Federal Ministry
for Economic Cooperation
and Development

Responsible mineral supply chains

For a globally just and social-ecological transformation of the economy

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Introduction

For a globally just and social-ecological transformation of the economy, technologies are required, for example wind and solar energy, green hydrogen technology, new drive technologies, and digitalisation. Mineral resources are needed for all these technologies – and demand for them is continuing to grow. The extractive sector is therefore of critical importance. The sector is equally vital to the implementation of the 2030 Agenda for Sustainable Development and the Paris Agreement.

Germany is in the process of restructuring its economy in order to achieve greenhouse gas neutrality by 2045. At the same time, the impacts of the COVID-19 pandemic and Russia's war of aggression in Ukraine have shown just how much Germany depends on access to reliable and diversified sources of raw materials. A responsible and secure supply of critical raw materials is therefore a priority for the German government (cf. National Security Strategy and the German government's Strategy on China).

The German government pursues a coherent and responsible raw materials policy, set out inter alia in the key issues paper *Wege zu einer nachhaltigen und resilienten Rohstoffversorgung* ("Paths towards a sustainable and resilient raw material supply") published by the Federal Ministry for Economic Affairs and Climate Action. On the one hand, this policy aims to ensure a supply of critical raw materials for Germany. On the other, the German government also advocates for making global mineral supply chains fair and responsible as a contribution to a social-ecological transformation of the economy worldwide. The Federal Ministry for Economic Cooperation and Development (BMZ) has a key role to play here, for in many of the BMZ's resource-rich partner countries, the extractive sector offers major development potential.

With this paper, the BMZ makes a contribution to a responsible and coherent raw materials policy for Germany. It focuses on the following objectives:

1. **More legal certainty in resource-rich countries through better resource governance and transparency**

   → The BMZ supports its partner countries in building transparent and efficient governance institutions for the extractive sector – which also benefits German companies.

   → The BMZ advocates for improved transparency of financial flows in this sector.

2. **More value creation in resource-rich partner countries by supporting more local production**

   → At present, raw materials are sourced from a diverse range of countries – but intermediate products mostly come from China. More local value creation benefits resource-rich mining countries and gives German companies more choice.

   → The BMZ promotes training for skilled workers in the mining sector, both for extractive operations and for suppliers of mining technology, vehicles, energy and services. This promotes industrial development and has important employment effects.

   → The BMZ develops instruments that make mining-related investment opportunities visible for decision-makers and the supply industry.

   → The BMZ invests in infrastructures such as renewable energies, water supply and wastewater treatment and in the transport sector, in order to create frameworks that are conducive to the establishment of businesses in supply and processing.

3. **More responsibility along international mineral supply chains**

   → The BMZ is involved in developing binding regulations on due diligence at German, European and international level. It supports partner governments and German companies in implementing mandatory sustainability standards in the areas of the environment and human rights, including via multi-stakeholder partnerships.

   → The BMZ supports the development of monitoring mechanisms that capture the environmental impacts and consequences of mining activities, e.g. with the aid of satellite images.

   → The BMZ contributes to enhanced traceability of raw materials.

   → The BMZ promotes participation and empowers human rights and land rights defenders, rights-holders and their civil society and trade union representatives to know and claim their rights, e.g. via governmental or company-based grievance mechanisms.

With these measures, the BMZ makes a contribution to a responsible and coherent German raw materials policy which, together with partner countries, leverages the development potential of the extractive sector for the implementation of the 2030 Agenda, promotes a globally just energy transition and helps to secure the supply of raw materials for Germany's economic transformation.

1 Raw materials for a social-ecological transformation of the economy

Germany and the European Union (EU) are committed to a socially just and ecologically sustainable transformation of the economy in order to achieve the goals of the 2030 Agenda for Sustainable Development, the Paris Agreement and the new Global Biodiversity Framework. Key pillars of this transformation are the energy transition with the expansion of wind and solar power and green hydrogen technology, the mobility transition with new drive technologies, and digitalisation.

