantalum and tungsten, and ASM gold from conflict-affected parts of the DRC, or even the entire Great Lakes region, is well documented.

In response to this problem, the OECD Guidance now applies to tin, tantalum, tungsten, gold “and all other mineral resources” (OECD Guidance, 2016). The scope is increasingly global, for example, in April 2018, the Forum included sessions on country-level implementation and progress in India, Europe and West Africa.

In April 2018, the OECD launched the first of a series of report to assess the alignment of minerals and metals supply chain initiatives with the OECD-DD. The first report is on five initiatives, including the RJC and RMI.

On the SDGs, the OECD has highlighted the role of responsible business conduct standards as a potentially “transformative” way for companies to interact with the SDGs and maximise the private sector’s contribution to sustainable development (Session note, OECD Forum for Responsible Business Conduct, June 2017).

5.3 ICGLR Regional Certification Mechanism

The International Conference on the Great Lakes Region (ICGLR) was established in Nairobi in 2006, bringing African Heads of State and Government together to form a new regional organisation. Its aim is ‘to address the root causes of intractable conflicts and constraints to development in a regional and innovative approach’ (ICGLR website, 2017).

The recognition of resource conflict in the Great Lakes Region and the importance of regional collaboration for better resource governance was established in the ICCGLR Protocol of 2006. It was further addressed in the Lusaka Declaration of the Special Summit to Fight Illegal Exploitation of Natural Resources in the Great Lakes Region (2010), which launched the

Regional Initiative on Natural Resources (RINR). The Lusaka Declaration establishes six tools of the RINR:

- A regional certification mechanism for the 3TG minerals
- Legal harmonization of member states' resource governance regimes
- A regional database on mineral flows
- Formalisation of artisanal and small-scale mining (ASM)
- An EITI peer learning mechanism
- A whistle-blowing mechanism

The six tools of the RINR are in various stages of implementation, with the Regional Certification Mechanism (RCM) the most advanced. RCM implementation takes place under the authority of individual member states, for example, by Rwanda and the DRC since 2013.

Responsibility for monitoring and evaluation of the RCM lies with the ICGLR Audit Committee. The Audit Committee is an independent regional body with representatives from within the region and international civil society, industry and government. The Audit Committee monitors and reviews the RCM standards and procedures, as well as overseeing the implementation of the ICGLR third party audit system. The Audit Committee reports to the Regional Committee of the RINR, which is made up of representatives from all member states.

The ICGLR Secretariat is meant to publish an annual report on implementation and performance of the scheme, which in 2017 comprised the report of the 15th Meeting of the OCGLR Regional Committee on the Fight against Illegal Exploitation of Natural Resources in Arusha, 25-27 July 2017. The purpose of the Regional Committee meetings is to evaluate the progress made on implementation of the tools of the RINR.

The advantages of the RCM are its legitimacy and acceptance by member states of the Great Lakes Region, its comprehensive approach and recognition of the regional dimension of conflict minerals (Matthysen and Montejano, 2013: p.39). However, the ICGLR Secretariat's role in publishing reports and communication on progress has been patchy. This is partly because of renewed conflict in Burundi, where the Secretariat has been located, making it difficult for the organisaiton to function effectively at the regional level. Technical support from partners, notably the German Federal Ministry for Economic Cooperation and Development (BMZ) GIZ and the OECD, has assisted in capacity building and implementation of the RINR.

The UN Economic Commission has published a Special Report on the ICGLR's RINR, which assesses progress in implementation of the six tools of the initiative at country and regional levels. The report found that "there is need to improve the communication on the RINR and also the monitoring of progress", while self-financing and ownership of the initiative by the ICGLR were identified as key challenges (UNECA, 2013: 24).

5.4 Conflict-Free Gold Standard

The Conflict-Free Gold Standard (CFGS) is a voluntary scheme launched in 2012 by the World Gold Council, an industry association of leading gold mining companies. It arose in the context of increasing public and consumer awareness of the issue of 'conflict minerals' and from 2010 onwards, of the U.S. Dodd-Frank Act, Section 1502, and the OECD Due Diligence Guidance (Bickham, 2017). The stated purpose of the CFGS is:

> …to establish a common approach by which gold producers can assess and provide assurance that their gold has been extracted in a manner that does not cause, support or benefit unlawful armed conflict or contribute to serious human rights abuses or breaches of international humanitarian law (Conflict-Free Gold Standard, 2012).

The most authoritative evaluation of the CFGS to date is a case study by a key advisor to the standard's development (Bickham, 2017). The case study evaluates both the process of standard-setting and the impact of the CFGS in its first five years of use by mining companies. Apart from providing a link to the case study, the World Gold Council does not mention a formal system for monitoring and evaluation of the Conflict-Free Gold Standard on its website.

The Council does not operate as a certification body for the Standard, as the association recognised a potential conflict of interests between its role of promoting the industry on behalf of its members and certifying their conformance with the Standard (Bickham, 2017). Rather, implementing companies have been provided with guidance for auditing against the Standard and selection criteria for assurance providers.

Although this arms-length approach by the World Gold Council may enhance the credibility of the assurance process, it could present a challenge for monitoring and evaluation of the impact of the Standard. Apart from the statement of conformance with the Standard, which all implementing companies are required to report, data collected and assessed in the audit process of each company is presumably unavailable for a more general assessment of the initiative's overall impact.

The case study (2017) makes a qualified assessment, based on company interviews, that the Standard, "seems likely to have improved the performance of several mines located in potential conflict zones… There is anecdotal evidence that some companies found it useful in tightening relevant aspects of their corporate practices" (Bickham, 2017: 85). If implementing companies were willing to share de-identified data from their audits against the Standard, a centralised database could provide the basis for a more quantitative impact assessment of the Standard over time.

5.5 Responsible Minerals Initiative

The Conflict-Free Sourcing Initiative of the electronics industry was rebranded in 2017 as the Responsible Minerals Initiative (RMI). The initiative aims to provide member companies with tools and resources to make sourcing decisions that improve regulatory compliance and support responsible sourcing from conflict-affected and high-risk areas (RMI website). The flagship Responsible Minerals Assurance Process has developed three commodity-specific standards, which will be implemented from June 2018. The standard for tin and tantalum was released in June 2017 and the standards for tungsten and for gold were released in December 2017. A list of smelters and refiners that meet the requirements of the audit standards is made available to members.

An annual members meeting and conference of the RMI provides a forum for review of the initiative. The RMI also tracks the number of smelters and refiners for tantalum, tin, tungsten and gold that are currently eligible, conformant and 'active' within the Responsible Minerals Assurance Process. This information is published as a table of indicators on the RMI website, which will be populated with further information as the Assurance Process get underway. Beyond this, the initiative does not yet have a system for monitoring and evaluation of impact. However, scholarly research on the impact of responsible sourcing on conflict minerals suggests that tracking the pace of voluntary uptake of the initiative by smelters and refineries is the most

feasible way to demonstrate impact (Young, 2015).

Analysis of the impact of the RMI's predecessor, the Conflict-Free Smelter Program, points out the difficulties of linking the downstream sourcing of minerals with tangible social outcomes in conflict-affected areas. However, the way in which electronics and other manufacturing companies have been able to "drive change in another industry" further up the supply chains for 3Ts and gold is significant. Uptake of the program by smelters and refineries has been widespread and rapid in comparison with the implementation of initiatives in other sectors like forestry and palm oil (Young, 2015).

The OECD Alignment Assessment of conflict minerals initiatives highlights the importance of due diligence to this program aimed at the smelting and refining stage of the minerals supply chains. The report notes a "key area for improvement": "to develop a robust assessment mechanism to enable the RMI to evaluate and monitor the effectiveness of due diligence measures undertaken by third party upstream programmes". The report does, however, credit the RMI with "high levels of transparency with extensive information made available to members and non-RMI members" (OECD, 2018: 17).

A case study of the RMI was presented at a meeting of the Sustainable Development Solutions Network held in Canada in May 2018 by Steven Young, which highlights the role of responsible sourcing initiatives in driving change across whole supply chains.

6. Initiatives for transparency and reporting

6.1 Extractive Industries Transparency Initiative

The Extractive Industries Transparency Initiative (EITI) was established in 2002 to promote revenue transparency between the extractive industries (mining and petroleum) and the governments of resource-rich countries. Transparency is achieved by reconciliation of taxes, royalties and other payments by companies with reporting of resource revenues by host governments. The process is overseen by a third party auditor and a national multi-stakeholder group made up of equal representatives of government, industry and civil society.

From 2013 the scope of the EITI Standard expanded to include reporting criteria to increase transparency of other aspects of extractives governance, such as open contracting, reporting production and export data and beneficial ownership of companies (from 2020). On the expenditure side, open budgeting is encouraged to report on how resource revenues contribute to national development plans and public and private sector investment in infrastructure and social services like health and education. The EITI's theory of change now links transparent governance with greater availability of resources from the extractive industries to contribute towards sustainable development, which clearly aligns with the Sustainable Development Agenda 2030.

There are now more than 50 countries implementing the EITI, including several OECD countries, such as Norway, the UK, Germany and Australia. The EITI has become one of the most widely known initiatives for the minerals and energy sectors. There is a sizeable literature assessing the effectiveness and impact of the EITI from a wide range of perspectives and approaches. These range from in-depth country case studies (for example, Shaxson, 2007) to comparative quantitative studies (discussed below) and qualitative, reflective assessments, for example, by EITI Secretariat insiders Eddie Rich and Jonas Moberg (2015). One of the most comprehensive recent studies of monitoring and evaluation of the EITI was commissioned and published by GIZ in 2016.

