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Operational design and implementation experience with due diligence initiatives and certification schemes

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Aissa Rechlin, Peter Dolega, Michael Priester
Projekt-Consult GmbH



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STRADE is an EU-funded research project focusing on the development of dialogue-based, innovative policy recommendations for a European strategy on future raw materials supplies. In a series of policy briefs and reports, the project will offer critical analysis and recommendations on EU raw materials policy.

This policy brief analyses the research results on success factors and challenges in the application of due diligence and certification schemes to meet socio-economic demands and establish chains of custody in the mining sector.

1. Introduction

Due diligence and certification schemes are increasingly regarded as a practical means to foster good practices in mining. The sector is urged to step out of the blind spot of the industrial chain of custody management and meet downstream and consumer demands on social and environmental responsibility. The environmental and socio-economic criteria of certification and due diligence schemes have been analysed in the policy briefs 07/2016¹ and 09/2016². It was concluded that the criteria are generally well chosen to address the challenges faced when aiming for responsible mining practices. However, not only the criteria themselves but also the operational design and implementation influence the impact that certification and due diligence can have on the mining sector. In this brief, success factors and limitations in the operational design and implementation experience with due diligence and certification schemes are thus analysed. The review and aggregation of findings from both the authors experience as well as recent research and political consulting projects form the basis of this policy brief. First, a short introduction about the architecture and the operational design of due diligence approaches and certification schemes will be given. The brief then establishes the key components to determine the effectiveness of due diligence initiatives and certification schemes. Finally, conclusions on fundamental requirements are drawn.

2. Due diligence initiatives

Identifying and addressing potential risks by introducing a set of management tools is the core element of any due diligence approach. Well-established industry-driven initiatives relevant to the mining sector are the International Council on Mining and Metals (ICMM) principles, the Global Reporting Initiative (GRI), the Conflict-Free Smelter Program (CFSP) and the London Bullion Market Association (LBMA) Gold standard, to name a few. Other initiatives have been issued by international organizations or developed in international processes, such as the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas (OECD Due Diligence Guidance), the UN Global Compact and the Equator principles or the International Finance Cooperation Environmental, Health, and Safety guidelines (IFC guidelines) (cf. policy briefs 07/2016¹ and 09/2016²). All of them encompass routine procedures carried out by traders, refiners and supply chain managers.

The core of any due diligence initiative is a standard. It can be defined as a set of rules “that identify the course of action that those who adopt them should follow”³. The rules focus on the managerial level and the introduction of processes regarded as good practice within management. Thus, a set of technical and non-technical criteria is followed to ensure that products entering a supply chain meet certain policy and formal compliance requirements⁴. While all acknowledged due diligence standards share the notion of risk identification, assessment and reporting, they differ in the pursuit of prevention, mitigation or response to the identified risks⁵.

The notion of due diligence was first introduced as a legal tool to limit the liability of brokers if they were able to prove that business transactions had been carried out with the required carefulness. Closely related is the

notion of a gapless chain of custody. The latter refers to the consistent, chronological and verifiable documentation of the supply chain. It includes the whole supply chain: from production to processing and further channels of trade up to the consumers of products made from mined materials. A gapless chain of custody is necessary to establish accountability of mining companies and traders, refineries as well as manufacturers of semi-finished and finished goods. Some due diligence initiatives aim directly at a gapless chain of custody, others solely address parts of the supply chain. In the latter case, smooth cooperation with other approaches along the supply chain is required to achieve the same objectives as a gapless chain of custody and, hence, to ensure the social license to operate in producer and consumer countries.

3. Certification systems

In mining, certification is a rather new phenomenon. Even with a large number of new initiatives emerging from 2000 onwards, the number of actual certifications is still small. The scope of certification systems can vary strongly in terms of, e. g., geographic limits, commodities or topics covered. Well-known schemes are the Canadian Towards Sustainable Mining (TSM), the Initiative for Responsible Mining Assurance (IRMA), the Kimberley Process and Fairmined/ Fairtrade (cf. policy briefs 07/2016¹ and 09/2016²). Certification systems include up to five basic elements: standard, assurance, labels and claims, traceability and capacity building^{6 7 8}. The assurance process is the means to verify the compliance with the standard and is most commonly carried out by an auditing process. Combined with the subsequent labelling of the products or processes, it constitutes the main difference between certification and a due diligence scheme. In mining, a certified product can be an excavated ore and a certified process could be the management procedure to ensure workers' health and safety. Increasingly blurred boundaries between the terms "certification" and "due diligence" result from growing demands to assess due diligence schemes as well. For example does the OECD Due Diligence Guidance include the use of certification in its five-step framework, certification forms part of the five-step for risk-based due diligence in the mineral supply chain⁹. In case observations are made for due diligence and certification systems, the policy brief will refer to standard systems.

The basic elements of certification schemes will be discussed in the context of their contribution to the schemes' effectiveness. According to Mori et al., the latter is regarded as the main feature of any certification scheme and is constituted by eight key components¹⁰:

- Sustainability awareness
- Market access
- Management systems and productivity
- Social, environmental and economic impacts
- Monitoring outcome
- Competition, overlapping and interoperability
- Stakeholder participation
- Accountability and transparency.

We will adhere to these eight key components in this policy brief to carve out success factors, challenges and limits of due diligence and certification schemes in mining.

4. Challenges in the implementation of due diligence and certification schemes

Apart from breaking-down the effectiveness into the above-mentioned components, two levels on which effects take place need to be differentiated. First, there is the implementation (or operationalization) that comprises the effects any system has on participating enterprises and subsequent impacts on society, environment and economics. Second, the management structure of each system and its links to external demands. Such demands may arise in the context of international politics or from competition among the systems. Few of the certification systems developed have been put into practice long enough for broad evaluation of implementation related topics. The findings are, thus, partly drawn from experiences in other sectors.