Demand for mineral resources will rise substantially in future. Between 2018 and 2040, demand for lithium will increase sixfold, demand for cobalt will quadruple and demand for graphite will double. A circular economy and a reduction in consumption of raw materials will therefore gain in importance. The opportunities afforded by recycling must always be considered as part of a sustainable raw materials policy.

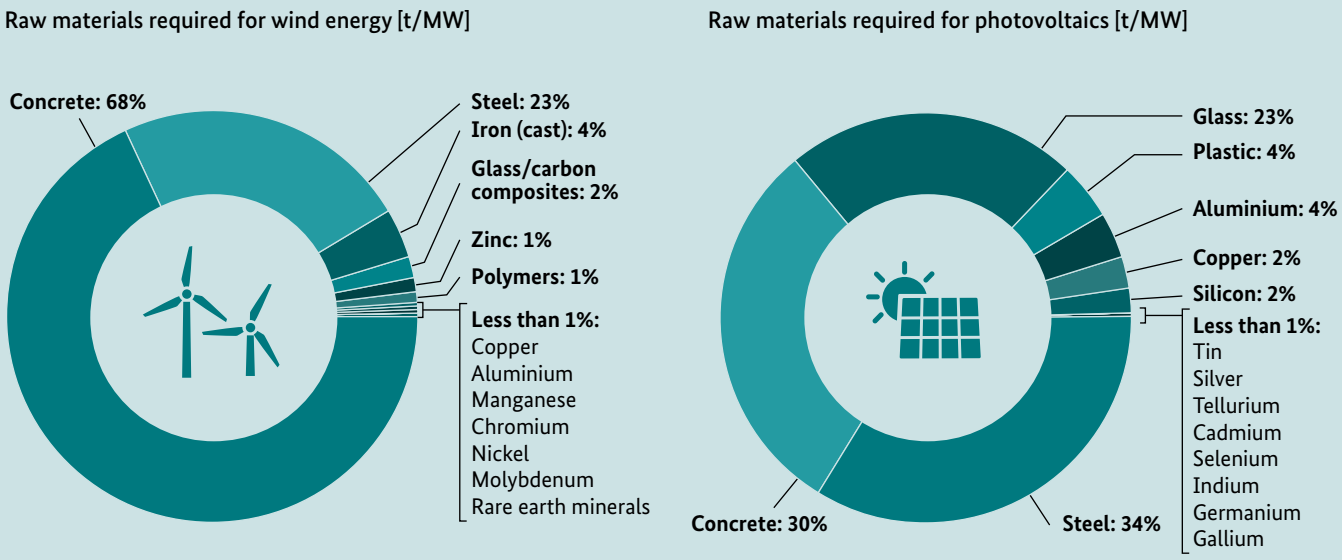
However, there is no prospect of meeting future demand for raw materials by recycling and reductions alone. Primary raw materials will continue to be important sources of supply for industry in future. For Germany and the EU, there is no alternative to importing strategic minerals in the long term. The importance of mineral resources* as a prerequisite for these transformation processes is an ever-stronger focus of political discourse and economic analysis. Access to raw materials has an increasingly geopolitical dimension as well, with countries competing to secure a supply of strategic raw materials. In some cases, there are high dependencies on individual mining and producing countries. Germany and the EU have therefore developed strategies to diversify their mineral supply chains by accessing alternative sources of supply for raw materials. In order to ensure its security of supply, the EU has adopted the Critical Raw Materials Act (CRMA) and has already formed raw materials partnerships with a number of resource-rich countries – so far, with Argentina, Canada, Chile, the Democratic Republic of the Congo, Greenland, Kazakhstan, Namibia, Rwanda, Ukraine, Uzbekistan and Zambia. Germany maintains bilateral raw materials partnerships with Kazakhstan, Mongolia and Peru, which the BMZ supported with development policy measures.

Although the public debate focuses mainly on supply security issues, global demand for raw materials has developmental and environmental implications as well, particularly for resource-rich countries.