Previous studies have found that the EITI has succeeded in making the extractives sector less opaque (Okpanachi & Andrews, 2012), and improving the availability and reliability of data on the sector (Sovacool & Andrews, 2015). However, they have not found a strong correlation between EITI implementation and changes in incidents of corruption (Corrigan, 2014; Ölcer, 2009) or corruption perception levels (Kasekende, Abuka, & Sarr, 2016). In terms of resource governance indicators, one study found that the EITI compliant countries did not necessarily perform better than they did before they implemented the initiative (Sovacool, Walter, Van de Graaf, & Andrews, 2016). Academics have pointed to the theoretical work needed to understand causal pathways between transparency and accountability on the revenue side of resource governance, and between transparency and sustainable development outcomes on the public expenditure side, which would help to assess the EITI's role in the equation (Gillies & Heuty, 2011; Visser & Cusri, 2012).

Challenges for measuring EITI impact have been revealed in a number of reviews commissioned by the EITI. A review conducted by the Rainbow Insight (Raibow Insight, 2009) recommended that the EITI develop key performance indicators to enable stakeholders to judge results against objectives. A review conducted by the Scanteam (Scanteam Analysts and Advisers, 2011) found that the EITI struggles to claim direct attribution to key results in governance especially because it is often implemented as part of countries' wider governance reforms. The review recommended development of a more comprehensive results framework to aid tracking of performance at the national and international levels. In addition, it recommended a more coherent theory of change to justify the indicators used.

The EITI Board has since developed process and outcome indicators to aid the EITI in demonstrating results, planning, learning and improving delivery (available on the EITI website). The EITI has processes of monitoring and evaluating its results at the global and country levels. At the country level, the EITI process has a built in monitoring and evaluation system to measure progress (Extractives Industries Transparency Initiative (EITI), 2017). This includes a requirement for each country to have a fully costed work plan and, at the end of each year, to produce and submit an Annual Progress Report that shows progress towards set goals. These documents should be developed by and have the approval of the government, companies and civil society that form the multi-stakeholder group in each country.

The EITI operates a validation program for the progress of its member states in the implementation of the EITI standard as well as the assessment of impacts. The EITI board oversees the member validations and makes decisions on the progress results. Validations are due every three years. The validation program replaced the assessment of member countries in 2016. validation is in the first place done by staff of the EITI secretariat. Data is gathered, documents are reviewed, and one staff member visits the country to consult stakeholders resulting in an initial report. An independent validator's task is then to assess these internal findings by EITI and to produce a validation report that includes compliance statements for individual standard provisions. The independent validator's assessment is done through document reviews, a risk-based approach to findings, and the cross-checking of findings with stakeholders. The validation presents the findings to a validation committee. The final decision of compliance is made by the EITI board. Before the final decision is reached by the board, internal documents and the initial validation report remain confidential.

6.2 GRI Mining and Metals Sector Supplement

The Global Reporting Initiative (GRI) was founded in 1997 as an environmental reporting framework. A year later, a multi-stakeholder Steering Committee was appointed and the scope was widened to include social, economic and governance issues. The Mining and Metals Sector Supplement (MMSS) was developed by a multi-stakeholder working group with the International Council on Mining and Metals (ICMM) as co-convenor (GRI website). The Supplement was launched in 2010.

The GRI does not have information on its M&E process in the public domain, but encourages users of its reporting guidelines to highlight their contributions to the SDGs in company reports. Furthermore, among the initiatives analysed, GRI is the only initiative that tracks its own contribution to a target defined by the SDGs. On a separate section of its website, GRI tracks its contribution to SDG 12.6, which aims for large corporations to adopt sustainable practices and to provide sustainability information in their public reports – a target that is strongly related to GRI's mission. Therefore, GRI tracks the coverage of sustainability reporting on a national basis by providing absolute numbers of registered sustainability reports. However, the numerical tracking of reporting is not reflected in an equivalent goal formulation by GRI.

The Global Reporting Initiative, Global Compact and World Business Council have created an 'SDG Compass' to guide companies to align business reporting metrics with the SDG indicators. The following 10 indicators from the GRI Mining and Metals Supplement are profiled in the SDG Compass:

- Number of sites where ASM is on or adjacent to the site;
- Number of significant disputes relating to land use of local communities and indigenous peoples;
- Number of operations on or adjacent to indigenous peoples;
- Number of sites where resettlement took place;
- Existence of grievance mechanisms;
- Amount of land disturbed or rehabilitated;
- Total amounts of overburden, rock, tailings and sludges produced;
- Number of sites requiring biodiversity management plans;
- Number of strikes and lockouts;
- Programs and progress relating to materials stewardship.

A reduction in some of these numbers would indicate improved operations over time, but does not fully capture a positive contribution, such as to poverty reduction from employment and economic linkages, improved community health, peace and stronger local institutions, or net positive impact on biodiversity. If the search of the Compass is by SDG category, for example, for SDG 16.6 'accountable, effective institutions', the GRI indicators for good *corporate* governance come up. Participation of the company in the Extractive Industries Transparency Initiative (EITI) in the host country would be a better indicator of a broader contribution to good governance beyond the company itself.

The GRI and other sustainability initiatives do have indicators of positive social and environmental indicators, but they are not specific to mining. It is also more difficult to attribute positive impacts on sustainable development to the actions of a mining company, than it is to show how its operations avoided negative impacts. Drawing a distinction between positive and negative impacts of mining is important to align the existing sustainability performance indicators for the mining sector with the SDG indicators.

7. Summary of comparative analysis

Comparison of the minerals sustainability initiatives in this study shows that they vary widely in their approaches to monitoring and evaluation. The established ISEAL members, namely the RJC and Fair Trade, have the most detailed, quantitative systems of data collection, monitoring and evaluation in place. ISEAL subscribers, such as ARM-Fairmined, ASI and XertifiX, are in the process of developing M&E systems in line with the ISEAL Code of Practice. New commodity-specific supply chain initiatives, the ASI and Bettercoal, have prioritised theories of change and M&E as integral to their design and communications. Initiatives led by inter-governmental and multi- stakeholder organisations, such as the Kimberley Process, the EITI, the ICGLR's Regional Certification Mechanism, and the OECD Due Diligence Guidance, emphasise the institutional and procedural aspects of review and oversight of impacts. Qualitative case study approaches are used in a number of initiatives, such as the Conflict-Free Gold Standard and the EITI. The emerging initiatives IRMA and RMI are focused on implementation in 2018 and have not yet provided information on M&E. The GRI tracks uptake of sustainability reporting as its primary contribution to responsible business conduct, claiming a niche role in supporting one of the SDG targets.

All of the initiatives are better at tracking activities and outcomes (effectiveness) than they are at demonstrating impact on the issues they ultimately seek to address. This is unsurprising, as they face the common challenge of how to attribute change in complex social and environmental conditions to their specific interventions. Several studies of impact assessment in this field point out that the initiatives can only be expected to demonstrate a *contribution* to change, rather than direct *attribution*, since there are multiple variables to resource conflict, corruption, environmental and social harm associated with weak governance of the extractive industries (Acosta, 2013; Gaventa & McGee, 2013; Rich & Moberg, 2015). However, the comparative analysis and case studies show that there is room for improving the evidence base on which the initiatives' claims of a contribution may be substantiated.

In terms of the analytical framework for this study, the following areas should be strengthened:

Defining the intended change:

Overall, less than a third of the initiatives have published a theory of change, and those that communicate detailed information about M&E are in the minority. Good practice examples are the ASI, which provides a clear rationale for its theory of change, and Fairtrade, which describes a participatory approach taken to the formulation of its theories of change.

Although the objectives of each initiative may be found easily on their websites, it is not always clear which objective the impact of the initiative is measured against. For example, a responsible sourcing initiative may list several different objectives as equally important, such as (1) due diligence by its members, (2) improved ethical conduct of suppliers and (3) benefits for communities and the environment at the sites of production. In this example, the first objective relates to activities, the second to outcomes and the third to impact. A theory of change is therefore important to clarify these distinctions and chart causal pathways between activities, outcomes and impact. This is particularly important to allay criticism from NGOs or academic studies, which may expect more from an initiative than is realistically within the control of its implementing members. The RJC is a good example of an initiative that is careful in setting out the scope of the COP Standard: to provide RJC Members with a common standard to "manage issues within a Member's control" (COP Standard, 2013). The World Gold Council also limited the

Conflict-Free Gold Standard to large-scale industrial mining, since the challenges facing ASM were felt to be beyond the scope and influence of its membership (Bickham, 2017).

Designing indicators

Most of the initiatives profiled have indicators to measure uptake and levels of compliance (that is process and outcomes indicators), but struggle to design good indicators of impact. The practice of SMART (Specific, Measurable, Assignable, Realistic and Time-bound) indicator formulation needs to be strengthened. Linkages to the SDG indicators would further provide the initiatives with greater relevance and justification for their interventions. Apart from the GRI, the initiatives have not yet published details of how their indicators may be aligned with the SDG indicators. This is an important area for further research, which could be assisted by the SDSN Extractive Industries Working Group.

Collecting data

The use of online self-assessment tools for implementing companies or countries could provide a useful source of baseline data for impact assessment of initiatives. While their main purpose is to prepare organisations for certification, the self-assessment tools provide for consistent, early data collection. The assurance and validation systems in general provide the main source of data for M&E, however, this information needs to be contextualised in order to assess the overall impact. Independent evaluations and periodically commissioned studies of an initiative are important to provide this 'big picture' perspective.

Learning and improving

The importance of holding regular high-level meetings for review and improvement of initiatives is clear from the study. The Forum on Responsible Mineral Supply Chains hosted by the OECD and the ICGLR is a good example of an inclusive, participatory process of review, which coordinates the efforts of a number of initiatives aligned with the OECD Due Diligence Guidance.

Reporting

Most of the initiatives report regularly on their progress, for example, Bettercoal provides annual progress and conformity review reports; EITI reflects on impacts in validation reports; Fairtrade publishes annual reports and has a policy "to publish full impact evaluations wherever possible"; and the RJC uses annual reports to communicate implementation processes and makes selective use of external reviews. The reports of government-led initiatives, the Kimberley Process and the ICGLR, are not easily accessible to the general public. This limits public participation and oversight of the effectiveness of these initiatives. The analysis also found a need for some initiatives to separate compliance mechanisms from M&E practices more clearly.