4.1. Sustainability awareness

The increase in awareness of sustainable production is regarded as one of the overall aims of standard systems. Increasing knowledge about the provenance of goods and terms of production can play a vital role in decision making by several stakeholder groups.

Given the choice, purchasers along the supply chain may take decisions in favour of sustainable producers leading to increased consumer-driven demand for responsibly mined and certified products¹¹. Thus, awareness needs not only increase among end consumers but also among industry partners along the whole supply chain.

With regard to the consumer-driven demand, the influence of targeted purchasing behaviour by the end consumers is frequently referred to. In the mining sector at least such influence seems limited. The end consumer often relies on labels as a means to determine if a product originates from responsible sources. In the mining sector labelling of certified materials is mostly regarded as impractical because of the complexity and diversity of the supply chains involved and the often large number of different mined materials in the end product. Thus, effective choice on the part of the end consumer is difficult to realize on a broad scale.

It should be stated here that the connection between standards and sustainability awareness in mining is mutually influential. Not only does increasing standard system implementation impact on sustainability awareness along the mineral supply chain but also does increasing awareness lead to demands for higher and verifiably implemented standards. Ongoing discussions on an international level and the subsequent increased visibility of sustainability and responsible mining have been stimulated by the development of the OECD Due Diligence Guidance and the Dodd Frank Act 1502 (DFA). This also entailed similar debates within the EU and finally resulted in the recently adopted EU directive on conflict minerals. The initiative will be analysed and discussed in a following report within the project.

A rise in awareness among stakeholders and the broader civil society is moreover not solely based on the implementation of standards. Information flow and cross-border networking between NGOs worldwide and affected groups in producer countries (cf. Chapter. 4.7) for example is another factor. Social upheavals in extraction areas, e.g. in Peru¹², are discussed by miners as an important reason to develop and adhere to standard systems.

Compulsory and voluntary approaches

Both, due diligence and certification schemes can be set-up as either compulsory or voluntary schemes. Compulsory schemes can be legislated by governments – be it the government of a producing country or a consuming country – or can pertain to the membership of an industry association. These schemes can be enforced by law and can generate high impacts. In case of government-driven compulsory approaches, the private sector is sometimes found to react during the planning phase by introducing voluntary standard systems in order to forestall governmental regulations. To enforce compulsory systems, resources and structures are required. In countries with weak governance, where the introduction of due diligence and certification systems may, for various reasons, be regarded as especially desirable, such resources are often lacking¹³.

Moreover, where state-driven compulsory standard systems are adopted, in addition to existing law, parallel legal frameworks might be established. These can lead to conflicts within the jurisdiction. In the Democratic Republic of the Congo (DRC), the certification system Certified Trade Chain is implemented as a tool for the formalization of artisanal and small scale miners, thereby charging it with an additional agenda and jeopardizing its original goals¹⁴. The effectiveness of such systems thus needs to be analysed carefully. In the context of advantages and disadvantages of compulsory systems, the many implications of the Dodd-Frank Act 1502 constitute an unparalleled, though controversially discussed, example^{15 16 17}. The pros and cons for voluntary systems are just as diverse. For instance, voluntary systems are regarded by many as more adaptable to, e.g., political changes but at the same time it may be more difficult to achieve full coverage since they cannot be enforced by law¹⁰.

Voluntary schemes and compulsory industry-driven ones are mostly adopted due to a business or reputation driver and tend to meet market needs. To account for reservations about their credibility, these systems strongly depend on their effectiveness (cf. Chapter 4). Thus, requirements such as independent assessments, functioning sanction mechanisms in case of non-compliance, transparency and accountability as well as interoperability are shared by voluntary and compulsory approaches alike^{10 18}.

4.2. Market access

The access of upstream companies (cf. Section 4.7) to international markets is based on each companies' ability to comply with the demands from the buyers. Those demands are related to the conditions and measures for import set by processing and consumer countries or based in the discussed sustainability awareness of the stakeholders. The ability to be compliant increases with the asset base of a company. Hence, market access depends on the availability of financial, technical and human resources, the legal framework and the buyers' demands. Standard systems can come into play at all these levels and increase or decrease the access to markets in various ways as detailed below.

With regard to financial resources, due diligence reports are increasingly used by investors to evaluate the opportunities and risks of their investments. This way, the increasing public awareness about shortcomings in mining practices shall be met. As investments are key to the realization of mining projects at all scales, this link may have strong leveraging effects.

In markets with heightened consumer awareness of sustainability and corporate social responsibility (CSR) and more restrictive regulations, standard systems can create business opportunities¹⁹. In this framework, certification systems are regarded to generate higher added value than a risk-based due diligence approach as certification is more convincing to consumers and helps create a plausible CSR narrative⁴.

Market access can be denied if the mineral resources are not verifiably mined under international standards. Then, traders might refrain from buying from such sources to avoid conflicts downstream with, e.g., regulations such as the DFA. After the adoption of the latter, many companies avoided sourcing from the DRC, which led to a temporary but severe slump in the country's exports.

The implementation of standard systems requires human, financial and technical resources. The more elaborate the system, the larger the investment. As due diligence initiatives aim at the managerial level the required investments are largely limited to training of personnel and development of internal structures. Certification systems, on the other hand, aim additionally at practical implementation in many cases. Depending on the specific aims of the scheme in question, this entails further investments, not only while setting up the required capacities and demonstration of compliance but also on an ongoing basis. The lower the status quo, especially in production, the more substantial are such investments⁴. Large companies based in countries with stringent regulation of occupational health and safety and environmental standards may adapt more easily to certification schemes in general. Small-scale producers with a small asset base and less experience in compliance with high standards are at a comparative disadvantage. Access to market then becomes more difficult and sometimes even impossible for small-scale miners. This can lead to shifting effects as has been observed in the wood sector^{6 20 21}: The certification of the Forest Stewardship Council was originally intended to support small-scale producers in the global South. Nonetheless, nowadays over 80% of the forest area certified lies with industrialized forestry in the global North²¹. From a developmental point of view, such shifting effects are unwanted.

