

Socio-economic and environmental challenges in EU mineral supply: status-quo and fields of EU action



Synthesis from the STRADE project

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Doris Schueler, Masuma Farooki, Johanna Carstens, Nicolas Eslava,
Peter Dolega, Stefanie Degreif



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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 offers critical analysis and recommendations on EU raw materials policy.

Introduction

The current debate on the environmental and social aspects of global mining of minerals - particularly in developing and emerging countries - moves between two very different starting poles. On the one hand, high expectations and hopes are tied to the opportunities created from mining activities, namely economic growth, increase in government revenues, technology transfer, employment and poverty reduction in resource-rich countries. On the other hand, the various negative impacts associated with socio-economic and environmental effects, particularly in regions with weak governance, call for improvements. This synthesis paper summarizes the main findings from the three-year STRADE project in the socio-economic and environmental context and explores options for EU action with a strong focus on international engagement. Its aim is to clearly present the complex facts on the basis of central questions. For a more detailed examination of individual aspects, the paper refers to the numerous STRADE background documents (see STRADE documents listed in the Annex). The key questions of this paper are as follows:

Key Questions

1. *EU mineral demand: what is the status quo and what are future trends?*
2. *Where do EU minerals come from?*
3. *What are the main environmental and socio-economic topics when discussing responsible mining?*
4. *Do the many existing responsible mining standards address the main challenges adequately?*
5. *How sustainable is current EU primary mineral use with respect to environmental and social issues?*
6. *Which are basic principles and motivation for EU action?*
7. *Which are the principal approaches of action the EU can follow to increase the share of responsibly sourced minerals?*
8. *What is STRADE's perspective on EU mining?*
9. *What is STRADE's perspective on EU engagement to increase global governance?*
10. *Which is STRADE's perspective on responsible sourcing of conflict minerals?*
11. *What is the state of play in responsible sourcing of minerals beyond conflict minerals?*
12. *Which is STRADE's perspective on the artisanal and small-scale mining sector?*
13. *What is STRADE's perspective on EU companies' Corporate Social Responsibility?*
14. *Do we need a globally accepted international responsible mining standard?*
15. *What are the current challenges and perspectives of materials for green technologies?*
16. *How does the EU address selected environmental challenges (tailing dam management and legacy mines)?*
17. *What are the main conclusions in terms of EU action?*

1. EU mineral demand: what is the status quo and what are future trends?

The EU primary demand of minerals is around a quarter of global primary demand in 2017. While the mineral demand of the EU is expected to remain stable for many of the minerals in the coming years, a continuous increase in demand is expected globally – with China expected to account for nearly half of global demand in the medium term. In addition to this overall trend, it must be taken into account that the global transition to a fossil-free future will increase the demand for many metals and minerals to varying degrees. Particularly, higher demand increases for minerals of greater relevance for green technologies, within the overall demand, are expected for lithium, cobalt, indium and neodymium – globally and in Europe. For most other metals, e.g. aluminium and iron-ore, the demand in traditional sectors, e.g. construction, machinery and infrastructure, will remain the most relevant demand driver^{1,2}.

2. Where do EU minerals come from?

While raw materials mined in the EU only supply a minor share of European demand, European recycling plays an important role in the European material supply structure. Nevertheless, imports still meet a high share of European demand. These include not only the imports of ores and concentrates, but also imports of downstream products: metals, alloys, intermediate and finished products.

The EU mining covers only a small share of EU's demand of primary minerals. The following ore exporting countries play an important role in European supply: Chile (copper, lithium), Peru (copper), Brazil (iron), Guinea (bauxite), Indonesia (tin), South-Africa (platinum), Philippines (nickel); USA (zinc, molybdenum), Australia (zinc, titanium), Bolivia (zinc), Turkey (magnesium) and DRC (cobalt, tantalum, tin, gold), Gabon (manganese), Canada (titanium), India (titanium), Norway (titanium) and China (rare earths). The list shows that developing and emerging countries have a key role in EU mineral supply. The EU imports of processed goods frequently originate from other regions that in turn have imported the raw materials from the above mentioned countries. Particularly, China and Russia play an important role in the supply of intermediate products to the EU's manufacturing industry.

Policy Brief on EU Raw Material Flows

In the global mining sector, EU-headquartered mining companies account for a small share of global production, compared to mining companies based in Canada, China and Australia. After Brexit, the share of EU-based mining companies will further decrease significantly, since the majority of EU mining companies are listed on the London Stock Exchange or head-quartered in the UK. For example, ignoring the coal producers and the integrated steel producers, the total revenues of UK headquartered mining companies in 2017 was €45 billion, while the revenues of companies headquartered in the rest of the EU were only around half of that (€27 billion). The EU mining tech sector, which provides mining equipment, including environment technology, is well represented in the international mining business and will be a relevant player even after Brexit.

¹ World Bank (2017). The Growing Role of Minerals and Metals for a Low Carbon Future, <http://documents.worldbank.org/curated/en/207371500386458722/pdf/117581-WP-P159838-PUBLIC-ClimateSmartMiningJuly.pdf>

² De Koning, A.; Kleijn, R.; Huppel, G.; Sprecher, B.; van Engelen, G.; Tukker, A.: Metal supply constraints for a low-carbon economy?; Supporting Information for the article; Resources; Conservation & Recycling 219, 2018

3. What are the main environmental and socio-economic topics when discussing responsible mining?


Despite large improvements in national legal and regulatory requirements and industry engagement and manifold examples of successful implementation of responsible mining practices in the last decade, mining in the 21st century can still be greatly improved, particularly in countries weak on governance, monitoring and sanction mechanisms. The following paragraphs shortly outline the three main challenges: 1) environmental damage, 2) community and work-forces related issues and human rights, and 3) economic contribution from mining as starting point for poverty alleviation and more diversified economic development. Related to these issues, many communities in regions with weak governance have experienced the negative consequences of mining activities and/or poor governance, corruption and mismanagement of mining revenues. With this legacy, the mining sector currently faces widespread mistrust and rejection from communities in many parts of the world; mining companies need to make concerted efforts to regain this trust. Particularly in some regions in Latin America, the lack of acceptance of mining is also a risk for national economics, which heavily rely on mining revenues.

Environmental issues. The most relevant environmental impacts mainly occur at poorly managed mining sites – especially groundwater contamination by acid mine drainage and tailing dam failures, soil contamination from dust and erosion, damage of ecosystems, loss of agricultural land and ecological disaster from tailing dam bursts. These need to be tackled by international, EU and national policies. Another frequent hot spot is the intensification of water stress by mining activities. Due to lack of environmental management, the ASM sector can cause even more environmental damage than the LSM sector. A serious challenge in the artisanal small-scale sector (ASM) sector are the massive mercury emissions from gold extraction.

 *Policy Brief on Environmental Challenges*

Work-forces related issues and human rights. In regions with poor governance, the large-scale mining sector's (LSM) most salient human right risks relate to land (mainly relocation and eviction) and to environmental impacts from area clearing measures and contamination (mainly from mining waste and tailings storage). They can greatly affect local communities. In ASM, labour-related human rights problems are prominent, e.g. child and slave labour, bad working conditions, mercury contamination and environmental destruction from mining operations. Extortion of ASM operations by criminal groups and financing of armed conflict is another pressing issue, particularly in the Democratic Republic of Congo.

 *Policy Brief on Socio-Economic Challenges*

Economic contribution: In contrast to the negative impacts outlined above, in many developing countries, mining is one of the few economic sectors with the potential to provide short and medium-term economic development and government revenues. Presupposing sound governance and a well-planned use of revenues, it is hoped that the mining sector can increasingly be harnessed for poverty alleviation and through linkages, support diversified economic development. Progress in this field is severely undermined by tax avoidance and base erosion and profit shift which is a serious cross-sectoral challenge. Success with building linkages and economic diversification also has remained limited.  *Report on cooperation with developing and emerging countries*

► **Recommendation:** For most resource-rich developing countries, the mineral sector is expected to serve as a major driver of economic growth and employment, and resource revenues can be important for government budgets. The EU must acknowledge that economic priorities may at times outweigh socio-

environmental priorities for these countries and therefore the EU should consider these different perspectives in its policy dialogues with its partners.