Financial and human resources for M&E

Design and implementation of rigorous M&E depends on available human and financial resources, which differ between initiatives due to size and demand. The development and implementation of generic M&E systems, including common core indicators and data collection systems may assist initiatives with limited resources for M&E.

8. Case studies: exploring impact on responsible production of minerals and metals

The purpose of the case studies is to:

- Understand the motivations of producer companies for participating in third party certification of their sustainability performance.
- Contextualise the implementation process and document any lessons learned by the companies that have participated in the standard setting and assurance processes.
- Explore the type of impacts the initiatives are likely to have at the site-level, corporate level, country level and on the industry more broadly, and how these could be measured.

Case study one is based on semi-structured interviews with senior managers of Rio Tinto who were involved in the ASI standard setting process, pre-certification preparations and auditing in Australia and Canada. Further information was provided by the ASI and consultants to the ASI, the summary audit reports and documentation on the ASI website. Similarly, case study two consisted of semi-structured interviews with senior managers of PT Adaro in Indonesia, and interviews and supplementary material provided by the Bettercoal Secretariat.

8.1 Case study one: Rio Tinto Aluminium certification in Australia and Canada

Background:

In early 2018, the Aluminium Stewardship Initiative (ASI) announced the first certification of a member company. Rio Tinto is the first company in the world to receive certification under the ASI Performance Standard (version 2, 2017). The company was also the first to achieve certification under the ASI Chain of Custody Standard in mid 2018.

The case study focuses on the relevance of the criteria of the ASI Performance Standard to Rio Tinto's operations in Australia and Canada. It examines Rio Tinto's participation in the ASI to understand the type of impacts the Performance Standard may have in different contexts.

Rio Tinto Aluminium (RTA) selected two locations to be their first units of certification. These were the Vaudreuil Alumina Refinery, five aluminium smelters and related facilities in Saguenay Québec, Canada, and the Gove Bauxite Mine in Northern Territory, Australia. These regional operating areas were audited consecutively (January and February 2018) and each certified within a three-month period (by March and April 2018 respectively). The same auditing firm, Bureau de Normalisation du Quebec (BNQ) conducted both audits. The Quebec facilities have also achieved certification against the ASI Chain of Custody Standard. This is a separate process from the Performance Standard certification and not within the scope of the case study. It is the company's intention to apply the ASI Standards across the business, including other RTA bauxite mining operations (such as at Weipa in Queensland, Australia) and alumina refineries (such as in British Columbia, Canada and at Gladstone in Queensland, Australia) (Interview, 6/7/2018).

Snapshot of the aluminium industry:

Bauxite ore is the main source of aluminium. The use of aluminium and its application includes packaging, construction, engineering, electronics and transportation. The production process consists of three main stages: (1) mining of bauxite ore, (2) refining bauxite ore into alumina, and

[3] Other sources of aluminium are clay, alunite, anorthosite, coal wastes like coal ash, and oil shales.

(3) smelting alumina into aluminium.[4] The three stages occur at different locations and illustrate the global nature of the aluminium value chain (Track Record, 2010). For instance, the energy intensity of the smelting process[5] requires smelters to be located in energy-rich countries and/or in regions with cost-efficient energy supply (Bain, 2013), which is often not the case in countries of bauxite ore extraction. Through this three-stage process, four to five tonnes of bauxite ore are transformed into two tonnes of alumina and further into one tonne of aluminium (ibid.).

The main producer of bauxite ore is Australia with an estimated 82m tonnes in 2016, followed by China with 65m tonnes and Brazil with 34,5m tonnes (U.S. Geological Survey, 2017b). The same three countries lead in refining of the ore, according to the same source. In terms of world aluminium smelter production and capacity, China is leading with an estimated output of 31m tonnes and a capacity of 40,1m tonnes, followed by Russia with an estimated production of 3,58m tonnes and a capacity of 4,18m tonnes as well as India with 2,75m tonnes and 3,85m tonnes respectively (U.S. Geological Survey, 2017a). Three of the primary ore producing countries do not appear in the statistics for the further processing along the value chain. These are Guinea (Conakry), considered to have the world's largest reserves of bauxite ore, as well as Guyana and Malaysia. One of the major drivers of the industry in the past two decades was the development of China, which rose from 5% total world aluminium consumption in 1991 to 41,6% in 2011[6] (Bain, 2013). Also according to the European Aluminium Association, China accounted in 2015 for 54% of primary aluminium production worldwide, but does not appear high in statistics of the metal's export, signifying that its production corresponds with domestic industrial demand (see also Bain, 2013).

The main importers of primary aluminium are found in the major industrialized countries across North America, Europe and Asia (see Track Record, 2010). Despite volatile prices, curtailment in smelter production across North America and Europe, and an overcapacity in Chinese production, the outlook for the primary aluminium market remains promising. Growth in automobile production and an expected increase of its aluminium content, urbanization and the construction of energy-neutral buildings, the substitution of copper in electrics, manufacturing and industrial growth in emerging countries as well as environmental-friendly solutions for packaging are considered to contribute to an ongoing demand growth for primary aluminium production (Fog, 2016). Demand for secondary aluminium is expected to grow, too, as capacities for recycling are expected to increase.[7] The high recyclability of aluminium will further spur this demand. But, as noted in the report of the Responsible Aluminium Scoping Phase, secondary aluminium:

> *…will never satisfy global market demand owing to factors such as population increase, rapid growth in emerging economies and because certain products, or product components require primary metal. In addition, the availability of recycled aluminium is limited by the lifetime of aluminium in products (buildings may stand for decades) as well as scrap collection rates and the efficiency of extraction, dismantling, shredding, separation and re-melting processes.* (Track Record, 2010, p. 14)

[4] The report by Track Record (2010) describes the industry as relatively centralized, with 20-30 operational mines, 80 refiners which are operated by 20 companies, and about 200 smelters, operated by about 100 companies, but with 20 companies responsible for 80% of annual aluminium production.
[5] About 14,000 kwh for the smelting of one tonne of aluminium (Bain, 2013).
[6] Data of the World Bureau of Metal Statistics.
[7] Bain (2013) noted based on data from 2011 that secondary production constitutes about 20% of total aluminium production.

In the same report, which was a pre-assessment for the creation of the Aluminium Stewardship Initiative, sustainability issues were identified across the upstream and downstream industries (see figure 1).

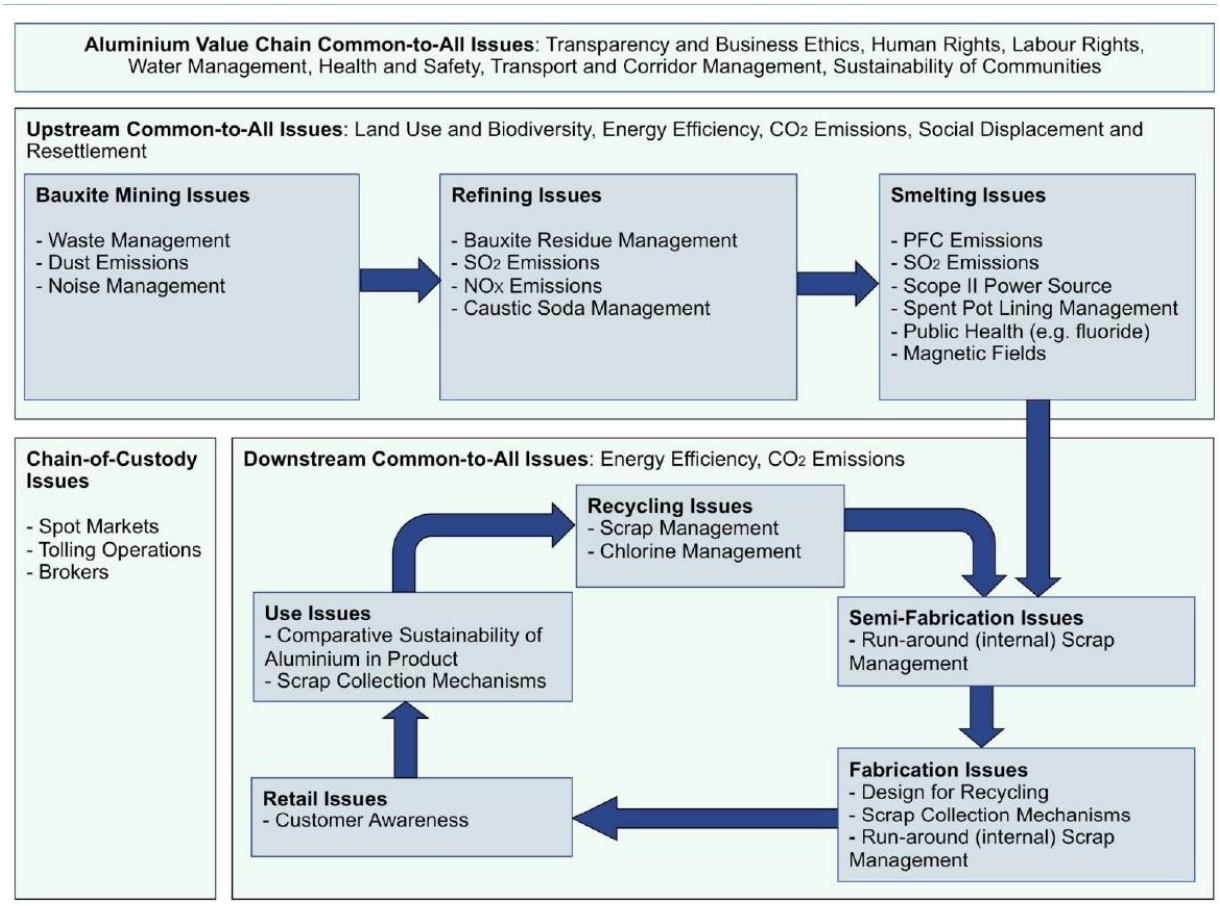


Figure 1: Main issues identified during the Responsible Aluminium Scoping Phase (source: Track Record, 2010, p. 33)

Some of the issues highlighted are generic to much of the mining industry and metal supply chains, such as transparency and business ethics, human rights, water management and occupational safety and health, among others. There are also issues specific to the aluminium value chain, such as bauxite residue and spent pot lining management.