Consequently, the efficiency of systems with respect to time, financial and human resources needs to be taken into account at all levels. Part of the solution could be that buyers of mined materials screen their sources for responsible mining practices using a risk-based due diligence concept. This could increase the market access for responsibly mining small enterprises while keeping costs at a low level. A development in this direction is confronted, however, by reservations of downstream stakeholders. Those who take this position argue that such an approach will gain little acceptance with end consumers because they are not easy to comprehend⁴.

Another way to level the different starting points with regard to the asset base of companies wanting to achieve certification is pre-certification support. To this end, various mechanisms can be adopted, including dissemination of information material or training of personnel¹⁸. However, a valid business model that would allow for broad and long-term application of such support measures is not in place for any of the certification systems in mining to date. This challenge even arises in sectors that have long lasting experience with certification and relatively simple supply chains, such as in the agricultural sector.

It may be deduced that an improvement in market access depends on various factors and is not altogether in the sphere of influence of the standard systems themselves. The views and ideas of different stakeholder groups, funding possibilities and the composition of the sector – balanced or not with regard to the asset base – come into play as well. When analysing these linkages in the context of mining it should be kept in mind that, that certification in the mining sector is applied still in only a very limited number of cases worldwide.

4.3. Management systems and productivity

The improvement of management processes and productivity in participating companies is a positive result that the introduction of a standard system can achieve¹⁸. Economic benefits include supply security, resource efficiency, stable and economically viable communities in producer countries as well as enhanced employee satisfaction²². Positive changes in performance, quality and productivity in the work flow have been reported by the two Peruvian mines Sotrami and Yanaquihua, whose economic success coincides in time with their certification through the Responsible Jewellery Council (RJC) and Fairmined, respectively. The introduction of sustainability standards has been reported to lead to positive impacts on employee work attitude²³.

In close relation to this topic stands the comparison of benefits and limits of management / process-based and performance-based assessments of the compliance with standards in Section 4.4.

4.4. Social, environmental and economic impacts

Evaluation of certification systems in various sectors has shown that the social, environmental and economic dimension can be positively affected by both enhanced management and production practice²⁴. The social, environmental, and economic benefits of operating in a more sustainable manner are increasingly recognized by companies²⁵. Marketing themselves as premium producers has led to economic advantages

for mining companies participating in certification schemes such as the Peruvian company Sotrami. For a thorough discussion on how due diligence and certification systems address the impacts of mining on environment, human rights and social issues refer to the policy briefs 07/2016¹ and 09/2016².

The procedures to evaluate compliance with a standard system have strong implications for the assessment of its social, environmental and economic impacts. In this respect, it is distinguished between two approaches: management-based and performance-based approaches. Management-based approaches, such as many ISO norms, require companies to install common and structured management practices in order to be compliant. They build on the expectation that the establishment of routine procedures will lead to gradual improvement in performance towards the overall aims of the standard. However, stakeholders' expectations on sustainability improvements and/or a stop to harmful practices by the introduction of a standard system are often not met^{6 25}.

Performance-based systems evaluate the impact – improvements with respect to predefined criteria – that are achieved by their participants. There are different ways to measure performance, e.g. by establishing technical criteria or best practice guidelines²⁵. The Aluminium Stewardship Initiative, for instance, is a performance-based standard system²⁶. Using a performance-based approach, companies are more flexible in the way they achieve the desired outcomes. Direct verification of the impacts of a system towards achieving the primary goals is possible. Disadvantages of such outcome-driven approaches are increased costs for compliance and higher initial hurdles for inexperienced small-scale producers as well as reduced interoperability between the management systems of companies along the supply chain. Integrated approaches using elements of management- and performance-based systems might be most flexible and effective. For instance, the Australian Minerals Code is developing in the direction of such an integrated model²⁵.

4.5. Monitoring outcome

Almost all schemes aim at increasing transparency and accountability within the management processes of participants. An important measure to meet this aim is the monitoring of processes and outcomes. The monitoring can address the assurance process during certification or the self-assessments that lead to due diligence reports.

Just as important is the monitoring of the schemes themselves. It is a prerequisite for stakeholder accountability and further improvement of schemes. New developments, loopholes and shortcomings recognized over time can be accounted for this way. Consequently, regular revision and improvement of standard systems is necessary. Nonetheless, monitoring and evaluation is not common with due diligence initiatives or certification systems. Many schemes have no mechanism for periodic evaluation in place, miss out on clearly articulated objectives, or lack well-defined and measurable indicators^{18 27 28 29}.

Moreover, existing certification schemes are mainly financed through the same industry (e.g. iTSCi) that is being certified, in some cases aided by governments or the international donor community. This potential conflict of interest underlines the importance of credible monitoring. Keeping this in mind – as well as the diverging means and interests of the various stakeholder groups – third-party evaluation and precise business models become increasingly important³⁰.

4.6. Competition, overlapping and interoperability

The strongly increasing number of standard systems with different requirements within the last years has several implications. A variety of schemes can lead to an increase in innovation and specialization in niche markets of standard systems through competition^{31 [26]}. At the same time, it may facilitate the development of unreliable schemes with loose performance standards. Duplication and overlapping between schemes can create inconsistencies and lack of clarity, leading to loss of credibility with stakeholders and contribute to “greenwashing”¹⁸. Long supply chains and limited possibilities of establishing provenance (for instance, because material of different origins are mixed in the processes) add to the high complexity. To meet these challenges, increased interoperability is called for. Interoperability in this context means the ability of independent, heterogeneous systems to work smoothly with or use parts of each other.