► Recommendation: STRADE acknowledges that tax avoidance is a highly relevant issue for the sustainable development agenda, particularly in Africa. Though this cross-sectoral issue is out of the project's focus, STRADE recommends that the EU continues its work on this issue, in close collaboration with OECD and affected developing countries.

► Recommendation: The STRADE dialogue has shown that the mining sector's contribution to the African industry and economy, including mineral processing value chains, is of central importance for African partners. Some stakeholders express the need to align the African Mining Vision and the EU Raw Materials Initiative with the African focus on industrial development; to create more linkages within the African economy and hereby support the achievement of the SDGs.

► Recommendation: The restriction on imposing export taxes on raw materials as negotiated by the EU under the Economic Partnership Agreements is considered highly controversial by some African stakeholders. They regard domestic protection as necessary to build African national mineral processing value chains. This viewpoint, the need to develop domestic processing capacity, must be taken into consideration in political dialogues.

The above outline of the main discussion points largely addresses mining in regions with weak governance, outside Europe. This is not to suggest that there are no problems or issues within Europe. However, due to well-developed governance structures, the challenges in Europe are much smaller; therefore, the main focus of this paper is on challenges from mining outside the EU.

4. Do the many existing responsible mining standards adequately address the main challenges?

The STRADE research findings indicate that it is the successful and broad implementation of the already existing responsible mining schemes that is crucial, both of voluntary and regulatory requirements. The analysis of the various initiatives in the extractive sector shows that most environmental challenges³ and most potentially negative impacts from mining on workers and communities are widely addressed by many standards that relate to LSM and ASM sites. This is valid for 'Western' initiatives as well as for Chinese initiatives. The landscape of standards is still scattered, and a globally-accepted guideline with an agreed minimum standard for responsible mining principles and good governance has not yet evolved. Nevertheless, the successful implementation of existing standards must be given the highest priority rather than the elaboration of further frameworks, as broad implementation is still pending. This refers particularly to regions with weak governance where, so far, the existing frameworks have only had limited effect on the overall performance of the mining industry. These standards do not reach many of the weak performers, such as state-owned enterprises in countries with weak governance, ASM, private mining companies and many mines in China.

³ The STRADE Policy Brief on environmental initiatives concluded that most environmental challenges are widely addressed by the described standards that relate to LSM and ASM sites. Only the issues of short- and long term radiation exposure from mining waste and radioactive air and water emissions should be complemented.

Another important consideration in future dialogues with developing countries is that most responsible mining schemes have been developed by industrial countries' stakeholders or under the strong influence of industrialised countries. Future activities aiming at implementing responsible mining practice need to more clearly take a partnership approach, and the EU must acknowledge that economic development is often the highest priority of developing countries. One-sided EU requirements on environmental and social issues without offering support for an increasing economic contribution for developing host countries are not appropriate.

- ▶ Recommendation: A large number of good best-practice standards for responsible mining have been developed in recent years. The major challenge is their implementation. Where the EU engages for further activities and implementation strategies, partnership approaches are required, with strong participation from developing and emerging countries.

5. How sustainable is current EU primary mineral use with respect to environmental and social issues?

Since the EU sources a large share of its raw materials and many intermediate products globally, and accounts for nearly 25% of global minerals use, it has a strong impact on the global mining sector. Although efforts towards responsible mining practices began some 20 years ago, and a large number of initiatives have emerged over the past decade, there is still no comprehensive overview of the state of sustainability for the global mining sector. There are no cross regional/international reviews, studies or analyses, only country focused ones. No systematic global inventory of tailing storage facilities, which represent the greatest environmental hazard potential, has been constructed. A major obstacle for the creation of such a data repository may be the large number of mines; a systematic recording and transparent evaluation would be required.

- ▶ Challenge: Although the global mining sector provides the inputs for many economic sectors, there is still no reliable and comparable data for its global environmental and social impacts. This is true for ASM, as well as for LSM and medium-scale mines.

Industrialized mining countries: It can be assumed that mining activity in industrialised countries now largely meets good standards and that the mining industry has made great efforts to improve its image and its performance over the past 20 years – although accidents and social problems still occur at mine sites in industrialized countries.

International LSM sector: Experts interviewed strongly assume that there has been significant progress in large-scale mining in developing and emerging countries. This applies in particular to the larger international companies that have developed their own standards (through associations such as ICMM and TSM), receive finance from financial institutions (compliant with the Equator Principles/IFC Performance Standards) and/or are listed on stock exchanges and therefore required to also comply with the latter's sustainability criteria. Nevertheless, further efforts on the part of these companies are still required, as some incidents in recent years have shown⁴.

⁴ Most of the initiatives evaluate the mining companies according to existing company policies on the standard related aspects or on the reporting of the companies, while the actual operational performance and impacts are only rarely

Mining companies below the radar: There is very little transparency around non-listed companies operating in regions with weak governance, especially domestic companies, those privately held or listed at small stock exchanges, state owned enterprises and those that do not receive financing from Equator Principle compliant institutions. The incentives for these companies to comply with the current standards will decrease further as the standards become more ambitious.

- ▶ Challenge: A highly relevant global challenge is to reach mining companies below the radar which operate in regions with weak governance, especially domestic companies. Few incentives exist for them to follow best practice standards.

China's international mining activities, particularly in developing countries, have had a bad reputation in the past. However, the sweeping judgement that Chinese mining companies do not care about local social and environmental issues, is no longer valid. Though there are still badly managed Chinese mine sites, there is an increasing number of Chinese foreign mines which are managed similarly or even better than mines by the Western companies. The Chinese government and the China Banking Regulatory Commission principally support this trend, since they do not want the long-term and strategically relevant Belt & Road Initiative to be overshadowed by the damaging reputation of Chinese foreign mine sites, endangering partner states' acceptance of Chinese outbound activities.

 *Policy Brief on China's approach towards responsible sourcing*

- ▶ The EU must recognize that Chinese foreign responsible mining practices are improving.

6. Which are basic principles and motivation for EU action?

Importing minerals may be perceived as allowing the EU (and all other mineral importers) to transfer the burden of environmental and social impacts of mineral production to the host country. The sustainability burden is transferred to local communities and governments, which are often ill equipped to deal with them, if regulations and/or implementation are still lagging. This is contrary to the values of the EU and is reflected in various motivations for a commitment to responsible mining & sourcing which are described in the following paragraphs.

The European Union and its Member States have committed themselves to a range of international conventions that have relevance for raw materials supply chains. These include the Universal Declaration of Human Rights and the conventions of the International Labour Organization. While these conventions have a binding character only for activities within the jurisdiction of its signatories, they also provide a moral base for the EU's economic activities in other parts of the world. With respect to the raw-material sector, the EU committed itself to actively contributing to a more responsible sourcing approach from other world regions. This is, amongst others, documented in the European Raw Materials Initiative (RMI), the EU "Trade for all" concept, the EU conflict mineral legislation and the EU financial support for the OECD in its work on due diligence frameworks for minerals from conflict-affected and high-risk areas. These policies and activities of course significantly overlap with general development goals, in particular the Sustainable Development Goals (SDGs).

assessed. While it is one thing to compare companies' stated policies it is quite another to assess how far they are meeting such objectives in a fair, objective and informed way.

► Recommendation: The RMI has repeatedly been under criticism for missing coherence with development policy, especially with regards to developing countries' sovereignty over their natural resources and the introduction of measures to capitalize on their raw materials to develop their economies. STRADE recommends revisiting and updating the RMI by finding a more appropriate balance between measures to secure undistorted access to raw materials and acknowledging development partner country needs.

 *Policy Brief on EU's responsibility in mineral supply chains*

 *Report on cooperation with developing and emerging countries*

In addition to the principal moral responsibility for EU's mineral supply chains, the EU must also honour its historical legacy where a large number of developing raw material producing countries are former colonies of EU Member States. This legacy includes the continued dependence of some former colonies on mining and the aftereffects from environmental damage from abandoned mines.