Greenhouse gas emission reduction, energy intensity of the production process as well as recyclability of the material and products are of concern to the downstream industry. The first two mentioned issues reflect an ongoing engagement in curbing climate change as well as increasing energy costs, while the latter has become a major public concern for companies using aluminium excessively in consumer goods packaging. Recent cases of environmental pollution by the bauxite mining industry in Kuantan, Malaysia or mining project planning without consideration of Indigenous Peoples' rights in the Niyamgiri Hills in the state of Orissa, India show the need for more responsible practices in the industry.

Gove Bauxite Mine, Northern Territory, Australia:

RTA's Gove operation is located on the Gove Penisula in North East Arnhem land in the Northern Territory of Australia. Operations began in 1970 by Nabalco and subsequently Alcan. Rio Tinto acquired Alcan in 2007. In2017, the mine produced over 11 million tonnes of bauxite (ASI press release 10/4/2018). Indigenous peoples' rights, employment and land rehabilitation are the most relevant social and environmental criteria of the ASI Performance Standard for this bauxite mine site. The social impacts and waste management associated with the alumina refinery at Gove were not within the scope of the ASI certification, due to curtailment of the refinery in 2014 and planned closure[8].

Rio Tinto Aluminium Gove mining lease, Northern Territory, Australia (source: Rio Tinto)

The mine is located on Aboriginal land, and since exploration began in the 1950s, it has featured in a well-known grievance in Australian Aboriginal land rights. An historic bark petition presented to the Australian Parliament in 1963 objected to the lack of consultation over "the land excised from the Aboriginal Reserve in Arnhem Land" and called for "no arrangements to be entered into with any company which will destroy the livelihood and independence of the Yirrkala people" (Transcript of the Yirrkala Bark Petitions, 1963).

When Rio Tinto acquired the rights in 2007, the leases were up for renewal with the Northern Territory Government, and the company entered into a negotiation process with the Gumatj and Rirratjingu clans of the Yolngu people and with the Northern Land Council (Interview, 4/7/2018). The RTA Gove Traditional Owners Agreement was signed in June 2011. The Agreement documents how the company and the Yolngu people have acknowledged and reconciled the past, and are working together for a shared future (Rio Tinto, 2017, *Why Agreements Matter*, p. 92).

[8] Steps taken to mitigate social impacts of curtailing the refinery, most notably the rapid population decline in the town of Nhulunboy, were outlined in one of the interviews for the case study. These include partnership with the Northern Territory Government to support enterprise development, making vacated company housing available for rental business and stopping all fly-in-fly-out working arrangements for the bauxite operations to help stabilise the local community (Interview 4/7/2018).

Among the commitments made in the Agreement was for Rio Tinto to assist Yolngu-owned companies to acquire mining leases, and also to provide training, employment and enterprise support schemes. Indigenous employment at Gove operations is low in comparison to other RTA sites (ASI IPAF report, 2017). The CSP team regards Indigenous employee retention as equally important as the employment figures in RTA's social performance indicators (Interview, 4/7/2018).

The company has provided financial support to the Garma Knowledge Centre and the Gulkula training centre, and for an independent business trainer to help in the preparation of the business case for the Gulkula mine lease application (Interview, 4/7/2018). The Gulkula Mining Company, a mining enterprise owned by the Gumatj Corporation, also joined the Aluminium Stewardship Initiative in its own right in February 2018.

The land rehabilitation process at Gove is well managed and an example of leading practice within Rio Tinto (Interview, 4/7/2018). The vegetation grows back well after strip mining at Gove, partly because the trees are removed (and some salvaged) at least three years before mining of an area begins. This activates and improves the soil, which is then laid down over a previously mined area. New seedlings in the soil take and grow really well (Interview, 4/7/2018). The objective is to regenerate forest as similar as possible to what was there before mining, and some of the trees are used for timber production (ASI IPAF report, 2017, p. 15).

Refinery and smelters, Saguenay, Quebec, Canada:

Vaudreuil refinery in Jonquire, Saguenay, transforms bauxite from several countries (Brazil, Guinea and Ghana) into alumina. The refinery produces 1 500 000 tonnes of alumina per annum and supplies most of the smelters in the Saguenay region. The smelters convert alumina into primary aluminium. The Saguenay region has been producing aluminium since demand for the metal boomed during World War 11, and Rio Tinto is now the region's largest private employer (Rio Tinto website).

Saquenay region, northern Quebec, Canada (source: Rio Tinto website)

Hydropower facilities on Lac-Saint-Jean are used to generate electricity for the refinery and the energy intensive smelters. This renewable energy source and smelting technology developed by Rio Tinto has enabled the company to produce aluminium certified as using nearly one third less

carbon dioxide than the industry average (Rio Tinto website). This was a key factor in the sites' selection for the first ASI certification:

> *The reason why we are capable of boasting such a good performance in Canada is partly because we are powered by hydroelectric facilities that are very clean. There is no coal… for RT this was a significant issue and we made strong commitments*. (Interview, 6/7/2018)

Apart from the strong performance on clean energy, other environmental impacts associated with hydropower generation were considered in the ASI certification. For example, RTA has signed an agreement with the Quebec government to protect the banks of Lac-Saint-Jean from erosion caused by changing water levels. The company has also taken steps to protect wetlands near its facilities (Rio Tinto website). Storage of bauxite residues from the Vaudreuil refinery is expected to reach capacity by 2022, which is a pressing environmental impact and technical challenge for the site (Rio Tinto website).

With respect to communities and social performance, RTA has agreements in place with Indigenous people within the Saguenay region, relating to land, water stewardship, employment and enterprise development (Interview, 6/7/2018).

The case for ASI certification:

Three reasons played into Rio Tinto's decision to participate in the ASI and be the first company certified for production:

- to demonstrate leadership in the market and differentiate RTA from less socially and environmentally responsible miners, refineries and smelters
- to meet demand from the downstream supply chain for certified material
- to have third party validation of the work of Rio Tinto's Communities and Social Performance (CSP) and Health, Safety and Environment (HSE) teams, for example, in agreement-making and implementation with Indigenous communities and efforts to reduce greenhouse gas emissions

The case made within Rio Tinto for participating in the ASI was that:

> *We were able to say that [ASI certification] was clearly an advantage to the business, in that we already had renewable energy, we had very strong land use agreements in place where we were mining bauxite in our Gove and Weipa operations, both of which would more than stand up under scrutiny of the UN Declaration on the Rights of Indigenous People. From that point of view, we had an existing framework into which this could be slotted.* (Interview, 6/7/2018)

The rise of ethical investment, scrutiny from shareholders and, on the demand side, from customers was noted:

> *The ASI is a good way to engage with stakeholders and demonstrate good practices. There is a competitive advantage because the way we operate is a differentiator for our product.* (Interview, 4/7/2018)

The possible substitution of aluminium for other metals (for example, by car manufacturers in North America) was mentioned as a reason for leading companies within the industry to come together and develop "this fairly unique standard". (Interview, 6/7/2018)

The scope of the ASI across the entire aluminium supply chain was seen to facilitate partnerships with downstream manufacturers:

> *From the beginning within RT there was strong interest that this was consistent with our modus operandi. We also received a letter from one of our major customers, who was asking, even before the ASI came out… was our bauxite ethical? It was a direct confirmation that they were concerned about what had happened with so-called 'blood diamonds', that things would happen way down the supply chain that impacted somehow.* (Interview, 6/7/2018)

These efforts culminated in a joint venture with another miner and ASI member, Alcoa, to partner with Apple to develop a greenhouse gas-free aluminium smelting process in Québec. ASI was seen to facilitate partnerships with important manufacturers downstream:

> *There's a huge cachet to be associated with Apple... Nespresso is also important with utilisation of aluminium for coffee pod packaging, and their recycling programme… The fact that BMW is an active member of the ASI process is indicative of the potential in terms of the adoption of aluminium as a component of their supply chain.* (Interview, 6/7/2018)

On the supply side, global competition from cheaper operations was mentioned, for example, from bauxite mined in Guinea and coal-powered refineries and smelters in China (Interview, 6/7/2018).

Other market drivers were explained as follows:

> *There was excess production from China, which was having a direct, depressive impact on prices. Strategists within the company were looking for ways to regain some premium and prices given that our alumina we were delivering was top quality. With certification, there is an expectation that eventually customers will probably be prepared to cover a premium in order to get ethical, sustainable aluminium.* (Interview, 6/7/2018)

Besides the short to medium term business objectives of ASI certification, Rio Tinto also shares the ASI's long-term objective for the aluminium industry as a whole:

> *In the short and medium term ASI can differentiate [Rio Tinto Aluminium]… well obviously it will justify our investment, but if it can elevate the global practices, which is what it is meant for, it will have impact [on the whole industry] eventually.*

An alignment of business and societal interests in improving environmental, social and governance performance standards within the aluminium industry is apparent in the first successful implementation of the initiative.

Preparation and process of certification:

Rio Tinto Aluminium spent considerable amounts of time and human resources on the multi-stakeholder process of the ASI standard setting from 2014 to 2017. This included senior executives responsible for Communities and Social Performance (CSP) attending several meetings in Geneva and hosting a meeting in Paris. The HSE team was also actively involved and engaged, in particular, with the International Union for the Conservation of Nature (IUCN) on the environmental criteria for the Performance Standard. The chief advisor of the commercial arm of RTA provided a dedicated team member to the process and CSP had someone working on the ASI for the equivalent of half-time over a year. Participation in the ASI also had to be approved

widely and at the highest level within Rio Tinto at several meetings over the three year period (Interview, 6/7/2018).