Two types of interoperability for due diligence initiatives and certification schemes can be distinguished. Horizontal interoperability includes the linkages to other schemes at the same stage of the supply chain and chain of custody, while vertical interoperability facilitates smooth connections to internationally accepted standards of industry, such as ISO norms, and to (supra-) regional bodies. The latter includes e. g. the OECD Due Diligence Guidance or the new EU regulation on conflict minerals. Horizontal interoperability allows for integration of several schemes with various areas of specialization – be it a regional or a thematic focus, the preoccupation with specific materials or groups of producers or risk-based approaches. Vertical interoperability enables a continuous chain of custody from the up to downstream sector and this way increases market access of producers. Also management processes must be designed in an interoperable

manner with agreed monitoring and reporting processes in accordance with national and international laws to allow for chain of custody.

Duplications can, for instance, be avoided by mutual recognition of the assurance processes of certification systems. An attempt to design interoperability between schemes on the upstream side is the supply chain certification of conflict minerals built up by iTSCi (ITRI tin supply chain initiative) and the Regional Certification Mechanism (RCM) of the ICGLR (International Conference of the Great Lakes Region) in cooperation with refineries pertaining to the conflict-free smelter program (CFSP). However, there are still a large number of overlaps reported for this example which decreases the performance significantly³⁰. Another example constitutes the official recognition of the Fairmined standard for the ASM gold mining sector by the ISEAL member RJC. The cross-sectoral organization ISEAL seeks to strengthen sustainability standards systems inter alia by supporting increase in interoperability.

Cost of compliance is increased by divergent monitoring, reporting and assurance requirements of different schemes. Increased interoperability between schemes and reduction of overlaps has thus the potential to reduce costs and amplify the outcomes achieved by individual schemes through coordination and exchange of knowledge and practices. Interactions and support between schemes to date include usage of established schemes as templates for new ones, assistance received during the startup phase and standards systems that cross-reference each other. However, schemes rarely accept certificates, labels or claims provided by other schemes¹⁰.

The concomitant introduction of less rigorous schemes leads to a decrease of incentives for those participants, who adopt a scheme with higher standards. In that case, even companies with aspirations to aim for high standards may turn to the less rigorous schemes to stay competitive. It is argued by some that developmental endeavours are then counteracted. Others emphasize that a less rigorous scheme may attract more participants and develop broader effects in consequence.

4.7. Stakeholder participation

Participation and cooperation of stakeholders can influence the effectiveness of standard systems on various levels. Those are namely the development, monitoring and reviewing of the schemes themselves as well as possible participation in the assurance process. The integration of specific indepth sector knowledge from the various stakeholder groups can enhance the governance of standard systems. Stakeholder engagement can, moreover, help to regulate or reduce conflict and improve the legitimacy and credibility of a scheme.

The degree and the fields of participation of stakeholders vary between the schemes. The engagement of stakeholders during the stage of development, say, is described as very common by ISEAL³². Nonetheless, there are exemptions, especially in the area of conflict minerals³³. However, it is just as important to take into account which stakeholder groups are represented in such a process. Unintended consequences may result if directly affected groups in the mining areas, such as artisanal and small scale miners who depend on the mined materials for their livelihoods, are not sufficiently included in the decision making¹⁶.

During development of a scheme – due diligence or certification – the different perspectives and experience of diverse stakeholders can strengthen its design. On the downside, challenging coordination processes can arise that lead to delays in the process. In terms of efficiency and cost reduction it is therefore recommendable to determine the most appropriate occasion to engage with stakeholders³⁴. Apart from prolonged processes, there is a risk that stakeholders' interests are put ahead of decisions related to operation and objectives of the scheme.

Upstream stakeholders are the producers and traders (see Fig. below). For this group the driving forces to participate in standard systems are secure market access and achievement of higher prices for their products. For small-scale producers, an additional advantage lies in the attraction of services funded by donors or the standard-setting organizations to improve technical and business capacities. The next group along the supply chain are the processors (smelters, refineries and others). They play an important role in the chain of custody as many of the distinguishing mineralogical characteristics of the ores are lost during processing. The CFSP is thus an important step towards a consistent chain of custody in mining.