► Recommendation: The EU must acknowledge its historical legacy around mineral extraction that has shaped the politics and the perceptions of many developing countries. Therefore, current diplomatic engagement has to respect the legitimate desire of resource rich countries to use their natural resources as the catalyst to drive transformative, intergenerational social and economic development in the longer term.

► Recommendation: Many countries consider their natural resources as a 'national wealth', important for their economic development. Therefore STRADE recommends that EU embassies build up strong in-house mineral sector competencies where they are dealing with resource-rich countries.

EU mining and mine tech industries favour a global level playing field with best-practice standards for economic reasons: high global standards implemented at all mining operations would offer European industry the best competitive conditions and opportunities whilst preventing the distortion of competition from competitors who do not adhere to the use of environmental technologies.

► Challenge: The European mining sector considers global high standards as a prerequisite for fair competition as well as becoming an important and growing market for its mining tech sector. However, we are far away from achieving such a universal standard.

EU consumers are often highlighted as one potential driver for the implementation of high standards, through their demand for responsible minerals. But it is currently not evident that strong consumer demand for responsible minerals exists, even in products where there is a direct connection with the mineral, such as electronics. However, civil society's protests against certain practices have been seen to impact the brand and reputation of companies using non-responsibly sourced material, as the recent outcry about child labour in cobalt demonstrates. It remains unclear how strong the EU consumer demand for responsible minerals across products is at this time.

EU downstream companies using minerals and metals include both large-scale multinational companies and SMEs. As SMEs need to focus their limited resources on core businesses and regulatory compliance, it is unlikely they will engage in responsible mineral sourcing unless customer or regulatory demands mandate it. While large companies can dedicate more resources to responsible minerals sourcing, the lack of a market incentive to do so has so far limited their engagement on the matter. The companies that are working towards the implementation of full traceability, and in some cases implementing closed-pipe supply chains, are not doing so for commercial reasons as product differentiation based on the sustainability of minerals is not

relevant to consumers. Instead, the main incentive is civil society's campaigning has an impact on a company's reputation, brand value and even share prices, something that can be of extreme importance to certain large companies.

 [Report on Conflict Minerals and Due Diligence Schemes](#)

7. Which are the principal approaches of action the EU can follow to increase the share of responsibly sourced minerals?

There are a number of options to increase responsibly sourced minerals for the EU, one of which is to expand European domestic mining. Given the current low share of European mining in overall European demand for mineral ores, only limited increases can be expected for various reasons (geological availability, regulatory inconsistencies, widespread rejection of mining in many European regions etc.). However, the development of innovative technology by the European mining technology suppliers is of great importance. Environmental technologies developed for European mines can also be used globally and make the international mining sector more environmentally friendly.

 [Report on Supporting the EU mineral sector](#)

Another complementary approach is to reduce the primary demand by recycling, substitution and greater resource efficiency; Europe can draw on extensive know-how and competence in technology development in all three fields and has been particularly successful in the recycling sector. For steel, copper and aluminium, EU recycling provides much larger volumes than EU metal and ore imports.

 [Policy Brief on EU Raw Material Flows](#)

► Recommendation: European recycling plays an important role in the European material supply structure and reducing primary demand by increasing recycling efforts should continue to be supported by the EU.

► Challenge: While recycling and circular economy efforts should continue, primary raw materials still meet a high share of European demand and will also be indispensable in future.

Strong governance structures in mining countries are key to ensure that mining is carried out in a responsible and sustainable way. Problems concerning human rights, workers' health and safety, the environment and surrounding communities usually appear in countries where governance structures are weak. Even where the legislative and regulatory framework is stringent, treaties concerning various issues have been signed, and due diligence and/or certification schemes might be compulsory, the effective implementation of all these measures will depend on monitoring and enforcement capacities, especially on the local level. The EU and particularly the Member States are active in the support of better governance in developing and emerging countries and this support should continue.

 [Report on cooperation with developing and emerging countries](#)

Responsible sourcing: Responsible sourcing by European downstream companies is a key European lever to promote responsible mining across the sector. The *EU conflict mineral regulation*, which implements the *OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas* and which will come into force in 2024, has a pioneering role here. In addition, beyond conflict minerals, there are numerous initiatives aiming

to establish due diligence schemes for other minerals. Certification systems are an important instrument here. Principally, due diligence is a short to medium term solution and in the long run should be replaced by better governance by mining countries themselves. It should also be borne in mind that the implementation of due diligence schemes is yet in a very early phase, so the successful implementation is still very limited.

 [Policy Brief on socio-economic initiatives](#)

 [Report on Conflict Minerals and Due Diligence Schemes](#)

International dialogue and cooperation for improved governance and global joint efforts for responsible sourcing are indispensable: The large number of existing international initiatives also points to the high demand for such sourcing, while at the same time the difficulty of bundling and coordinating the many activities along complex value chains. Of particular importance are the coordination of existing initiatives and solution-oriented international actions on specific aspects. Cooperation with China is an important element here. Bilateral cooperation between the EU and resource-rich countries is already taking place at various levels: policy dialogues, technical and scientific cooperation, and cooperation on governance issues and legislation. These include raw-material partnerships and the free trade agreements, which will also take more account of environmental and social aspects in future.

 [Policy Brief on platforms for strategic dialogue](#)

 [Report on cooperation with developing and emerging countries](#)

► Recommendation: A key task of EU and Member States engagement for responsible mining & sourcing is the support of international best practices. To do this, the EU should build in-house capacities in mineral sector knowledge and competency to support a wide variety of actions such as trade negotiations, diplomatic engagement, due diligence, international development assistance and investor promotion.

8. What is STRADE's perspective on EU mining?

While domestic supply carries the least risk of disruption and generally ensures that most mineral production takes place under best practice standards⁵, until recently there was little economic imperative to increase mineral production within the EU Member States from an access to supply perspective – at least European downstream industry did not raise concerns about the physical availability of materials and was just concerned with price volatility and the price increases faced during the commodity price boom of 2003-2011. However, in view of the current trade wars and sanctions introduced by the US and other parties, STRADE sees a rising strategic risk to the EU in accessing international raw materials supply. Another relevant economic issue is local employment in the mining sector, often located in geographical areas where there are other limited sources of alternative employment.

 [Report on Supporting the EU mineral sector](#)

Maintaining EU mineral production provides an important political and strategic purpose, which is of high relevance for the international dialogue. The perception of EU 'exporting mining pollution' and 'not in my backyard' need to be countered by the EU continuing to host mineral production and to do so under best practice standards. By employing responsible mining practices, the EU provides the correct political message to other countries; that it is following the same standards that it is asking others to follow.

⁵ STRADE does not suggest that further improvements are not required, e.g. there are remaining challenges such as possible accidents (e.g. tailing dam failures), pollution and social conflicts in the EU mining industry. But compared to international mining sites, European are very advanced in responsible mining practice.

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- ▶ Recommendation: Mining activity in the EU needs to continue, to maintain its international credibility in demanding global responsible mining. It is also important that the EU does not transfer all its social and environmental burdens from mining to third countries. Further the EU mining tech sector continues to have the opportunity to develop advanced technologies - including environmental technologies - in the EU.

To increase mineral production in the EU, greater attention needs to be given to attract international investors, whereby increased interaction with Member State mining agencies/ministries will allow for a market-led improvement within these jurisdictions. The EU's role is to act as facilitator for those Member States interested in promoting mineral activity, thus respecting the sovereignty of governments over their mineral resources.

- ▶ Recommendation: A key issue for increasing EU mining is attracting international investors. STRADE recommendations focus on marketing and investment promotion strategy, with the focus on data and information needs.