This high level of participation in the standard setting for ASI over several years was seen to have facilitated a smooth audit process at the sites in Quebec and Northern Territory. Rio Tinto's involvement in the ASI standard setting was rated as "intense" in comparison to participation in similar standards for other product groups, such as diamonds and gold:

> *We've invested probably four or five times more in the development of the standard than in the audit. The audit was time bound, it was very specific and very dense. We are used to this, we audit ourselves all the time, but the involvement in the development of the standard over two to three years was intense… The business had to be absolutely aligned with the ASI Performance Standard in order to undergo certification, …so it has not just been a one off exercise. It is absolutely embedded into the structure and ongoing capability of the business.* (Interview 6/7/2018)

The effort for Rio Tinto, as a major multinational enterprise, was not so much to raise its social and environmental performance to comply with the ASI Performance Standard, but rather to align existing internal standards and management systems with an external, multi-stakeholder initiative. When it came to the audits:

> *We found that what was required by the ASI was very consistent with what we had. For example, around green house gases, there was a lot of work on how to rejig the documentation in order to meet the ASI requirement… So it was mainly just about the language and making sure our people understood what was required. It was about interpretation. By and large this is why we were so comfortable going through this process. Because it was very consistent with what we had, we have a very robust Health, Safety, Environment and Communities (HSEC) standard.* (Interview, 6/7/2018)

Indigenous peoples rights were a significant point of discussion with civil society groups while the standard was being developed. In the company's view, these meetings raised "…very good technical questions, but some of them were not able to be practically addressed", for example:

> *One aspect we had to navigate was Free Prior and Informed Consent. The problem is that people come to this quite often with a theoretical perspective, whereas we look at it from a very practical view as it is material to how we operate. It was part of the discussion of the standard itself and then when we were audited it came up again so we had to explain what we are doing in Canada.*

The formation of an Indigenous Peoples Advisory Forum (IPAF) to the ASI was seen as valuable, because it enables Indigenous groups to "act for themselves in their own right" (Interview, 6/7/2018). The first IPAF meeting, which was held in Gove in July 2017, helped in the preparation for certification (Interview, 4/7/2018). Active participation of Indigenous Peoples in standard setting and the assurance process is a key objective of the ASI, which requires preparation for audits by local communities and the social audit team itself to promote meaningful engagement (Interview, 4/7/2018; Annandale et al, 2018).

The teams undertaking the ASI assurance process at Gove remarked that the auditors came with a different perspective to those who usually conduct internal audits:

> *The audit at Gove operations was quite different from what the team is used to. They are used to being audited, but by the third day they said "wow, this is something else". It was*

not the usual audit team, they were perhaps not as informed about mining [as other auditors have been], but they asked some critical questions… It was an outsider certification, which was quite tough. The team was very happy to achieve it.

The use of the same auditors for both Rio Tinto certifications in Canada and Australia was considered helpful to the company (Interview, 8/7/2018).

ASI members' expectations of the self-assessment process

In addition to the case study of Rio Tinto, an online survey of ASI members was conducted prior to the pilot implementation of the ElementAl self-assessment platform. Eight ASI members responded to the survey, seven of which are companies and one NGO.

Of the companies, six were participating in the pilot to familiarise themselves with the process, three of whom wanted to get a sense of the "usability" "workload" and "number of resources needed" to prepare for certification.

Six of the companies expected to gain a sense of their own "gaps" and "how far we are from achieving certification", but only three expected to have to make any changes to achieve certification.

On the Performance Standard, one member expected to have to improve water stewardship to meet the environmental criteria and one would have to address human rights issues to meet the social criteria.

In contrast, all seven companies expected to have to make changes to prepare for certification against the Chain of Custody Standard.

On preparation for certification: two thought the process would be "straightforward", three thought it would be "a lot of work" and three were "unsure".

Conclusion and lessons learned:

The interviews with RTA did not reflect on changes likely to be implemented as a result of the ASI assurance process, apart from the comment that, "the main lesson we always learn from audits is the importance of recording and tracking commitments made" (Interview, 4/7/2018). Rather, they confirmed RTA's intention to seek certification of other assets, regarding the first two as, "…sample sites to test the robustness and compliance of our systems and procedures in conformance with the standard as a whole" (Interview, 6/7/2018).

The fact that Rio Tinto invested more time in the standard setting process than the audits themselves verifies the ASI Secretariat's understanding of when and how change is likely to occur within member companies, and therefore where to capture the impact of the ASI on company practices. The case study suggests that companies will make changes to their policies and systems before undertaking ASI certification, rather than wait to respond to the results of a third party audit. They are likely to undertake the audit only once they are confident that their internal management practises align with the Performance Standard (or the Chain of Custody Standard). The implication for measuring the impact of the ASI is that baseline data on member company practices should be collected before certification. The audit reports alone will not be enough to capture the most significant impacts that occur before the assurance process begins.

The online self-assessment tool, ElementAl, was designed to help companies prepare for certification, and also to serve as a repository of baseline data on members' environmental and social performance (Interview, 2017). In the case of first certifications, however, Rio Tinto opted to use its own progress monitoring tool for initial data collection, which may have aligned more with its existing practices and internal coordination needs (Rio Tinto presentation to ASI Conference in Perth, May 2018). A challenge for the ASI's impact assessment is that companies may be reluctant to disclose changes needing to be made to achieve certification. The ASI will need to prioritise ways of building trust in the process over time, in order to encourage members to share learnings about their preparation for certification. Once a critical mass of members have been through certification, it will also be possible to de-identify examples of organisational change and learning. The role of participatory data collection, triangulating industry perspectives with those of Indigenous people and other stakeholders, will be important to assuring a balanced assessment of ASI impact.

For those companies seeking certification against the ASI Chain of Custody Standard, the mass balance system to track certified materials along the supply chain is a new feature introduced, which will in most cases require more preparation from companies than the ASI Performance Standard. Although the CoC Standard was not within the scope of the case study, a lesson for members from RTA's experience would be to not rush for certification, but to become familiar with the requirements and to establish solid and well aligned internal standards and management systems as a first step.

In conclusion, the certifications by Rio Tinto are the first to demonstrate responsible production of bauxite, alumina and aluminium as verified by the ASI. The company's experience signals to other ASI members that certification may be accomplished within a few months, provided that the groundwork on social and environmental performance has been prepared in advance. A solid management structure to coordinate certification efforts and early and comprehensive involvement of stakeholders, especially of Indigenous peoples, are vital to a successful outcome. For the ASI, the case study points toward where and when impact could be measured, at the site-level, corporate level within member companies, and in the peer learning across the production and transformation sectors of the aluminium supply chain, as the uptake of the ASI standards gains momentum from the early leaders.

8.2 Case study two: PT Adaro and the Bettercoal initiative in Indonesia

Background

In January 2016, Indonesian coal mining company, PT Adaro, became the first coal producer in Asia to complete the Bettercoal site-assessment process at its mining operations in South Kalimantan. In a country where the adverse social and environmental impacts of natural resource extraction have long been a concern for communities, NGOs and others (e.g. Greenpeace, 2014; Mongabay 2013), the participation of one of Indonesia's largest coal and energy producers in a global sustainability initiative is a promising development. Adaro is the first Indonesian-owned and operated company to commit to the continuous improvement of their operations to meet international best practice.

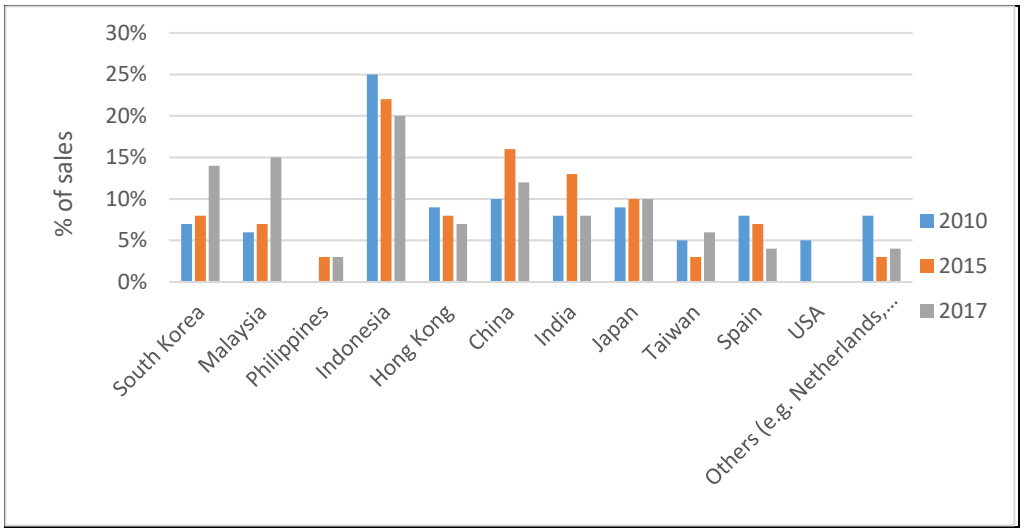
The case study examines the experience of Bettercoal in Indonesia and the reasons PT Adaro decided to participate. It also explores the existing and potential social and environmental benefits the initiative might bring not only at the site and project level, but across the wider coal industry in Indonesia. A central focus is on whether or not Bettercoal might contribute directly to the broader, or 'higher level', impacts such as contributions to poverty reduction beyond the local level and, if so, how these might be measured in relation to the SDGs.

PT Adaro

PT Adaro is a Jakarta-based coal producer and subsidiary of PT Adaro Energy, one of Indonesia's largest integrated coal and energy producers. It is one of only two Indonesian coal producers participating in Bettercoal. The company has operations in Kalimantan and Sumatra (exploration and development) and has completed both the Bettercoal self-assessment and the site assessment at its South Kalimantan site (January 2016). The second Indonesian Bettercoal participant, PT Bhumi Rantau Energi has operations in South Sumatra and completed the self-assessment in November 2016, but has yet to undergo the independent site assessment.