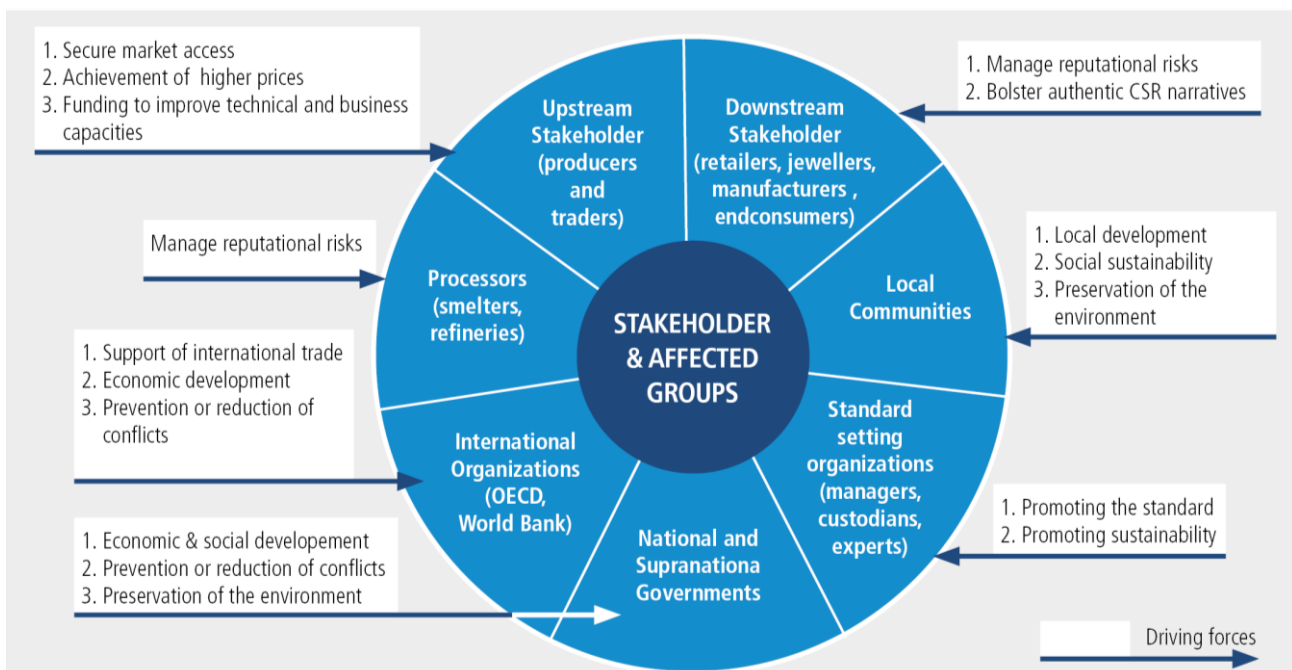
Stakeholders of the downstream sector include retailers, jewellers, manufacturers and their suppliers as well as consumers. The primary interest of downstream businesses in participating in the governance of schemes and actively implementing them is to manage their reputational risks and bolster authentic CSR narratives by identifying sources of certified material. The mitigation of reputational risks is in line with securing future project financing³⁵. The social license to operate and human rights issues have, consequently, become part of risk assessments in mining.

National and supranational governments as well as international organisations, such as the OECD, primarily aim to support trade and economic as well as social development, while preventing or reducing conflicts. Another important group are the managers and custodians of the standard-setting organizations as well as

experts working with practitioners and standard-setting initiatives. The goal of these organizations is not only to promote social, economic or ecologic values but also to bring forward their business.

The communities living in mining areas are by and large interested in local development, social sustainability and preservation of the environment. This may include groups and individuals with strong reservations towards mining activities in general. Within such groups, the term “affected group” for the communities is preferred over the term “stakeholder”. The involvement of affected groups is of utmost importance when aiming for the social license to operate a mine or business.

Figure 1: Stakeholders and their driving forces to participate in due diligence and certification systems



Source: Projekt-Consult GmbH

Not all stakeholders and affected groups possess the same resources or structures to participate in multi-stakeholder processes. For example, indigenous communities might not have structures and officials in place that hold the right to represent the whole community. Moreover, financial resources might be lacking. The participation in multi-stakeholder processes is then hindered – even more so on an international basis.

The implementation of impartial grievance mechanisms and channels for communication is an important measure to allow for a continuous participation and an exchange of perceptions, expectations and concerns of all stakeholder groups, thereby increasing the performance of standard systems.

4.8. Accountability and transparency

Standard systems strive to improve transparency and accountability in the mining sector. The creation of multi-regional, national and international networks and stakeholder dialogues leads in this direction. Transparency and accountability with regard to the governance of the standard systems themselves, including information on decision-makers and the decision-making processes are just as important. Certification schemes need predefined processes, guidelines and rules on the composition and selection of stakeholders and on the kind of influence that is granted to them. However, transparency in the selection and documentation of stakeholders that are participating in decision-making processes during setup or improvement of a standard is lacking in a significant number of cases¹⁸.

The evaluation process for (non-) compliance of participants is another crucial topic that needs to be transparent for standard systems to stay credible and maintain the interest in participation of compliant institutions. However, decisions are often neither made public nor evaluated by an impartial unit, and penalties for misuse are lacking on a broad scale^{10,27}. For example, the Kimberley Process – an international system for the prevention of trade with conflict diamonds – was criticised for ignoring situations of non-compliance³⁶ or not being able to enforce sanctions that had been imposed³⁷. This entailed a major loss in credibility.

Further situations, where a substantial number of certification systems lack transparency include the use of vague language, which may lead to loopholes and misinterpretation. Moreover, a lack of disclosure and reporting processes has been detected. This may lead to greenwashing – or result in allegations of such a behaviour^{27 38}. Furthermore, many standard systems do not make detailed information publicly available about their efforts to foster and improve the level of compliance of participants. This holds true especially for new starters and participants with financial or technical constraints¹⁸.

5. Conclusions

To date, the impact of mineral certification in mining has been limited: only a small number of mines and a minimal share of global production are certified. The systems have not yet disseminated into the mining industry. Due diligence has positively contributed to enhance transparency and the implementation of standards, but besides the advances even in and around compliant mines, conflicts still arise and the social license to operate is questioned.

In order to add to the overall aim of enhancing long-term sustainability in the supply of mined materials – and subsequently responsible production and sustainability in supply chains – standards systems need to be effective. The effectiveness can be determined by evaluating the eight key components: sustainability awareness; market access; management systems and productivity; social, environmental and economic impacts; monitoring outcome; competition, overlapping and interoperability; stakeholder participation and accountability and transparency.

The two levels on which effects and actions take place are a) the operational level of participating enterprises and subsequent impacts on society, environment and economics and b) the management level of the system itself including the system's embedment in international competition and political framework. From the analysis of the key components it has become clear that there is still room for improvement for a predominant number of standard systems. At the same time, each system needs to be considered in the context of its focus, coverage and political setting.