Social license to operate is one of the biggest challenges in initiating new projects in Member States (and globally) and without a more positive image being developed, this will continue to remain a challenge. To address this, a public awareness campaign is recommended, to educate citizens on how mining practices have progressed in Europe; the community engagement models that are employed; the stringent regulations on protection of the environment that are applicable in the EU. These need to go beyond the stating of regulations that exist and move to showcase the results that have been achieved at operating mines.  [Report on Supporting the EU mineral sector](#)

- ▶ While it may be felt by some stakeholders that the improvement of the public perception of mining is the mining industry's responsibility, given the importance of minerals and metals for the health of European economies, STRADE recommends the EU consider creating citizen awareness campaigns as part of its responsibilities.

9. What is STRADE's perspective on EU engagement to increase global governance?

As already mentioned, better governance in host countries is a key factor for the broad implementation of responsible mining. Good legislation and functioning mechanisms for monitoring and sanctioning non-compliance will in principle reach all mining companies, even those that have not yet committed themselves to responsible mining engagement. In the long run, better governance structures can lead to a situation where certification schemes and due diligence schemes are needed less and less.

Since improved governance is a government task, this is a primary field of activity for the EU and the Member States in contrast to responsible sourcing, in which the companies that purchase materials are the main actors.

Some Member States have good competence in this field. STRADE therefore recommends strong coordination with the competent agencies of the Member States and continuity of ongoing activities. The range of topics is broad: fit-for-purpose legislation, the development of local governance structures, building of competencies for monitoring and enforcement of the regulatory framework, focus on issues specific to artisanal and small-scale and large-scale mining and revenue management including measures against tax avoidance and profit shifting. More specific recommendations related to Africa and Latin America are given in the *Report on EU cooperation with resource-rich developing and emerging countries*.

 [Report on cooperation with developing and emerging countries](#)

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- ▶ Recommendation: STRADE recommends that the EU capitalises on the manifold competencies in Member States agencies in the field of international resource governance and general governance support and closely cooperates with these agencies. STRADE recommends to the Member States to continue and extend ongoing programmes and to coordinate their activities with the EU and other Member States.

In addition to bilateral and regional cooperation, the extent to which global initiatives can effectively address global challenges is also being intensively discussed. An important governmental platform for regular exchange is the Intergovernmental Forum (IGF), to which numerous resource-rich emerging and developing countries belong. A global platform that brings together the most diverse actors along the numerous value chains does not yet exist. Instead, there are many initiatives that bring together actors from specific sectors or for specific metals. It is questionable whether a new central international organization would actually effectively advance international governance cooperation. An alternative approach would be the creation of solution-oriented platforms.

 *Policy Brief on platforms for strategic dialogue*

- ▶ Recommendation: STRADE is sceptical whether a new central institution for global resource governance will be able to effectively advance responsible mining. Alternatively, solution-oriented platforms, e.g. a forum proposed by UNEP for tailings dam management, are possible approaches.

10. Which is STRADE's perspective on responsible sourcing of conflict minerals?

Background: The EU conflict minerals regulation will come in force in 2021 and will involve (i) a mandatory certification system for importers, smelters and refiners; and (ii) voluntary reporting on sourcing practices by bigger EU manufacturers and sellers. It recognises that funding of armed conflicts from mineral extraction revenue is not limited to DRC and adjoining countries and must be addressed with a global scope. It defines 'conflict-affected and high-risk areas' as areas in a state of armed conflict, fragile post-conflict as well as areas witnessing weak or non-existent governance and security, such as failed states, and widespread and systematic violations of international law, including human rights abuses. Since the US-Dodd Franck Act which requires US-stock-listed companies to report their use of conflict minerals from the DRC or bordering countries is on hold, the EU is the only region which has created a legal framework on sourcing of conflict minerals and transferred the basic approach of the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas into a directive.

Impact of legal and voluntary initiatives: Despite significant efforts of implementing responsible supply chains for conflict minerals, the impacts of these legal and voluntary initiatives are controversially discussed. It is, as of now, unknown whether related existing policies are making things better or worse and whether measures have impacted the funding and operational ability of armed groups that commit human rights abuses. A serious risk of the regulation is that it could possibly cause unintended losses of jobs and income in some segments of the ASM sector, as a result of potential business responses that avoid sourcing raw materials from any conflict-affected and high-risk areas, and subsequent market shifts to the more regulated LSM sector.

- ▶ Recommendation: STRADE recommends to the European Commission to undertake a systematic study that assesses whether implementation of conflict-free standards positively impacted the levels of human rights abuses in Eastern DRC, limited the funding of armed groups committing human rights abuses (including Public Forces), and whether any such gains created were not offset by the impacts of the resulting temporary de facto embargo on Congolese ASM minerals.

- ▶ These impact assessments should be regularly repeated and form the basis for decisions regarding potential modifications of the policy. This includes central decisions such as the extension of the policy to other minerals or geographies, mitigation of policy negative impacts, and, if deemed appropriate, policy termination.

Dissemination of information: More specific recommendations on EU support for a successful implementation (it should not become a simple paper work and box ticking exercise) are given in the report “*Successful implementation of conflict mineral certification and due diligence schemes and the European Union’s role: lessons learned for responsible mineral supply*”. These include a number of recommendations on the provision of information to the upstream actors on the ground, particularly the ASM sector, and the EU down-stream sector, particularly the SME sector.

- ▶ Recommendation: Given that successful implementation of the EU CMR requires a good level of knowledge, both downstream and upstream, particularly for actors with less resources (ASM sector, European SMEs), a detailed dissemination strategy needs to be employed.

 [Report on Conflict Minerals and Due Diligence Schemes](#)

Assessments of underlying standards: Currently, conflict-free certifications in the DRC are almost entirely based on one certification scheme⁶ for three out of the four conflict minerals, generating substantial risks of systemic failure. With regards to the key role these schemes have, the EU should undertake periodic assessments of the functioning, integrity, and responsiveness of the most relevant standards.

 [Report on Conflict Minerals and Due Diligence Schemes](#)

- ▶ Recommendation: The successful implementation of the EU CMR fully relies on functioning third party certification schemes. Therefore, the EU must regularly assess their effectiveness.

EU-China cooperation: Close cooperation between the EU and China plays a key role in the successful implementation of responsible sourcing and the real improvement of local conditions. On the one hand, China is the largest importer for raw materials and has many traders and large mining companies in the DRC; on the other hand, Europe imports many semi-finished and finished products from China. Cooperation with China must therefore cover both the mining industry itself and the supply chain.

 [Policy Brief on China’s approach towards responsible sourcing](#)

- ▶ Recommendation: Given China’s importance as an origin for raw-material for the EU, and China’s action towards responsible supply chain management, it has become an important partner in some international dialogues. It is essential to continue this dialogue despite the challenges such as language barriers, different economic and political systems, different transparency approaches, lack of information and cultural differences.

Complementary ASM support projects: As outlined above, a complementary approach is urgently needed to avoid potentially negative side effects from the recent EU regulation on conflict minerals on local workers and communities. An example for this is the multi-stakeholder initiative *European Partnership for Responsible Mines (EPRM)* with EU participation, aiming at complementing

⁶ International Tin Supply Chain Initiative (iTSCi): it focuses on 3T Minerals and monitors more than 1,200 ASM sites in the DRC and Rwanda. It does not include gold.

responsible sourcing of conflict minerals with on the ground support of ASM workers and local communities. Members are from industry, civil society and EU MS⁷.

- ▶ Recommendation: STRADE recommends close cooperation with the European Partnership for Responsible Minerals (EPRM) and further initiatives aiming at supporting ASM operations affected by the regulation.

Reducing additional costs for miners: As the EU CMR is not a voluntary premium certification with a built-in mechanism to compensate miners for the costs incurred for compliance, there is a double risk of 1) the lowest end of the supply chain, i.e. the miners, being burdened with all or the majority of the costs and thus lowering their anyway poor income further, and 2) the miners, in order to avoid this, turning to alternative buyers to sell their production.

- ▶ Recommendation: The funding of supply chain R&D, with the objectives of bringing down the costs of certification for all should be considered. This includes the goal to develop mechanisms for a fair sharing of costs for the implementation of the EU CMR along the supply chain.