The extraction and processing of raw materials are concentrated to a large extent in countries outside the EU, including many of the BMZ's partner countries. While the greatest potential for value creation exists at the end of the mineral supply chains, i.e. in the manufacturing of intermediate and end products, substantial social and environmental risks arise during the extraction and primary processing of raw materials. Unilateral trade relations in which resource-rich countries merely serve as raw material exporters are a barrier to their sustainable economic development.

* This BMZ Position Paper focuses on mineral resources. Fossil resources such as oil, natural gas and coal are not dealt with in this paper; coal is discussed solely in the context of mine closures.

Figure 1: Use of raw materials in energy technologies (examples; BMZ illustration)



Share of raw materials (market average) for the common wind/photovoltaics technologies, expressed in t/MW (material intensity). Specific raw material requirements depend on the technology variation in question.
Source [in German]: German Mineral Resources Agency (2022): "Chart des Monats, März 2022"; German Mineral Resources Agency (2022): "Chart des Monats, April 2022".

The BMZ advocates for making global mineral supply chains fair and sustainable, thus contributing to a social-ecological transformation of the economy worldwide. The BMZ aims to minimise risks in the extraction and processing of raw materials and strengthen local economic structures in mining and associated sectors.

The BMZ's engagement focuses on five action areas:

1. **Promoting responsible mineral supply chains**
2. **Strengthening resource governance**
3. **Increasing value creation in partner countries**
4. **Strengthening and protecting human rights**
5. **Protecting the environment and climate**

The BMZ is involved in shaping the German government's raw materials policy – in line with the 2030 Agenda, a just transition and its feminist development policy – and works to ensure that the potential of mineral supply chains is leveraged for poverty reduction. By considering structural inequalities and promoting local value creation in partner countries, colonial continuities can also be addressed.

Development cooperation that aims to promote ambitious social and environmental standards, local value creation and better resource governance along mineral supply chains minimises the risks associated with extraction and processing in producing countries. Responsible resource governance also contributes to legal certainty for businesses and creates the necessary framework for the implementation of corporate due diligence. The risk of local protests against mining companies – which can ultimately jeopardise supply security – is simultaneously reduced.

With this Position Paper, the BMZ thus makes a development policy contribution to a sustainable and coherent raw materials policy for Germany.

2 The development policy relevance of the extractive sector in BMZ partner countries

For many of the BMZ's partner countries, the extractive sector and integration into global mineral supply chains offer opportunities for development, but also pose challenges. Depending on the raw material, the supply chain in question and the political, social and economic environment in the producing countries, context-specific options for development cooperation can be identified.

The following mineral resources, among others, are important as core components of new technologies:

- **Photovoltaic systems:** Copper, bauxite/aluminium, silicon, gallium, indium, selenium
- **Wind energy installations:** Copper, zinc, rare earths, nickel, chromium, iron/steel, bauxite/aluminium, cement
- **Batteries for e-mobility:** Copper, cobalt, nickel, lithium, graphite, manganese
- **Digitalisation:** Copper, cobalt, chromium, silicon, tantalum, rare earths, aluminium, nickel, tin, gold, tungsten, platinum group metals, gallium, indium
- **Hydrogen technologies:** Nickel, rare earths, platinum group metals, bauxite/aluminium

Opportunities

In several of the BMZ's partner countries, a major share of gross domestic product (GDP) and export value comes from the extractive sector. In 2019, one-third of its partner countries generated more than 20% of their total export volume in the extractive sector. In Mongolia, for example, the sector accounts for almost 90% of export revenue. In the Democratic Republic of the Congo, where 72% of the primary cobalt used worldwide originates, the extractive sector accounts for an even higher proportion – more than 90% – of exports.

Tax revenues from the extractive sector can make a significant contribution to government income, thus creating scope to fund public services such as education and healthcare. The extractive sector offers opportunities for training and employment in mining, in the supply of goods and services (upstream value creation) and in processing (downstream value creation). According to the International Labour Organization (ILO), some 21.4 million workers were employed in industrial mining worldwide in 2019. In addition, the World Bank estimates that around 45 million people are working as artisanal and small-scale miners worldwide. Artisanal and small-scale mining (ASM) offers potential to reduce poverty, mainly in rural regions with few employment opportunities. Investment in infrastructure and the training of skilled workers also benefits economic development in adjacent sectors such as construction, commerce, development of mining-related technology, and services. Based on the extractive sector, diverse sources of income are thus created across a range of occupations and skills levels. The sector therefore has the potential to stimulate economic development in the partner countries.