Credibility has been found to be of crucial importance for the effectiveness throughout the analysis in this policy brief. The most pressing prerequisites to maintain credibility are transparency and accountability – for the compliant businesses as much as for the standard systems themselves. Following this reasoning, development and enforcement of functioning sanction mechanisms in cases of non-compliance, publication of decision-making processes and increasing interoperability are key demands.

To enhance the transparency of their internal processes, standard systems need to aim at using specific language and meaningful criteria for evaluation, increase interoperability and develop viable business models. The stronger incorporation of civil society organizations into the assessment process is another way to work towards credibility, transparency and efficiency. Participation of local organizations in the certification process has several advantages: knowledge of language as well as cultural and local conditions can be incorporated; training of people enhances the understanding of technical processes leading to more trust; audits can be repeated at higher frequencies so that sudden changes in the production processes – common in the ASM sector – can be monitored and the employment of expensive international personnel for audits can be reduced.

The costs that result from the use of human, technical and financial resources are one of the major hurdles for broad standard implementation. Most of the aforementioned measures, such as interoperability, allow for a more economic use of these resources and are thus a prerequisite for the generation of viable business models and efficiency.

To enhance the trinity “credibility, effectiveness and efficiency”, future developments could be directed towards conformity of standard systems with internationally accepted standards, such as ISO 17011:2004 for accreditation of auditors, ISO 9000 for quality control, ISO 19011 for the auditing of management systems and ISO 26000 that comprises guidelines for social responsibility. In this framework, mechanisms should be complementing and/or aligning with existing governmental regulations.

The notion of a meta-standard seems a logical step to guarantee standards' quality and ensure credibility. The NamiRo project³⁹ (project duration 2015-2017) has set out to analyse the validity and possibly the design of such an approach in mining. Compliance with the widely renowned ISEAL guidelines could be envisaged as well.

6. Outlook

Thinking outside the box of using standard systems to promote responsible mining and sustainable supply chains, another potentially viable concept involves direct cooperation between up- and downstream companies and subsequent shortening of the supply chain. This approach has been taken by, e.g., the Solutions for Hope initiative (SfH). Strong dependencies between up- and downstream companies for such

shortened supply chains⁴⁰ need to be taken care of, as indicate reports of such cases within SfH. Nonetheless, this idea should be evaluated further as a complementary approach to standard systems.

Building on the discussion in this brief, the scope of the analysis will be widened to include deviant concepts and approaches that foster responsible mining. Those approaches will then be compared to the notion of standard systems. Country case studies to expand on as well as illustrate important issues in the implementation will be presented. Furthermore, the current EU regulation on conflict minerals will be analysed and contextualized. On this basis recommendations for future EU engagement to foster responsible mining practices will be developed.