11. What is the state of play in responsible sourcing of minerals beyond conflict minerals?

The expansion of due diligence activities along the supply chains will become significantly more important in the coming years. The main drivers of these activities are, on the one hand, civil society, which demands products manufactured in a socially and environmentally compatible manner, and, on the other hand, companies themselves, which are concerned that they are not associated with environmental and social problems in their supply chain. Though the implementation is still in early stages, the activities have already raised awareness along the supply chain considerably.

Due diligence schemes might be a short to medium term solution and in the long run should be replaced by better governance by countries themselves. Whereas the support of improved governance is a task of EU and MS, the approach of responsible sourcing of minerals relates to European businesses which have to make sure that they source responsibly mined minerals. Both approaches are complementary.

- ▶ Recommendation: Currently, the practice of responsible sourcing beyond conflict minerals is still at a very early stage. EU and Member States should - besides continuing their engagement in governance support - also support EU businesses to implement responsible sourcing practices.

The challenge for EU downstream companies is to make sure that only companies which perform responsible mining and sourcing practices contribute to their, often very long and complex, supply chains. Currently, large companies have a good level of 'control' on their direct suppliers; this includes dialogues and continuous joint learning processes. The further upstream value chains are largely beyond direct control and require that each step in the value chain receives compliance confirmation from the upstream supplier. The risk is that due diligence is just becoming a box ticking exercise and is not seriously pursued at every step of the value chain. In order to exclude fraud, technology-based approaches such as block chain are discussed. Here too, however, fraud cannot be ruled out during initial data entry.

Though many standards, guidelines and principles on responsible mining exist, only very few effective certification systems have been available for the responsible sourcing of iron ore, base

⁷ DG DEVCO is an observer to the EPRM.

metals and technology metals besides gold along the whole supply chain. The Aluminium Stewardship Initiative (ASI) will be the first system dealing with a base metal and will launch its first certifications in 2018. However, the degree of success will only become apparent after a few years of implementation. Particularly, Guinea's mines, where most of the bauxite used in the EU comes from, do not yet intend to pass an ASI audit. FairMined and FairTrade focus on ASM and only cover niche markets, mainly in the jewellery sector. For cobalt, more information is given in the section below on materials for green technologies.

Also for responsible sourcing beyond minerals, industrial mining and ASM must be considered together as already outlined in the section on conflict minerals; discrimination against artisanal and small-scale mining can lead to drastic social problems and endanger the livelihoods of ASM miners.

In the long term, responsible sourcing must aim to bring about changes on the ground. If the initiatives only serve green washing, the goal is missed. Similarly, if only some companies focus on responsible sourcing but global production does not improve its average performance level, the objectives of a globally responsible mining sector is not achieved. This would happen where companies seeking to engage in responsible sourcing prefer to buy certified raw materials only, while non-certified raw materials continue to be produced without following best practice standards and are sold to purchasers who do not value responsible sourcing.

Another important point to rule out market disparities is to include China in international activities for responsible sourcing, since China's demand accounts for almost half of global primary production for many raw materials and large quantities of steel, base metals and technology metals are imported by the EU from China as intermediate or final products. EU engagement for responsible supply chains for these metals should therefore be tackled in dialogue with China.

► Recommendation: Responsible sourcing from ASM beyond conflict minerals faces similar challenges as for conflict minerals and recommendations go in the same direction: supporting the implementation of successful supply chain management schemes; ensuring that real changes occur on the ground and are not offset by negative market shifts; there is a need for cooperation with China.

Due diligence does not only relate to responsible mining but also to the careful management of the capital entrusted to mineral supply chain actors by investors.

► Recommendation: The field of responsible raw-material investment is still underexplored. Compared to the sustainable finance approaches in the fields of climate change and non-fossil energy carriers, no concepts are yet available for mining. EU-funding for in-depth research could stimulate such developments.

Beyond this complex background, controversial debates are taking place if a binding regulation for all minerals and including all priority topics (human rights, environment) are necessary to enforce responsible sourcing and to also take on board those actors who have not yet shown any effort. STRADE recommends that lessons learnt from the implementation of the Conflict Minerals Regulation, including possible negative effects, be carefully evaluated before further regulations are prepared. Meanwhile, the EU and Member States agencies should support EU companies which work locally with miners and develop new cooperation models. In the mid-term, when more responsibly sourced minerals will be available, the EU can set an example by integrating responsible mineral sourcing in its public procurement rules.

 *Policy Brief on socio-economic initiatives*

 *Report on Conflict Minerals and Due Diligence Schemes*

12. Which is STRADE's perspective on the artisanal and small-scale mining sector?

While the overall contribution of ASM sourced minerals in the EU supply chain may be low⁸, the associated socio-environmental risk is much higher than with minerals from mechanised production. This is mainly due to 1) the high degree of informality of the sector and lack of regulation; 2) the mining practices applied, which may be highly damaging to the environment as well as health and safety of the miners; and 3) the vulnerability of the sector to being exploited by criminal groups, armed forces and conflict parties, which comes along with severe human rights abuses.

ASM activity is, in the vast majority of cases, poverty-driven and thus crucial for many communities and an objective that aims for such activity to disappear is not an option.

 [Policy Brief on ASM and EU cooperation](#)

- ▶ Recommendation: The ASM sector is a vital part of the mineral economies of some partner countries - it provides millions of rural jobs and contributes significantly to local economic development and poverty alleviation. Local populations and economies will thus suffer from discrimination against the ASM sector. STRADE recommends to the EU to engage on improving the ASM sector's conditions and not to avoid ASM minerals.

There is no simple solution for the very diverse ASM sector. It must become part of integrated long-term rural development schemes, where appropriate also an integration within large scale mining programmes should be considered. Certification and due diligence schemes are in a very initial stage and still have to prove their effectiveness. Examples of Fairtrade and Fairmined certified artisanal mining cooperatives show, however, that responsible production and sourcing from ASM is possible. Specific support could be directed at: ASM formalisation; adequate policy, legal and regulatory frameworks; local governance capacities; organisation of miners; improving environmental performance; capacity building and technical advancement; access to finance and legal markets; gender equality; and fair ASM-LSM relations. Due to the diversity of the sector, it is important to study the specific characteristics of the site(s) targeted by a support programme and find tailor-made solutions to the specific challenges together with the miners.

- ▶ Recommendation: STRADE recommends to the EU and Member States to include ASM within their long-term rural development programs.

The EU and its Member States are in a good position to provide funding support and technical assistance for the ASM sector. Some Member States agencies have strong expertise in this field, and ongoing support should be continued and even extended considering that the global ASM sector is still increasing rapidly. This trend is likely to continue as ASM is often the only alternative to agri- and horticulture in these areas, and thus many people who lose their farm/grazing land or cattle in the wake of climate change, land grabbing or simply overpopulation, turn to ASM.

 [Report on cooperation with developing and emerging countries](#)

⁸ Even though ASM is estimated to account for 15 – 20 % of global non-fuel mineral production (e.g. approx. 25 % of gold, tantalum and tin, 20 % of diamonds, 80 % of sapphires, 6 % of tungsten, 4 % of iron ore, 3 % of lead, 1 % of zinc, and 0.5 % of copper), it is – due to the complexity of supply chains and the lack of transparency – not clear how much of this ends up in Europe.

► Recommendation: For Africa, ASM should become an integrated part of Africa-EU programmes targeting wider economic growth and employment opportunities. EU and Member States support for improving conditions in ASM should be continued and extended.

► Recommendation: For Latin America, STRADE recommends that the EU interventions in the ASM sector be continued in areas of specific European ASM-related expertise (such as environmental impact mitigation, formalization and certification).

► Recommendation: Additional new ASM support areas are conflict mineral regulation accompanying measures and *Minamata Convention* implementation (mercury reduction).

13. What is STRADE's perspective on holding EU businesses responsible?

As noted above, EU head-quartered mining companies play a small role in global production, particularly in regions with weak governance and even less after Brexit and the exclusion of London listed companies. The EU mining tech sector is globally active, but mostly has the role of supplying mining equipment. Consequently, STRADE recommends a cross-sectoral approach to improve wider EU companies' responsibilities, instead of initiating larger programmes targeting mining and mining tech industries specifically, such as the ombudsmen installed by the Canadian government for Canadian global mining activities. The following sections outline the need for and suggested implementation of such an approach.