Germany and the EU can also benefit from strengthened economic partners, particularly in relation to their own security of supply. Currently, the processing of many raw materials is concentrated in China. Where

the development of processing capacities leads to diversification of supply chains, local value creation can help to reduce critical dependencies in mineral supply chains, thereby minimising risks.

Many raw materials that are indispensable for the energy transition are extracted in BMZ partner countries. However, it is not only about promoting a just transition in the importing regions of the world. On the contrary, a responsibly governed extractive sector offers potential benefits for the energy transition in partner countries as well. The extraction and processing of raw materials offer countries new and alternative sources of income and can potentially replace the jobs that will be lost as a result of the fossil fuel phase-out. Furthermore, the use of renewable energies in mining operations and in the processing of raw materials can significantly reduce the carbon footprint of domestic industry. In some partner countries, the share of renewables in the electricity mix is already relatively high due to the use of hydropower, for example. The well-planned provision of energy sources and a grid infrastructure can also benefit local communities. These are potentially significant factors determining the competitiveness of mining sites in BMZ partner countries. Low-carbon mining and processing of raw materials offer a competitive advantage over other locations, such as China, and increase the investment potential for German companies.

Challenges

A one-sided economic focus on mining may result in other sectors being inadequately supported and may also have negative social and political impacts. For example, according to the International Monetary Fund (IMF), countries in sub-Saharan Africa are losing between US$450 and US$730 million per year in corporate income tax revenues as the result of tax avoidance by multinational companies in the mining sector.

Human rights-related risks in the extractive sector affect various social groups: for example, risks of human rights violations often arise when communities in mining regions are not sufficiently engaged in decision-making processes, when forced relocations occur, or when land and resource rights are not respected. In some areas, the negative impacts of mining can trigger social conflicts. Occupational health and safety, decent pay, insurance, the right to freedom of association and the right to strike are not guaranteed in many cases. In artisanal and small-scale mining, the worst forms of child labour and forced labour can in some cases be observed. The rights of Indigenous Peoples under ILO Convention 169 and the United Nations Declaration on the Rights of Indigenous Peoples are often not respected in the extractive sector. This applies particularly to the right to free, prior and informed consent (FPIC). Particular consideration should be given to human rights requirements in relation to land which has religious or cultural significance or is inhabited by uncontacted Indigenous Peoples. The outsourcing of consent processes to companies means an increased risk of inadequate community engagement and human rights violations.

Women and girls in all their diversity are negatively impacted by mining in specific ways. For example, sexual and gender-based violence is prevalent in the mining industry. Furthermore, women often have no formal land titles and therefore receive no compensation when land is expropriated for mining. They also benefit less from the potentially positive impacts of mining; for example, they are less likely to have access to (well-paid) jobs or to consultation and decision-making processes in this sector.

The extraction and processing of raw materials also give rise to environmental and climate risks. The use of chemicals, such as mercury in small-scale mining and cyanide in industrial gold mining, poses a threat to land and water resources. In arid and semi-arid areas, the consumption of large amounts of water in the extraction process puts ecosystems at risk. And in many countries, mining is a driver of deforestation and biodiversity loss, caused by the required land clearance and the construction of infrastructure, for example.