References

- ¹ Schüler, Doris ; Degreif, Stefanie; Dolega, Peter; Buchert, Mathias: "Voluntary Initiatives in the Mining Sector and Their Principles and Criteria on Environmental Sustainability", Policy Brief 07/2016, Strategic Dialogue on Sustainable Raw Materials for Europe (STRADE) project, Funded by the EU Horizon 2020 Programme (2016). http://stradeproject.eu/fileadmin/user_upload/pdf/STRADE_PB_07_OEI_Nov.2016.pdf
- ² Schüler, Doris; Degreif, Stefanie; Dolega, Peter; Manhart, Andreas: "Voluntary Initiatives in the Mining Sector and Their Principles and Criteria on Socio-Economic Sustainability", Policy Brief 09/2016, Strategic Dialogue on Sustainable Raw Materials for Europe (STRADE) project, Funded by the EU Horizon 2020 Programme (2016). http://stradeproject.eu/fileadmin/user_upload/pdf/PolicyBrief_09-2016_Dec2016_FINAL.pdf
- ³ Fisher, Eleanor; Childs, John: "An Ethical Turn in African Mining - Voluntary Regulation through Fair Trade", in Mining and Social Transformation in Africa: Mineralizing and Democratizing Trends in Artisanal Production, ed. Bryceson, Deborah Fahy; Jønsson, Jesper Bosse; Mwaipopo, R. A. (2014).
- ⁴ Carter, Asheton "A Discussion on the Inclusion of Small Scale Gold Producers in Voluntary Supply-Chain Initiatives and Standards - a Rapid Study", Dragonfly Initiative commissioned by BGI / Projekt-Consult and RJC, financed by SECO (in press).
- ⁵ Martin-Ortega, Olga: "Human Rights Due Diligence for Corporations: From Voluntary Standards to Hard Law at Last?", Netherlands Quarterly of Human Rights 31, no. 4 (2013): 44–74, http://www.academia.edu/download/36360876/NQHR_32_01_0044Olga_Martin-Ortega.pdf.
- ⁶ Komives, Kristin; Jackson, Amy: "Introduction to Voluntary Standard Systems", ed. Schmitz-Hoffmann, Carsten; Schmidt, Michael; Palekhov, Dmitry, Natural Resource Management in Transition 1, Berlin, Springer (2014).
- ⁷ Hansmann, Berthold; Schmidt, Michael; Palekhov, Dmitry; Walter, Tanja: "Konzept und Funktionen von freiwilligen Nachhaltigkeitsstandards", in Zertifizierung als Erfolgsfaktor, ed. Friedel, Rainer; Spindler, Edmund A. , Wiesbaden, Springer Fachmedien Wiesbaden (2016), p. 57–74, <http://link.springer.com/10.1007/978-3-658-09701-1>.
- ⁸ Schiavi, Petrina; Solomon, Fiona: "Voluntary Initiatives in the Mining Industry: Do they work?", Greener Management International 2006, no. 53 (2007): p. 26–41, doi:10.9774/GLEAF.3062.2006.sp.00004.
- ⁹ OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas - Third Edition, (2016), http://www.oecd-ilibrary.org/governance/oecd-due-diligence-guidance-for-responsible-supply-chains-of-minerals-from-conflict-affected-and-high-risk-areas_9789264252479-en
- ¹⁰ Mori Junior, Renzo; Franks, Daniel M.; Ali, Saleem H.: "Sustainability Certification Schemes: Evaluating Their Effectiveness and Adaptability", Corporate Governance: The International Journal of Business in Society 16, no. 3 (2016), p. 579–92, doi:10.1108/CG-03-2016-0066.
- ¹¹ Young, Steven B.; Fonseca, Alberto; Dias, Gorety: "Principles for Responsible Metals Supply to Electronics", Social Responsibility Journal 1, no. 6 (2010): p. 126–142, doi: <http://dx.doi.org/10.1108/17471111011024595>.
- ¹² Armstrong, Rita; Baillie, Caroline; Fourie, Andie; Rondon, Glevys: "Mining and Community Engagement in Peru: Communities Telling Their Stories to Inform Future Practice", International Mining for Development Centre Action Research Report, IM4DC Action Research Report, School of Civil, Environmental and Mining Engineering, University of Western Australia (2014).
- ¹³ Rüttinger, Lukas; Scholl, Christine: "UmSoRes Final Report Part 4: Responsible Mining? Challenges, Perspectives and Approaches", UmSoRes project of the Environmental Research Plan of the Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety, (in press).
- ¹⁴ Levin, Estelle; Jorns, Angela; Roesen, Gisa: "Mineral Supply Chain Due Diligence Audits and Risk Assessments in the Great Lakes Region Analysis Report", ICGLR Audit Committee/BGR, (2013), <http://www.oecd.org/daf/inv/mne/audit-analysis-report-20131111.pdf>.
- ¹⁵ Schüler, Doris; Brunn, Christoph; Gsell, Martin; Manhardt, Andreas: „Outlining Socio-Economic Challenges in the Non-Fuel Mining Sector” Policy Brief 07/2016, Strategic Dialogue on Sustainable Raw Materials for Europe (STRADE) project, Funded by the EU Horizon 2020 Programme (2016). http://stradeproject.eu/fileadmin/user_upload/pdf/PolicyBrief_04-2016_Sep2016_FINAL.pdf
- ¹⁶ Tougas, Denis: "Responsabilité et imputabilité dans le trafic des «minerais de conflit» à l'Est de la République démocratique du Congo", In: La responsabilité sociale des entreprises dans le secteur minier, Réponse ou obstacle aux enjeux de légitimité et de développement en Afrique?, eds. Campbell and M. Laforce, Québec, Presses de l'Université du Québec, (2016), p. 163-229.
- ¹⁷ Rüttinger, Lukas; Scholl, Christine: „Auswirkungen des Dodd-Frank Act Sektion 1502 auf die Region der Großen Seen - Lessons learned für eine Regulierung von Due Diligence in Lieferketten mineralischer Rohstoffe aus Konflikt- und Hochrisikogebieten“, (2015), <https://www.umweltbundesamt.de/dokument/auswirkungen-des-dodd-frank-act-sektion-1502-auf>.
- ¹⁸ Mori Junior, Renzo; Franks, D. M. ; Ali, S. H.: "Designing Sustainability Certification for Impact: Analysis of the Design Characteristics of 15 Sustainability Standards in the Mining Industry", Centre for Social Responsibility in Mining, University of Queensland, Brisbane (2015) https://www.researchgate.net/profile/Renzo_Junior/publication/279204777_Designing_Sustainability_Certification_Schemes_for_Impact_An_analysis_of_the_design_characteristics_of_15_sustainability_certification_schemes_in_the_mining_industry/links/559083cd08ae1e1f9bae1e2c.pdf.