The EU downstream sector, which sources minerals from regions with weak governance, is much more relevant in terms of EU businesses' responsibilities. One key entry point to address the supply chain of EU downstream companies is the establishment of human rights and environmental due diligence requirements. The most prominent example in the raw material sector is the conflict mineral regulation, which was already discussed above. It must be borne in mind that the risk of negative impacts on the ground – as discussed for the conflict mineral legislation - is principally the same for all human rights due diligence schemes.

Currently, there is a growing trend among European and other countries to legally mandate either the establishment of such due diligence processes and/or reporting on the same. Examples are the UK Modern Slavery Act, the French Vigilance Law or the California Transparency in Supply Chains Act. Similarly, many export credit agencies already conduct comprehensive due diligence when reviewing projects and transactions, including in the mining sector. The before mentioned legally binding requirements, which apply across sectors, are currently mostly limited to larger companies or companies of great public interest. However, since due diligence requirements encompass the company's value chains, they are likely to be handed down to suppliers and business partners not directly affected by the law.

► Recommendation: STRADE principally acknowledges that a cross-sectoral approach to mandate human rights and environmental due diligence may be more effective than regulating every economic sector separately. Therefore the STRADE recommendation to the EU is to explore the lessons-learnt from existing due diligence approaches from different sectors and regions. If these approaches are promising, cross-sectoral EU human rights and environmental due diligence approaches might be considered.

In addition, as of now large EU public-interest companies, with more than 500 employees, have certain reporting obligations under the EU Directive on non-financial reporting. The companies are required to disclose certain information on the way they operate and manage social and environmental challenges, including due diligence processes they implement. Where relevant and proportionate, the non-financial statement shall also include information on risk that are linked to the company's business relationships, products and services.

► Recommendation: STRADE recommends the EU to continue its review of the implementation of the EU directive on non-financial reporting and, if appropriate and promising, to strengthen it by sharpening reporting requirements on social and environmental risks in the supply chain.

If environmental harm and human rights abuses take place, judicial mechanisms in countries with poor rule of law and high corruption often fail to provide remedy to damaged parties, and access to judicial remedy in the EU is also severely limited, even if EU upstream or downstream companies are involved, either directly or indirectly as downstream buyers. Non-judicial grievance mechanisms can provide a supplementary route for parties damaged by mining activities to obtain remedy. Unlike most current judicial proceedings non-judicial mechanisms may assign joint responsibility to the entire value chain. Therefore, this instrument does not only cover European mining companies but also might hold downstream companies responsible.

The respective mechanisms can have advantages vis a vis judicial solutions due to their focus on dialogue and their ability to provide remedy that addresses the needs of the damaged party. These potential advantages however, will only be realized if those mechanisms adhere to certain standards, e.g., those put down in the UN Guiding Principles for Business and Human Rights.

► STRADE recommends to the EU to support cross-sectoral non-judicial grievance mechanisms to complement judicial options in granting claimants alternative access to remedy. This includes support of the OECD's non-judicial grievance mechanism and its further development. STRADE also recommends considering to include the mandatory establishment of company in-house non-judicial grievance mechanisms in forthcoming human rights due diligence regulations.

14. Do we need a globally accepted international responsible mining standard?

There has been a long discussion in international circles, whether an international responsible mining standard would facilitate international dialogue and cooperation and support broader implementation of responsible mining practice. This debate focuses primarily on a non-binding standard, since a binding treaty is not a viable option for political reasons (sovereignty of the mining countries, etc.). Critics point out that there are already a large number of standards. These have been developed with a great deal of expert input and are well tailored to their area of application. What is much more important than a new initiative with a new standard is better interoperability of existing standards and above all their implementation. STRADE agrees with this argumentation in principle. Nevertheless, there is one important aspect that speaks in favour of a new internationally recognised standard.

Looking in a simplified way at the current landscape of standards, there are a large number of "western" standards, most of which were initiated by stakeholders from industrialized countries, and a growing number of Chinese standards. The "western" and "eastern" regulations still stand

side by side, and the developing countries, in which mining often takes place, were not or only to a lesser extent involved in the development of most of these standards.

Policy Brief on China's approach towards responsible sourcing

- ▶ Recommendation: STRADE recommends to the EU to initiate a forward-looking international dialogue on responsible mining, which can build bridges by jointly developing an international non-binding standard. Even without a legally binding effect, such a process would have a high political value, particularly in deepening the North-South and West-East cooperation and to sending a signal in the wake of the nationalism that is currently widespread.

The resulting standard could serve as a reference document, for example for government activities such as trade agreements and cooperation agreements and for company activities along the value chain. The design of such a standard could include different levels. For example, both minimum requirements and more ambitious best practice approaches could be formulated.

In addition to the political value of such a process, a global non-binding standard might also be expected to make a practical contribution to better local performance, as mining companies, public authorities and downstream companies have a clear reference and benchmark. This indirectly also supports EU tech companies active in international mining, mainly as suppliers, and have a strong interest in universal high standards and their implementation.

The roles in such a process are to be discussed. For example, the EU could invite to such a dialogue and provide the infrastructure. European support for a global institution such as UNEP to steer the process is also conceivable. The Intergovernmental Forum (IGF) would be a key stakeholder for developing countries; other key players would be the World Bank including the finance institution working along the Equator principles, various stakeholders of responsible mining initiatives, mining associations (ICMM, TSM, etc.) and stock exchanges. On the Chinese side, relevant stakeholders are government institutions as well as the China Chamber of Commerce of Metals & Minerals (CCCMC) and different institutions from the finance sector (e.g. Asian Infrastructure Investment Bank and China Banking Regulatory Commission (CBRC)).

15. What are the current challenges and perspectives of materials for green technologies?

The envisaged European and global transformation towards a fossil-free future requires a variety of materials for the provision of the required renewable energy generation plants and infrastructure. Many studies deal with the question of how the demand for raw materials can be provided sustainably. The development of raw material demand for green technologies is very different for the individual metals. While demand from other sectors such as infrastructure, construction and machinery will continue to dominate the demand for some metals (e.g. aluminium and iron) in the long-term, green technologies will play a dominant role for the demand for other metals (e.g. lithium, cobalt, indium and neodymium).

The rare earths elements were at the centre of debate around seven years ago. Chinese export restrictions had led to strong price increases and EU concerns about supply shortages relevant to sectors such as wind power, e-mobility and energy-efficient lighting arose. Such concerns contributed to the development of critical raw materials (CRM) lists by the European Commission and other institutions. Against the background of the current low commodity prices, a global raw material purchase network and the successful development of substitution technologies to decrease dependency from rare earth imports, the STRADE dialogue revealed decreasing

industry's interest in CRM policies. However, current global trade wars and sanctions of US and third parties give rise to supply concerns again.

China still has a near monopoly position in rare earths, and the challenges to make China's rare earth mining environmentally friendly are still huge, even though China introduced policies for a green transformation of the mineral sector.

The rapidly increasing raw material demand for batteries for electric vehicles is currently at the centre of public debate. Lithium and cobalt are the two battery raw materials with the highest concerns and risks, and they will also see the greatest increase in demand relative to current primary extraction levels.

 [Policy Brief on battery materials](#)

Lithium extraction from salt lakes (brines) currently accounts for around 50% of global lithium production and is mostly located in Latin America. The biggest challenge is to make the extraction process water-efficient and operate with high lithium recovery rates, so that the surrounding arid ecosystems in the Andes are not severely affected. STRADE propose different complementary approaches to support responsible mining:

▶ Recommendation: STRADE recommends EU support for mining in the EU for minerals for green technologies, even if domestic sources will not be able to meet high shares of EU demand. Examples are lithium and cobalt for feeding EU cell manufacturing plants.

▶ Recommendation: For improving responsible lithium extraction in Latin America, STRADE proposes an EU-Latin America working group which initiates the international development of a “best available techniques” guiding document for lithium extraction from brines.