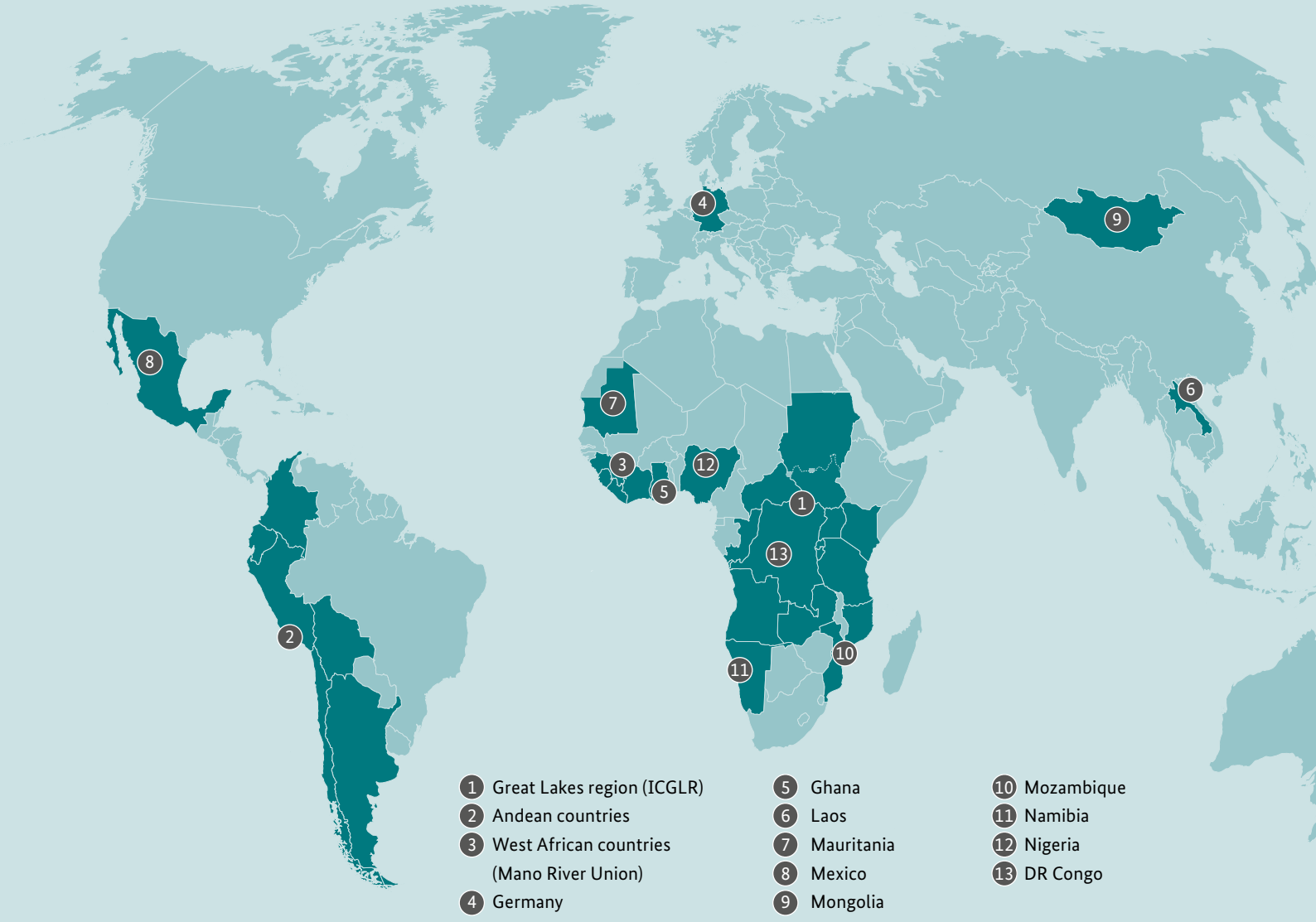
Furthermore, due to reduced competition, high income expectations and weak supervisory bodies, the extractive sector is often impacted by corruption and illicit financial flows. According to the Organisation for Economic Co-operation and Development (OECD), the extractive sector is particularly vulnerable to bribery in connection with international business transactions. Revenues from illicit raw materials extraction and trade can also fuel armed conflicts and organised crime. Corruption leads to unfair competition and disadvantages businesses that operate with integrity. Human rights violations, environmental degradation and health-related risks in the extractive sector are often directly linked to corruption. In many cases, corruption facilitates or serves to conceal criminal acts.