PT Adaro produces coal for use in power generation, cement manufacturing, and industrial applications and currently operates three pits in the Tabalong District of South Kalimantan. Adaro also has exploration and development operations in South Kalimantan. It is Indonesia's second largest coal producer with production totalling 47.7 Mt in 2017 (PT Adaro, 2017). The coal has a relatively low-pollutant content and has been branded by the company as 'Envirocoal'. Its customers are located in Asia, the Americas and Europe. A large proportion of Adaro's coal is sold domestically (20% of total production in 2017) but the bulk is sold in Asia, particularly China, India and Japan (Figure 1). While Adaro sells to Spain and the Netherlands, the proportion of sales to Europe has decreased over time and will continue to do so (Figure 2).

Figure 2: Adaro Group Sales Breakdown by Geography, 2010, 2015, 2017



Source: PT Adaro Annual Reports

Snapshot of the global coal industry

Coal remains an essential fuel source for the generation of electricity worldwide and is also a critical source of energy for the manufacture of steel, cement and other industrial activities. Despite global action to reduce coal use as part of efforts to combat climate change, 37% of the world's electricity and 74% of the world's steel is still produced using coal (World Coal Association, 2018).[9] Although 20 countries agreed to phase out coal use by 2030 at the 23rd "conference of the parties" (COP23) climate talks in Bonn in 2017, none of the world's biggest producers, such as China, India, the United States, Australia, and Indonesia were involved (WEF, 2018).[10] It is for these reasons that while the production and use of coal is declining in a number of countries, particularly in Europe, it remain an important part the energy mix in Asia and elsewhere for the foreseeable future.

Coal demand is slowing in the United States and China, two of the largest consumers, but overall global demand by 2022 is not expected to decline and, in fact, will be slightly higher than current levels (IEA, 2017a).[11] In the case of China, which is by far the largest producer and consumer of coal, economic growth and associated energy demands will mean consumption is not expected to decline, despite concerted efforts by the government to substitute coal with cleaner sources of energy, and the achievement of higher energy efficiency in the power, steel and cement industries. In addition to being the largest coal producer (44.6% of global production, 3,242 Mt), China is also the single largest importer (247 Mt / year in 2016). India is the second largest coal producer (708 Mt / year, or 9.7% of world production) and the second largest net importer (199 Mt / per year) (IEA, 2017b).[12] Indonesia is also a major coal producer, being the world's second largest coal exporter behind Australia and the fifth largest producer (IEA, 2017).

Climate change is by far the main environmental issue of concern associated with the coal industry. In addition, coal mining often has other adverse social and environmental impacts, such

[9] https://www.worldcoal.org/coal
[10] World Economic Forum (2018). 'These are the world's biggest coal producers'. 11 January 2018 https://www.weforum.org/agenda/2018/01/these-are-the-worlds-biggest-coal-producers/
[11] IEA (2017). 'Coal's decade of stagnation' https://www.iea.org/coal2017/
[12] IEA (2017). 'Key Energy Statistics'

as significant use of water resources, water contamination from acid mine drainage, and health problems associated with coal dust. There are also impacts arising from the mining industry in general, such as loss of biodiversity and arable land to land clearance, conflict and human rights concerns.

Creation of the Bettercoal Initiative

It was against this backdrop that a group of major coal buyers in the energy sector in Europe established the Bettercoal Initiative in 2012 to promote the continuous improvement in the mining and sourcing of coal for the benefit of all people impacted by the industry, workers and coal mining communities.

The foundation of Bettercoal is the Bettercoal Code, launched in June 2013. The Code was developed through a process of consultation with stakeholders in Colombia, Indonesia, Russia and South Africa. Input was also provided through Bettercoal's Stakeholder Advisory Group, which comprised specialists from civil society and industry. The Code comprises ten ethical, social and environmental principles relevant to coal mining operations. The Principles cover four main areas:

- General performance requirements, including management systems
- Business ethics performance, including disclosure
- Human and labour rights and social performance, including health and safety; and
- Environmental performance.

The ten principles of the code cover a wide range of issues, most of which are addressed by other international standards and initiatives. For instance, Principle 5 on human rights requires companies to follow the UN Guiding Principles on Business and Human Rights, while Principle 3 on disclosure and transparency requires companies commit to and support the Extractive Industries Transparency Initiative (EITI). After signing the Letter of Commitment, a company becomes a 'Bettercoal Supplier' and commits to the Assessment Process responsibilities and timelines. If it breaches these commitments, Bettercoal's 'Policy of Association' will apply. This outlines the conditions under which Bettercoal will associate and / or disassociate from a Bettercoal Supplier (Bettercoal, 2018). The Assessment Process has five steps: Supplier Commitment; Desktop Review (including a Self-Assessment Questionnaire); Site-Assessment; Continuous Improvement and Re-Assessment. Bettercoal commits to reporting at least annually on the initiative's progress, including on the consolidated performance of all suppliers whose sites have been assessed.

There are three main types of organisation that participate in Bettercoal: Members – the end users, who including energy utilities and industrial users such as cement manufacturers; Associate Members – companies and incorporated organisations involved in the coal supply chain (e.g. trade associations); and Coal Suppliers – entities with one or more coal mining sites that have signed the Letter of Commitment. Members pledge to use the Bettercoal Code in their due diligence processes when purchasing coal. Meanwhile, Suppliers commit to adopt and implement the Code, either out of an internal commitment to improving sustainability performance or in response to a demand from the end user.

Bettercoal's current membership comprises 17 Members, many of them European energy utilities, and 14 Coal Suppliers / mining companies, nine of which have completed the full Bettercoal assessment process. The strong representation of European energy companies among members reflects the origins of the initiative, which was borne from growing concern

among European civil society organisations and NGOs about how coal was being mined in countries such as Colombia. In Colombia, one of the main coal exporting countries, activists were concerned about so called 'Blood coal', sourced from regions were local communities were subject to human rights violations by paramilitary groups for voicing their concerns about the negative environmental and social impacts of coal mining (Moor and Sandt, 2014). As a result, activists were lobbying for a boycott of Colombian coal. Others, however, including the Dutch government wanted to keep importing Colombian coal due to its high quality. One solution was to develop a sector-specific initiative based on international standards that could support due diligence in the coal supply chain, thereby addressing concerns. Currently all of the large mining companies operating in Colombia are Bettercoal suppliers, such as Cerrejón, Prodeco and Drummond. Bettercoal has achieved "critical mass" in Colombia, but has not yet developed a framework and indicators capable of determining what positive changes might have occurred beyond the site / project level.

The coal suppliers who participate in Bettercoal are mainly coal producers with mining operations in the key coal producing countries, including , Indonesia, Colombia, the United States, Poland, Russia, and the UK. Although it is a global initiative, Bettercoal has a country prioritisation strategy which uses the following criteria to prioritise countries to focus on: important coal exporting country; important supply source for Bettercoal Members; and high non-technical risks, specifically those relating to human rights, corruption, health, safety, security and environment (HSSE), and risks of doing business as defined by the World Bank's Doing Business Index.

Focus on Indonesia

Aware that coal demand is declining in Europe as countries transition to alternative, cleaner energy sources, Bettercoal has recently turned its attention to Asia as a potential growth area for the initiative. Although Europe imports relatively little coal from Indonesia, it the world's second largest coal exporter behind Australia and the fifth largest producer, and so is a priority for future engagement (World Coal Association, 2016). In 2014, Indonesia exported around 241.3 million tons of coal to Asian countries, around 96 percent of its total coal exports. China was the largest buyer (27%), followed by India (24%), then Japan (12%) (Ministry of Energy and Mineral Resources, 2015). Southeast Asian countries, in particular, are expected to be the key drivers of the Indonesian coal sector in the near future (PT Adaro, 2017).

Almost all of Indonesia's coal production, more than 99%, is thermal coal used for the generation of power. With coal demand continuing to increase in Asia, some global utilities that operate in the region or who source from Indonesian producers, have started to demand responsible sources of coal. One driver of this is the greater emphasis on responsible mining is the ASEAN Minerals Cooperation Action Plan 2016-2025 (AMCAP-III). The third of ASEAN's regional plans for the sector, AMCAP-III underscores the importance of responsible mining for the future of the region's communities and economies. The Action Plan states that:

> *All ASEAN Member States have to ensure that all mining activities in ASEAN are conducted sustainably, both during and after mining. Sustainable practice should be undertaken at every stage of mineral development focusing on social and environmental well-being. Mining shall be an integral part of ASEAN community development for decades, bringing about direct and indirect benefits for local, national and regional economies* (ASEAN Secretariat, 2016).

Domestic coal demand for power generation is also increasing in Indonesia, which in the context of ASEAN AMCAP-III will likely see greater scrutiny on the mining supply chain for improved

sustainability performance (Table 4). In 2018, domestic power plans consumed 89.75 million tons of coal, with the domestic cement industry coming in second at 15.6 million tons (Indonesia Investments, 2018). Exports have also rebounded. It is expected that Indonesian coal production will increase by 50% by 2040.

Table 4: Indonesian coal production, exports and prices, 2008-2017

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Production (M tons)	240	254	275	353	412	474	458	461	456	477
Export (M tons)	191	198	210	287	345	402	382	323	308	369
Domestic consumption (M tons)	49	56	65	66	67	72	76	76	91	108
Price (USD/ton)	n.a.	70.7	91.7	118.4	95.5	82.9	72.6	60.1	61.8	85.9

Source: Indonesia Investments (2018)

A second factor influencing the choice of Indonesia for the expansion of Bettercoal was that it was one of the four countries in which there was a consultation process during the development of Bettercoal so there was familiarity with key issues and drivers in that country.

A third factor driving the focus on Indonesia was concern over the environmental impacts of coal mining. The main issues are impacts on biodiversity, particularly in Kalimantan and Sumatra (the two main coal producing regions), the health impacts of particle emissions, and impacts on water (Interview, 09/05/18; Ives, 2015). In the case of water there are two key issues: one is the sheer volume of water removed from natural sources such as rivers and aquifers; the second concerns water contamination and negative effects on biodiversity. For example, in Samarinda, East Kalimantan, local farmers and community members claim that open pit coal mining has drained water tables that are essential for rice farming (Ives, 2015). Despite being illegal some coal mining companies have also been mining in “conservation forest”, areas set aside under law to protect ecosystems and biodiversity. The inability to prevent mining in these areas has been made all the more difficult since the political and administrative decentralization process in Indonesia that commenced in 1999. This gave district level politicians in places like Kalimantan the ability to more easily trade coal and mineral concessions for financial reward and political favours.