 [Policy Brief on battery materials](#)

For cobalt, the pressure on downstream companies is high to ensure that cobalt is mined without child labour and poor health & safety conditions. Around 20 % of global cobalt supply originates from ASM in the DRC, where child labour is common. Various large manufacturers are developing due diligence strategies, and some of them are expected to become involved in development projects in the DRC over the next few years. This commitment is an important element of responsible sourcing efforts. However, it is important that the un-coordinated coexistence of numerous development assistance projects in the DRC is avoided.

▶ Recommendation: STRADE recommends that the EU embassies in the DRC and other conflict-affected states coordinate the upcoming activities of EU companies, which will engage in local ASM-related development projects as part of their due diligence policy for responsible sourcing of conflict minerals and cobalt.

 [Policy Brief on battery materials](#)

China holds a key position in the international cobalt supply chain; its refineries provided almost 50% of the global supply in 2015 and source cobalt ore almost exclusively from the DRC. In 2016, the Chinese CCCMC launched the Responsible Cobalt Initiative (RCI) with support from the OECD. In 2017, the RCI had 24 members including Apple, BMW, Dell, HP, Huawei, Sony, Samsung SDI, LG Chem, Hunan Shanshan, L & F, Tianjin B & M and Huayou Cobalt, and additional members have joined since. A major strength of the RCI is the involvement of actors along the whole supply chain and companies from different continents. It is currently developing an auditing scheme and considering local development projects in the DRC.

► Recommendation: STRADE recommends the EU to engage in dialogue with the Responsible Cobalt Initiative and support its successful implementation.

 *Policy Brief on China's approach towards responsible sourcing*

16. How does the EU address selected environmental challenges (tailing dam management and legacy mines)?

In the STRADE project, many important global social and ecological challenges were identified, but addressed to varying degrees. Priorities were, for example, economic contribution from mining, improving governance, supporting artisanal and small-scale mining, and dealing with conflict minerals. Many other important topics, e.g. relocation for LSM projects, were not explicitly deepened, but indirectly taken into account in the general debates on good governance. These different levels of detail do not suggest that some issues have priority over others or that they should necessarily be considered more important.

Two selected environmental issues that are good examples of major global challenges to be addressed through multilateral approaches, such as global platforms, are presented below.

a) What is the state of play in preventing new tailing dam failures?

Tailings deposits, which arise as waste fraction in the initial ore processing steps, often next to the mine-site, are stored in large ponds or dams known as Tailing Storage Facilities (TSF). Tailings dam failures are one of the most devastating environmental accidents. In Brazil, in November 2015, a tailings dam failure discharged more than 50 million cubic meters of sludge into the surrounding areas with devastating environmental consequences. This catastrophe is not a secluded case. The history of mining is paved with TSF failures similar to Brazil's. Between 2000 and 2009, six dam failures also occurred in European countries.

After mine closure, the tailings deposits often pose the threat of acid mine drainage and can contaminate groundwater and soil if no restraining systems are installed. New mines, which started operation after 2000, should principally follow best practice guidelines and legal requirements which were developed some 20 years ago and have been revised in recent years. However, as in other areas, implementation is lagging behind and still remains a critical issue. The problem has two dimensions. Badly managed tailing dams pose a great risk during operation, as well as leaving a harmful legacy after mine closure.

 *Policy Brief on environmental challenges*

A 2017 UNEP study⁹ claims that the increasing number and size of tailings dams around the globe magnifies the potential environmental, social and economic cost of catastrophic failures' impact and the risks and costs of perpetual management. These risks present a challenge for this generation, and if not addressed now, a debt we will leave to future generations. UNEP proposes to establish a UN Environment stakeholder forum to facilitate international strengthening of tailings dam regulation and recommends multiple actions in the fields of knowledge, technology, failure prevention and financial assurance.

⁹ Roche, C., Thygesen, K., Baker, E. (Eds.) 2017. Mine Tailings Storage: Safety Is No Accident. A UNEP Rapid Response Assessment. UNEP and GRID-Arendal, https://gridarendal-website-live.s3.amazonaws.com/production/documents/s_document/371/original/RRA_MineTailings_lores.pdf?1510660693

► Recommendation: STRADE affirms the need for supporting developing countries to ensure the availability of sufficient funding for sound tailings management and good rehabilitation performance. Further research needs to be carried out for how such funding or assurance can be provided.

► Recommendation: STRADE recommends to the EU to support the UNEP concept of a global platform to address and coordinate global action for safe tailing dam management.

 *Policy Brief on environmental challenges*

 *Policy Brief on platforms for strategic dialogue*

b) What is the state of play in dealing with existing legacy mines?

The legacy mine site mapping that has taken place in developing and emerging countries (e.g. in South Africa, Chile, Peru and Sub-Saharan countries) supports the assumption that the environmental challenges from legacy mine sites in developing countries are massive. Nevertheless, the current discussion about good international raw material governance and corresponding frameworks and sector programmes mainly focuses on active mines, including concepts for the post-mining phase. Less international attention is being paid to the issue of the many legacy and orphaned mine sites in developing countries from both LSM and ASM which are not being remediated due to a lack of financing sources and/or lack of know-how or inadequate inventories. Exceptions are some mines which are re-used for the recovery of secondary materials from old tailings. There are scattered rehabilitation projects which are carried out, supported or financed by various national and international institutions including Member States agencies¹⁰. Despite individual projects on the topic and calls for international action, which were already expressed in 2008¹¹, there is still no broad-based international thematic programme that bundles the measures, develops an inventory and presents an action plan with priority areas.

► Recommendation: STRADE recognizes the importance of funding and technical assistance for mapping and rehabilitation efforts for legacy mines. The recommendation for the EU in partnership with other global leaders is to direct such assistance through an existing agency or institution which has the capacity to deal with these issues. Further evaluation has to be carried out to identify the suitable institution.

In addition to the focus on reducing environmental damage, such an inventory should also identify the potentials and benefits of remediation, taking into account various options for reuse. The recovery of valuable materials (e.g. secondary metals from old mine sites, which today, in contrast to previous years, are becoming economical due to the availability of improved technologies or increased raw material prices.), reuse for tourism, forestry or even agricultural purposes can be considered. Other important points are capacity building and know-how transfer with the aim of building up administrative and technical capacities in the countries concerned.

 *Policy Brief on environmental challenges*

¹⁰ On the international level there are projects on legacy mines by GEF, UNEP, UNIDO, World Bank Group and others. These institutions focus on current mining projects, chemicals, waste or similar overarching topics, under which mine site rehabilitation is addressed among others.

¹¹ In 2008 a roundtable on restoration of legacy sites was held with key global actors such as ICMM, IUCN, governments, private sector, and representatives of NGOs and recommended a global inventory, a risk assessment framework for prioritizing legacy sites and an international coordination. In the same year an IGF study also called for international action in this field, since developing countries need financial support to cope with the massive financial burden.

17. What are the main conclusions in terms of EU action?

The following paragraphs summarize the main STRADE recommendations for social and ecological issues in a highly aggregated form. Interested readers are referred to the final report, which presents these recommendations according to a similar structure, but also integrates the economic issues. More information can also be found in the other STRADE publications to which reference is made throughout this paper.

A. *EU mineral sector support*

STRADE highlights the importance of EU mining to maintain its international credibility in demanding global responsible mining and due to its local economic importance for specific regions. While some parallel EU funded research projects work on EU legislation and Member State-specific issues, STRADE adds international investors' perspective to the debate on how to increase EU mining and gives recommendations on a marketing and investment promotion strategy.