- ¹⁹ Steering Committee of the State-of-Knowledge Assessment of Standards and Certification: "Toward sustainability: The roles and limitations of certification", (2012) Washington, DC: Resolve Inc., <http://fbbvdoc.rainforest-alliance.org/sites/default/files/publication/pdf/Toward-Sustainability-report-summary-and-appendicesv2.pdf>.
- ²⁰ Blackmore, Emma ; Holzman, Caren; Buxton, Abbi: "Scaling up Certification in Artisanal and Small-Scale Mining Innovations for Inclusivity", (2013) <http://pubs.iied.org/pdfs/16545IIED.pdf>
- ²¹ Manhart, Andreas; Gandenberger, Carsten, Bodenheimer, Miriam; Rüttinger, Lukas; Griestop, Laura: "Ungewollte Verschiebungseffekte durch Standards und Zertifizierung – Relevanz und Lösungsansätze für den Bereich der abiotischen Rohstoffe", (2015) http://www.umweltbundesamt.de/sites/default/files/medien/378/dokumente/rohpolress_kurzanalyse_5_verschiebungseffekte_07102015_final-ig.pdf.
- ²² Steering Committee of the State-of-Knowledge Assessment of Standards and Certification, 2012 *op. cit.*
- ²³ Delmas, Magali; Pekovic, Sanja: "The Engaged Organization: Human Capital, Social Capital, Green Capital and Labour Productivity", (2013), <http://www.hbs.edu/faculty/conferences/2013-sustainability-and-corporation/Documents/Delmas-Pekovic-2013.pdf>.
- ²⁴ Steering Committee of the State-of-Knowledge Assessment of Standards and Certification, 2012 *op. cit.*
- ²⁵ Greene, George: "Industry Codes of Practice and Other Voluntary Initiatives: Their Application to the Mining and Metals Sector", Mining, Minerals and Sustainable Development Project Report, no. 26, World Business Council for Sustainable Development, (2002).
- ²⁶ Aluminium Stewardship Initiative (2014): ASI Performance Standard Part I: Principles and Criteria, Version 1, <http://aluminium-stewardship.org/asi-standard/asi-performance-standard/>.
- ²⁷ Stark, Amanda and Levin, Estelle: "Benchmark Study of Environmental and Social Standards in Industrialised Precious Metals Mining" for Solidaridad, (2011). http://www.estellelevin.com/wp-content/uploads/2013/12/Solidaridad_Benchmark_Study_Final_Dec_2011.pdf.
- ²⁸ Blackman, Alan; Rivera, Jorge: "Producer-Level Benefits of Sustainability Certification", no. 25-6, p. 1176–1185 (2011). <https://doi.org/10.1111/j.1523-1739.2011.01774.x>.
- ²⁹ WWF: "Searching for Sustainability – Comparative Analysis of Certification Schemes for Biomass Used for the Production of Biofuels", (2013) http://d2ouvy59p0dg6k.cloudfront.net/downloads/wwf_searching_for_sustainability_2013_2.pdf.
- ³⁰ Schütte, Philip; Franken, Gudrun; Mwambarangwe, Patricie: "Certification and Due Diligence in Mineral Supply Chains – Benefit or Burden?" (2015).
- ³¹ Derkx, Boudewijn; Glasbergen, Pieter: "Elaborating Global Private Meta-Governance: An Inventory in the Realm of Voluntary Sustainability Standards", Global Environmental Change, no. 27 (2014), p. 41–50 <https://doi.org/10.1016/j.gloenvcha.2014.04.016>.
- ³² ISEAL: "Principles for Credible and Effective Sustainability Standards Systems - ISEAL Credibility Principles", (2013) <http://www.isealalliance.org/sites/default/files/Credibility%20Principles%20v1.0%20low%20res.pdf>.
- ³³ Rüttinger et al (in press): Umwelt- und Sozialstandards bei der Metallgewinnung: Ergebnisse der Analyse von 42 Standards und Handlungsansätzen. UmSoRes Abschlussbericht Teil 2. UBA-Texte. Dessau-Roßlau: Umweltbundesamt.
- ³⁴ ISEAL: "Principles for Credible and Effective Sustainability Standards Systems - ISEAL Credibility Principles", (2013) <http://www.isealalliance.org/sites/default/files/Credibility%20Principles%20v1.0%20low%20res.pdf>.
- ³⁵ Hopwood, Philip; "Tracking the Trends 2016 - Are We There Yet?", Deloitte, (2016), <https://www2.deloitte.com/global/en/pages/energy-and-resources/articles/tracking-the-trends.html>.
- ³⁶ Sharife, Khadija; Grobler, John: "Kimberley's Illicit Process", World Policy Journal, no. 30-4 (2013), p. 65–77, <https://doi.org/10.1177/0740277513517648>
- ³⁷ Lecomte, Victoria: "The Kimberley Process, a New Actor on the Conflict Resolution Scene? ", (2015) <https://lup.lub.lu.se/student-papers/search/publication/4925566>.
- ³⁸ Steering Committee of the State-of-Knowledge Assessment of Standards and Certification, Toward sustainability: The roles", (2012), Washington, DC: RESOLVE, Inc., <http://fbbvdoc.rainforest-alliance.org/sites/default/files/publication/pdf/Toward-Sustainability-report-summary-and-appendicesv2.pdf>
- ³⁹ "NamiRo - Forschungsprojekt Für Nachhaltig Gewonnene Mineralische Rohstoffe (2015-2017) ", <https://www.namiro-projekt.org/english/>
- ⁴⁰ Rüttinger, Lukas; Heidegger, Johanna; Griestop, Laura: "UmSoRes Steckbrief Solutions for Hope Project (SfH) ", (2016) https://www.umweltbundesamt.de/sites/default/files/medien/378/dokumente/umsoress_steckbrief_sfh_finale_version.pdf

Project Background

The Strategic Dialogue on Sustainable Raw Materials for Europe (STRADE) addresses the long-term security and sustainability of the European raw material supply from European and non-European countries.

Using a dialogue-based approach in a seven-member consortium, the project brings together governments, industry and civil society to deliver policy recommendations for an innovative European strategy on future EU mineral raw-material supplies.

The project holds environmental and social sustainability as its foundation in its approach to augmenting the security of the European Union mineral raw-material supply and enhancing competitiveness of the EU mining industry.

Over a three year period (2016-2018), STRADE shall bring together research, practical experience, legislation, best practice technologies and know-how in the following areas:

1. A European cooperation strategy with resource-rich countries
2. Internationally sustainable raw-material production & supply
3. Strengthening the European raw-materials sector

Project Identity

Project Name	Strategic Dialogue on Sustainable Raw Materials for Europe (STRADE)	
Coordinator	Oeko-Institut; Doris Schueler, Project Coordinator, d.schueler@oeko.de	
Consortium	 Oeko-Institut e.V. OEKO-INSTITUT E.V. – INSTITUT FUER ANGEWANDTE OEKOLOGIE Merzhauser Strasse 173, Freiburg 79100, Germany	
	SNL Financial SNL Financial (AB) Olof Palmes gata 13, Se -111 37, Stockholm, Sweden	
	projekt consult Member of GFA Consulting Group PROJEKT-CONSULT BERATUNG IN ENTWICKLUNGS-LAENDERN GMBH Laerchenstrasse 12, Bad Vilbel 61118, Germany	
	UNIVERSITY OF DUNDEE Nethergate, DD1 4HN Dundee, United Kingdom	
	GEORANGE IDEELLA FORENING Box 43, Mala 93070, Sweden	
	UNIVERSITY OF WITWATERSRAND JOHANNESBURG Jan Smuts Avenue 1, Johannesburg 2001, South Africa	
	DMT-KAI BATLA (PTY) LTD P.O Box 41955, Craighall, 2024, South Africa	
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