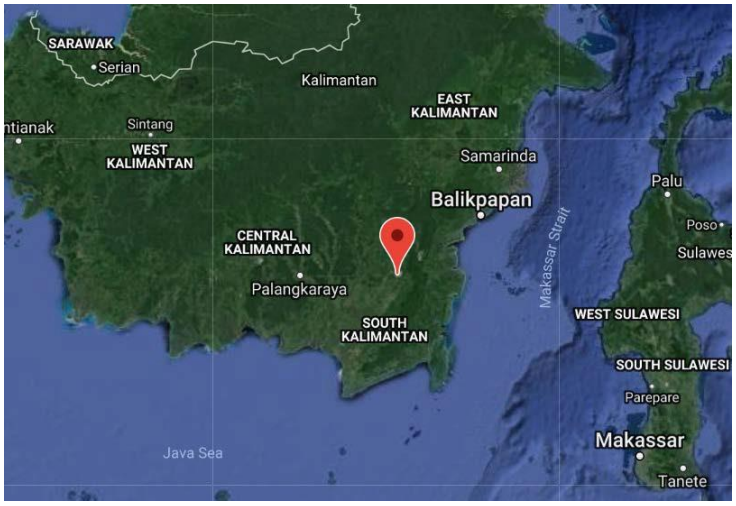
Although Indonesia has appropriate regulatory frameworks in place to manage the environmental and social impacts in mining, enforcement is weak in many places due to a combination of lack of capacity to enforce regulations and corruption (Mongabay, 2018; Transparency International, 2017). Voluntary standards, such as Bettercoal, which place primary responsibility on the company, offer an alternative and potentially significant mechanism by which to address issues where regulation is weak. However, discussions with an official in the Directorate General of Minerals and Coal and representatives of the Indonesian Mining Association indicated that while a few people have heard of Bettercoal, it is not yet well known in Indonesia (Interviews, 08/05/18).

Finally, apart from the increased focus on responsible mining as a driver of Bettercoal in Indonesia, reliability of supply is emerging as a key driver of the initiative in Asia. There is growing awareness that suppliers who are committed to responsible mining are less likely to experience disruptions to their operations, for instance as a consequence of protests or regulation action over social and environmental concerns (Bettercoal, pers. Correspondence, 2018). Furthermore, in Europe, there is an emerging trend for energy utilities to demand that coal traders not only provide the best price, but also that they source from responsible miners. Such a change in mindset may become increasingly important in Indonesia and Asia, particularly in the context of AMCAP-III.

The Assessment process

PT Adaro selected its main and only operational coal operation in Tabalong District, South Kalimantan for the Bettercoal assessment process. The mine started production in 1991 and has grown to be the single largest coal mining site in the Southern Hemisphere with production increasing from 1 million tons in 1992 to 52 million tons per annum today (PT Adaro, 2017b). The mine operates under a Coal Cooperation Agreement (CCA) with the Government of Indonesia that gives it the rights to mine coal within an area of approximately 36,000 hectares until 2022, with the right to extend the agreement period.

Figure 3: Location of PT Adaro's Tabalong Coal Mine in South Kalimantan



Source: Google Earth – image taken 14/12/15

The company completed the self-assessment process in 2014 and the independent site assessment process, undertaken by ERM's Certification & Verification Services Ltd, in January 2016 (Bettercoal website). According to a senior company representative:

> *Yes, it is a journey….it is challenging if you want to do it well. We have our environmental policies, safety policies, management systems and so on. It is easy to come up with a policy statement but much more difficult to institutionalise the changes within the company and make sure people out in the field can do it……We believe the [Bettercoal] process needs a level of maturity but we are confident we are doing something good."* (Interview 13/05/18).

Adaro's motivations for participating in Bettercoal

In 2013, some of Adaro's European customers requested that the company undergo the Bettercoal assessment process, a request no doubt driven by the concerns over the impacts coal mining in Kalimantan discussed above. Company representatives also report that in addition to the influence of its European customers, Adaro's adoption of Bettercoal was driven by the company's Managing Director and CEO who is committed to making a contribution to sustainable development in Indonesia and setting an example to peers in the mining industry. One senior company representative stated that, *"we think that we have a moral obligation – doing the right thing is good for us as a company and also good for continuing to gain acceptance of the community and other stakeholders."*

PT Adaro believes there are a number of important benefits from engaging in the Bettercoal process. One is the opportunity to benchmark itself and learn from companies with leading CSR standards. Another is that by adopting the initiative, Adaro can differentiate itself from "unethical companies" who give others a bad name. As another company representative put it: *"NGOs cannot differentiate between ethical and unethical companies – so Bettercoal offers that differentiation".* This differentiation can not only take the pressure off those miners acting responsibly but also prepares the company for any future scrutiny that may come from its customers, particularly in the growing Asian market. Although not yet requiring participation in Bettercoal *per se*, two of Adaro's main customers in Hong Kong require it to disclose information on its CSR programs and activities. One reason is that these companies must provide evidence of responsible sourcing to the Hong Kong energy regulator (Interview, 13/05/18).

In contrast to other parts of Kalimantan, the environmental and social impacts of coal mining in Tabalong have not attracted significant negative attention from regulators or activists. However, the company does recognise that its operations have some impact, particularly on the environment:

> *Our operations use an open-pit mining mechanism that changes the landscape and it has significant impacts on the biodiversity in the mining areas. That becomes a concern for the stakeholders* (PT Adaro, 2013).

A review of Adaro's Continuous Improvement Plan, produced in 2017, indicates that, with a few notable gaps, the company has well developed CSR governance processes and management systems in place. Adaro also implements a significant CSR program that includes social investment in four main areas: economic development; improving health; socio-cultural preservation; and environmental conservation (PT Adaro, 2017). Economic development initiatives include a 'Local Micro, Small, and Medium Enterprise Development' (LMSME) program, which aims to enhance community welfare through support for entrepreneurs, as well as a Village Mentoring Program that helps villages upgrade public facilities and supports creation of new economic activities. In the area of "health improvement", Adaro has concentrated its efforts on supporting access to clean water in the communities surrounding its operations and also funds a program to provide cataract surgeries for economically disadvantaged people. Adaro's socio-cultural preservation program aims to preservation local culture, especially of indigenous Dayak tribes, through funding and organising cultural events and festivals, which are promoted at regional and national levels. Finally, Adaro's environmental conservation program is focused on raising environmental awareness among school children. So far, environmental facilitators and mentors have been brought to 42 schools in the region to teach the Adiwiyata schools ("green schools") program.

Impacts of Bettercoal in South Kalimantan

PT Adaro has implemented a fairly substantial CSR / social investment program in the areas surrounding its Tabalong mine, with what appear to be positive local impacts. For instance, in 2017 Adaro's Village Mentoring Program won a platinum trophy in the Government of Indonesia's Sustainable Development Goals Award for the category of "zero hunger". This was due to the success of its initiative in establishing a shop that sells farming tools and materials, which support a sustainable food supply for local villagers (PT Adaro, 2017).

Adaro helps ensure the general economic health of South Kalimantan communities where it operates through targeted initiatives to encourage self-sufficiency. Photo – PT Adaro.

The company's environmental management systems and environmental programs are also reportedly having a positive impact. For instance, the company reports that the water it releases back into the environment is much cleaner than the water it extracts. Perhaps the most important indicator of its localised success is that the company's operations appear to have avoided the kinds of criticism and protests that are common in contemporary Indonesian extractive projects. In short, the company appears to have built a social license to operate in Tabalong.

It is not clear, however, the extent to which these positive outcomes are direct result of Adaro's participation in Bettercoal, since many of its CSR programs existed prior to joining the initiative. It may be, however, that participation in Bettercoal provides the motivation and momentum necessary for the company to maintain is commitment to responsible mining and also sets a benchmark that other coal mining companies seek to emulate. For the present time, however, the broader impacts of Bettercoal in the region, and nation appear to be limited. Few stakeholders are aware of the initiative and only one other Indonesian company besides Adaro is involved, although Bettercoal believes more will join before the end of the year.

Measuring Bettercoal's impacts

Like many of the newer sustainability standards, Bettercoal does not yet have a formal monitoring and evaluation system capable of assessing the broader, higher level impacts, for instance whether or not the initiative is making a contribution to the protection of biodiversity Kalimantan or improving labour standards at an industry level. Currently, evaluation of impacts only occurs at the project level. This entails tracking progress and work undertaken by gathering certain key performance indicators from members and comparing them against their agreed commitments. The results of Bettercoal's tracking system, known as the MIRO, are compiled then publicly

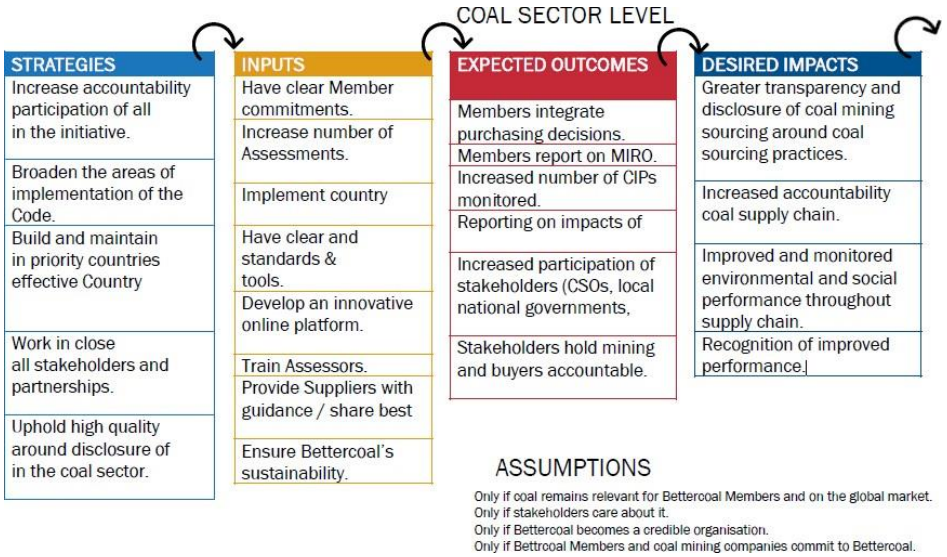
disclosed on Bettercoal's website through MIRO Progress and Conformity Review reports. Bettercoal has released three MIRO reviews so far: in 2015, 2016 and 2017.