B. *International cooperation*

a) *Acknowledging partner sensitivities*

Prior to recommendations for action, STRADE would like to stress some basic findings on resource-rich partners' priorities which should be acknowledged for a fruitful dialogue with partners. For most resource-rich developing countries, the mineral sector is expected to serve as a major driver of economic growth and employment. Therefore, the EU must acknowledge that economic priorities may, at times, outweigh socio-environmental priorities for these countries and the EU should consider the different perspective in policy dialogues. This is particularly valid for Africa with the vision of the mining sector's strong contribution to building up the African industry and economy, including mineral processing value chains. The EU also has to acknowledge that its historical legacy has shaped the politics and the perceptions of many developing countries. Therefore, diplomatic engagement has to understand the legitimate desire of resource rich countries to use their natural resources as the catalyst to drive transformative, intergenerational social and economic development in the longer term.

b) *Continue and extend current actions and cooperation*

Today's engagement can build upon a large number of good best-practice standards for responsible mining. The current major challenge is their **implementation** which is frequently missing. Therefore, the highest priority must be given to supporting implementation.

STRADE acknowledges that already a lot of action has been carried out by the EU and/or Member States agencies. STRADE advises to have a close cooperation with these agencies and recommends to continue and to expand action, particularly in the fields of improving **international resource governance**, improving general governance in mining host countries, improving the **ASM sector's** conditions, and **dialogue with China**. For the ASM sector with its high importance as source of employment in some regions, some specific recommendations are given for Africa and Latin America. However, the general recommendation is to integrate ASM in EU and Member

States long-term rural development programmes and other programmes targeting wider economic growth and employment.

c) Initiate new action under existing policies

The EU should verify if it has sufficiently **strong in-house capacities** to support a wide variety of its mining-related actions, such as trade negotiations, diplomatic engagement, due diligence, international development assistance and investor promotion. This also applies to EU-embassies which must be aware of the important role of the mineral sector in many resource-rich countries. In near future, embassies should also coordinate upcoming activities of EU companies, which will engage in local ASM-related development projects as part of their due diligence efforts for responsible sourcing of conflict minerals and cobalt.

STRADE acknowledges the **CMR** as an important action since the EU currently is the only region which addresses conflict minerals with the target to reduce funding of armed groups committing human rights abuses. Since the real impact on the ground is not yet clear, STRADE recommends regularly repeated impact assessments of the CMR as a whole and for the underlying certification schemes as basis for future political adjustments and reactions. A detailed STRADE report on CMR gives further advice how the EU can support affected miners, particularly from the ASM sector, and EU downstream companies. Some of these issues are already in EC's pipelines and will be tackled in the next months.

In the field of **ASM**, STRADE recommends to continue and expand existing engagement, but also to take up new activities, e.g. in the conflict mineral regulation accompanying measures and Minamata Convention implementation (mercury reduction).

Currently, the practice of **responsible sourcing beyond conflict minerals** is still in a very early stage. EU and Member States should - besides continuing their engagement in governance support - also support EU businesses to implement responsible sourcing practices.

d) Further development of EU directives, policy documents and concepts

For the **Raw Materials Initiative**, STRADE recommends revisiting and updating the RMI (Pillar 1 "Fair and sustainable supply of raw materials from global markets") by finding a more appropriate balance between measures to secure undistorted access to raw materials and acknowledging development partnerships.

For the **EU directive on non-financial reporting**, STRADE recommends to the EU to continue its review and, if appropriate and promising, to strengthen it by sharpening cross-sectoral reporting requirements on social and environmental risks in the supply chain.

STRADE principally acknowledges that a cross-sectoral approach to mandate **human rights and environmental due diligence** for companies' supply chains may be more effective than regulating every economic sector separately. Therefore, STRADE recommends that the EU explores the lessons-learned from existing due diligence approaches from different sectors and from different countries in more detail. STRADE also recommends to the EU to support cross-sectoral **non-judicial grievance mechanisms**, which also cover downstream buyer responsibilities. This includes continued support of the OECD's non-judicial grievance mechanism. In addition, the EU should consider including the mandatory establishment of company in-house cross-supply chain grievance mechanisms in forthcoming human rights due diligence regulations.

STRADE identified some **financial topics** where new concepts need to be developed. Examples are: the development of responsible raw-material investment schemes, approaches for lowering certification costs for ASM miners, concepts for fair sharing of costs of certification and due

diligence schemes along the supply chain, and frameworks for ensuring the availability of sufficient funding, e.g., through (mandatory) insurance schemes, for sound tailings management and good rehabilitation performance, including legacy mine site restoration, in developing countries.

e) *New dialogues and first steps*

Given **China's importance** as a source of semi-refined and refined mineral products for the EU, and China's action towards responsible supply chain management, it has become an important and influential partner in some international dialogues. It is essential to continue and extend this dialogue despite the challenges such as language barriers, different economic and political systems, different transparency approaches, lack of information and cultural differences.

STRADE is sceptical whether a new central institution for global resource governance will be able to effectively advance responsible mining. Alternatively, **solution-oriented platforms**, e.g., forums for specific issues, are possible approaches. One example is the UNEP proposal for a forum on safe tailings dam management which should also deal with the creation of effective funding and assurance schemes where they are not yet established. Another pressing topic calling for a global platform is legacy mines. With a view to battery raw materials, STRADE proposes an EU-Latin America working group, which initiates the international development of a "best available techniques" guiding document for lithium extraction from brines for improving responsible lithium extraction in Latin America.

Considering the many pros and cons of developing a globally accepted responsible mining standard, STRADE recommends the EU to initiate a forward-looking international dialogue which builds bridges by jointly developing an **international non-binding standard**. Even without a legally binding effect, such a process would have a high political value, particularly in deepening the North-South and West-East cooperation and to sending a signal in the wake of the nationalism that is currently widespread.

List of referenced STRADE reports and policy briefs

- [Policy Brief 02/2017](#) *EU raw material import flows - acknowledging non-EU environmental and social footprints* (February 2017) by Doris Schöler, Stefanie Degreif, Peter Dolega, Diana Hay, Andreas Manhart, and Matthias Buchert (Oeko-Institut e.V.)
- [Policy Brief 05/2016](#) *Outlining Socio-Economic Challenges in the Non-Fuel Mining Sector* (October 2016) by Doris Schöler, Christoph Brunn, Martin Gsell and Andreas Manhart (Oeko-Institut e.V.)
- [Policy Brief 04/2016](#) *Outlining Environmental Challenges in the Non-Fuel Mining Sector* (22 September 2016) by Peter Dolega, Stefanie Degreif, Matthias Buchert, Doris Schöler (Oeko-Institut e.V.) and reviewed by Jan Kosmol (German Environment Agency)
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- [Policy Brief 09/2016](#) *Voluntary initiatives in the mining sector and their principles and criteria on socio-economic sustainability* (December 2016) by Doris Schöler, Stefanie Degreif, Peter Dolega, Andreas Manhart (Oeko-Institut e.V.)
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- [Report 03/2018](#) *Successful implementation of conflict mineral certification and due diligence schemes and the European Union's role: lessons learned for responsible mineral supply* (July 2018) by Nicolas Eslava (Projekt-Consult GmbH)
- [Report 05/2018](#) *Supporting the EU Mineral Sector – Capitalising on EU strengths through an investment promotion strategy* (October 2018) by Masuma Farooki (Mine Hutte), Chris Hinde and Anton Lof
- [Report 06/2018](#) *EU cooperation strategy with resource-rich developing and emerging countries* (October 2018) by Johanna Carstens, Viviana Lozano, Nicolas Eslava, Jürgen Runge, Diderot Nguéjio
- [Policy Brief 07/2017](#) *Platforms for strategic dialogue: a possible way forward* (July 2017) by David Humphreys, Ana Elizabeth Bastida (CEPMLP, University of Dundee) and Andreas Hermann (Oeko-Institut e.V.)
- [Policy Brief 09/2017](#) *The artisanal and small-scale mining (ASM) sector and its importance for EU cooperation with resource-rich developing and emerging countries* (November 2017) by Johanna Carstens (Projekt-Consult GmbH)
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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. – INSTITUT FUER ANGEWANDTE OEKOLOGIE Merzhauser Strasse 173, Freiburg 79100, Germany
	SNL Financial Ltd (SNL Ltd) 20 Canada Square, E14 5LH, London, United Kingdom
	PROJEKT-CONSULT BERATUNG IN ENTWICKLUNGS-LAENDERN GMBH Eulenkugstrasse 82, 22359 Hamburg, 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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