The basis of the Conformity Review is the MIRO Scorecard, which each member completes. This captures performance against each of the indicators developed to measure members' progress in fulfilling their commitments to implement Bettercoal, such as public statements of endorsement. These indicators do not track Coal Suppliers' performance in implementing the actual standards of the Code (e.g. those requiring establishment of a grievance mechanism (Principle 2) or implementation of human rights due diligence process (Principle 5). These are captured in the Supplier Assessment Reports as a result of the site-assessments which, after the first assessment only have to be undertaken again in 5 years' time. However, the 'Phase 2 Scorecard' does track aspects that give an indication of the initiative's 'reach' in the industry, such as the share of total coal sourced by Members supplied that is covered by a self-assessment questionnaire (SAQ). Bettercoal is currently developing the indicators for the MIRO Phase 3 Scorecard, which will be published in January 2019, after a testing and feedback period of six months in 2018.

Another indicator in the scorecard is the percentage of new contracts with direct suppliers that contain a clause requiring participation in Bettercoal. In 2016, on average 22.8% of the total quantity of coal supplied to Bettercoal Members was covered by at least an SAQ while 31.8% of directly sourced coal was covered by the Code (PT Adaro, 2017c). Bettercoal does not yet track indicators that would demonstrate influence across the wider coal and energy sectors, such as the total quantity of coal produced at a national or global level that is covered by the initiative.

As mentioned earlier in this report, Bettercoal's draft 'theory of change' sets out how positive change might occur as a result of the initiative. It is based on the premise that implementation of Bettercoal strategies and activities will contribute to desired impacts, such as greater transparency and disclosure of coal mining sourcing practices (Figure 5). The draft theory of chance is currently being revised.

Figure 5: Bettercoal's draft Theory of Change



Source: Bettercoal

The assumption is that increasing the number of suppliers who have undergone the assessment process and committed to continuous improvement will eventually lead to positive higher level impacts, such as reduced conflict or protection of biodiversity, though this is not explicit. The theory of change does not define indicators that could measure such changes and does not provide the mechanism to demonstrate a cause and effect relationship between the initiative and change.

Alignment with the SDGs

Bettercoal intends to develop a monitoring and evaluation framework that is capable of measuring these higher-level impacts. It is currently considering using the SDGs as a reference point since they provide a common language and identify issues that all stakeholders – including industry, government and civil society – agree on and understand. Bettercoal has already established an MoU with the World Coal Association which, among other things, commits the parties to "*initiate common activities to promote the implementation of the sustainable Development Goals appropriate for each of the parties*"(Memorandum of Understanding between the World Coal Association and Bettercoal. 31 October 2017). One approach might be to assess whether there is a critical mass of suppliers in a particular region or country and, if so, whether there are common issues from one mining operation to the next. Furthermore, if suppliers implement their continuous improvement plans an assessment could be undertaken to determine whether this has led to a systemic change or improvement.

However, determining cause and effect in such cases is difficult since there are many potential factors at play that are independent of suppliers' implementation of the Bettercoal Code that may contribute to change. These include broader historical, regulatory and political factors, which may affect outcomes in coal mining regions. Other influencing factors might include the policies of the parent company. Any monitoring and evaluation framework that intends to measure broader contributions will have to address such complexities.

Conclusion and lessons learned

Although the coal industry is on a long-term downward trend in Europe and other countries, coal will remain a significant part of the energy mix for the foreseeable future, particularly in Asia. As such, the Bettercoal Initiative is a potentially important development. This is particularly the case in Indonesia given the country's role as a major coal producer and exporter and where there is weak enforcement of environmental and social regulations. Voluntary standards such as Bettercoal, which place primary responsibility on the company, offer an alternative and potentially significant mechanism by which to address the impacts of coal mining in such countries.

Whether or not Bettercoal will gain a foothold in Indonesia and elsewhere in Asia will depend, in large part, on whether energy utilities and other coal buyers begin to require companies to be involved. While this is the case in Europe, awareness of Bettercoal in Asia is still limited, particularly in Indonesia where even at senior levels of government only a handful of officials have knowledge of the initiative. However, this will likely change in light developments such as the ASEAN Minerals Cooperation Action Plan (AMCAP-III) which requires all ASEAN Member States to "ensure that all mining activities in ASEAN are conducted sustainably, both during and after mining". In the case of PT Adaro, some of its customers in Hong Kong area already requiring evidence of responsible sourcing, though not specifically involvement in Bettercoal.

It is too early to determine what impacts Bettercoal will have in Indonesia and similar countries. At least in the case of PT Adaro, the company's environmental and social policies and initiatives were established largely before participation in Bettercoal in 2014. However, it may be that participation in Bettercoal will help the company improve its already successful CSR strategy and ensure momentum is maintained over time. If this is the case, it is also likely that Adaro will set a benchmark that other companies will seek to emulate.

It is not clear what wider, 'higher level' impacts Bettercoal is having beyond the site / project level, such as whether it is contributing to broader efforts to alleviate poverty in a region or improving labour standards across the industry. For one, Bettercoal does not yet have a monitoring and evaluation framework that is able to assess such impacts. However, Bettercoal intends to develop such a framework in the near future, most likely one focused on the SDGs.

Determining which indicators of progress and impact to use will be crucial. One set of indicators could focus on the initiative's reach within priority countries, thereby signifying a "raising of the bar" in standards at a national level and in alignment with the country-level SDG indicators. Such indicators could include:

- The proportion of total coal suppliers in a given country who are Bettercoal members / suppliers. Reaching a "critical mass", for example 80% of all companies, would very probably raise industry social, environmental and ethical standards across the board.
- The percentage of total coal produced in a country that is sourced from Bettercoal suppliers.
- Growing demand from coal buyers for Bettercoal sources, particularly coal traders who play an important role in the coal supply chain. Currently, awareness among traders is minimal, but is something Bettercoal wants to change.
- The number of all coal procurement contracts/ transactions where Bettercoal data are used in compliance and risk assessment processes to inform purchasing. This would indicate that Bettercoal is becoming an important component of due diligence undertaken

by energy utilities.

- Evidence of awareness among key stakeholders in government, civil society etc. that Bettercoal is an industry standards to aspire to.
- Evidence that multiple Bettercoal suppliers / members in a country are combining forces–
  e.g. to lobby for regulatory change and / or better enforcement of:
  - social, environmental and ethical laws and regulations
  - establishment of programs / initiatives that combine resources, e.g. health initiatives, economic programs to tackle poverty, and partnerships with NGOs to address corruption. These programs could be framed around the SDGs to ensure easy benchmarking and potentially interoperability.

The challenge will be to develop an evaluation framework that is capable of determining the direct contribution of Bettercoal to improved environmental or social conditions beyond the site level. On a limited budget, like other sustainability standards for this sector, Bettercoal would need committed partners to assist in the impact monitoring and evaluation process.

9. Conclusion

The diversity of objectives, scope and stakeholders of initiatives within the mining, minerals and metals sector suggests that it is impractical to design similar M&E systems for all of them. Rather, efforts to align theories of change, design common core indicators and harmonise systems of data collection could be co-ordinated by the two overarching processes of ISEAL and the OECD, and the separate transparency metrics for the EITI and GRI.

The ISEAL Alliance offers valuable models and guidance to mining, mineral and metals supply chain initiatives to further develop and align their M&E systems. It also provides an annual forum and workshops to facilitate exchange between initiatives.

Membership or subscription to the ISEAL Alliance is recommended to industry-led sustainability standards and certification schemes within the mining, minerals and metals sector.

Mineral sustainability initiatives subscribing to ISEAL should form a working group to develop common core indicators and pilot joint M & E projects similar to those designed for initiatives in the agricultural sector. The next iteration of the OECD Alignment Assessment should also provide further guidance on aligning M&E to industry initiatives on conflict minerals.

The government-led initiatives, notably the Kimberley Process and the ICGLR's Regional Initiative should have more robust avenues for public participation in monitoring and evaluation at national and international levels.

The role of multi-stakeholder oversight, with independent civil society participation, is the most important component of the M&E systems to be developed. Public accountability at the national level, and where relevant, to regional and local communities, needs to be channelled through the governance institutions of each implementing country. The international organisations and development partners funding these initiatives also have an important role in encouraging rigorous M&E of their effectiveness, their interoperability with other initiatives and alignment with the SDGs.

The next step is to support each of these initiatives to better design and align their monitoring and evaluation of impact with the tracking system for the SDGs. This would include:

1) Theories of change aligned with the 2030 timeframe and with specific SDGs
2) Indicators aligned with the SDG targets and indicators
3) New baseline data aligned with the SDG indicators
4) Annual data collection aligned with the SDG data collection at national level
5) Compatible reporting formats for country-level reporting, in line with the SDGs

Finally, the initiatives profiled in this study are all at different stages of implementation. They vary in their capacity and resources available to design and implement rigorous monitoring and evaluation. However, the Sustainable Development Agenda 2030 sets a deadline for all actors to do what they can to contribute to meaningful change towards the SDGs. The focus needs to shift from standard-setting and assurance, to demonstrating impact on the environment and societies shaped by mining, minerals and metals.

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