Moreover, jobs are lost when mines close down. Above all, the exit from fossil fuels such as coal will necessitate structural change in affected regions. Due to changing job profiles, the newly unemployed are unlikely to find work easily in other sectors unless they have access to appropriate reskilling measures. The ILO forecasts that some 7.8 million jobs may be lost worldwide as a result of the exit from fossil fuels, while 10.3 million jobs will be created. In order to manage this structural change in a socially equitable manner in line with the just transition model, far-sighted policy planning is required.

3 The BMZ's action areas

The BMZ aims to contribute to globally equitable and socially and ecologically responsible raw materials extraction and processing. Countries that are rich in raw materials must derive more benefits from their resources. For German development cooperation, it is therefore particularly important that governments and businesses protect and respect human rights and the environment and that populations share in the benefits of economic development.

Figure 2: Selected current bilateral and regional German development cooperation projects and activities in the raw materials sector, 2024 (BMZ illustration)



The BMZ is currently engaged in the extractive sector in more than 20 regional and bilateral projects in over 30 partner countries worldwide. With a regional focus on Central Africa, West Africa and the Andean region, the BMZ is active in countries that produce strategic raw materials such as copper, lithium, cobalt, tantalum, tungsten and bauxite. At the same time, the BMZ cooperates with international partners such as the World Bank's Extractives Global Programmatic Support (EGPS) Multi-Donor Trust Fund, the Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development (IGF) and the OECD. At national level, the BMZ is engaged in dialogue with other ministries, businesses, trade unions and civil society.

The BMZ's present engagement can be divided into five main action areas. The individual action areas are not discrete but are inherently connected: the establishment of responsible supply chains worldwide will only succeed if good governance is strengthened in this sector, effective frameworks are put in place and value creation occurs throughout the supply chain. Protecting human rights and the environment must always be given high priority. The BMZ's activities in the extractive sector are also aligned with the guiding principles of German development cooperation.

Figure 3: Action areas for responsible German raw materials policy (BMZ illustration)

Promoting responsible mineral supply chains – co-creating standards, supporting their implementation

Responsible mineral supply chains are those in which not only the economic but also the social and environmental sustainability principles are considered along the entire supply chain. As stated in the UN Guiding Principles on Business and Human Rights and the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals, the ensuing obligations apply to states and business enterprises alike. This requires globally coordinated action by all stakeholders in the supply chain, with particular consideration given to civil society, trade unions and local communities and the specific challenges and conditions existing in the mining countries. In implementing corporate due diligence along mineral supply chains, the BMZ relies on a blend – a smart mix – of mandatory and voluntary national and international support measures.

The legal provisions governing due diligence introduce requirements for companies to identify and mitigate environment-related, social and human rights-related risks in their supply chains at an early stage and implement remedial action in the event of violations occurring. In order to ensure that business enterprises do not withdraw from, or refrain from investing in, countries with high risks, the principle of "engagement before disengagement" applies. The aim is to achieve targeted improvements in production conditions in partner countries in cooperation with companies.

The BMZ works within the German government and at European level to ensure that the legal provisions have a development impact in the target countries. For the BMZ, the fulfilment of due diligence obligations should not be a box-ticking exercise for companies but should generate significant impetus for improving living and working conditions for people in mining communities. The BMZ advocates for partner countries' interests and needs to be given sufficient consideration in the framing of German and European policies and regulations and provides support services for German businesses and for stakeholders in the partner countries in order to facilitate implementation of the regulations. Supporting local implementation is a key building block in demanding and promoting standards and is an area where German development cooperation makes a significant contribution.

Legislation on due diligence in supply chains

1. The German Act on Corporate Due Diligence Obligations in Supply Chains (LkSG) requires companies with 1,000 or more employees to fulfil due diligence obligations in their supply chains. Companies must perform regular analyses of their own business area and direct suppliers. In the case of indirect suppliers, companies must take action if there is substantiated knowledge of human rights-related or environment-related risks.

2. Since 2021, the EU Regulation laying down supply chain due diligence obligations for Union importers of tin, tantalum and tungsten, their ores, and gold originating from conflict-affected and high-risk areas (EU Conflict Minerals Regulation) has required companies importing into the EU to comply with human rights-related due diligence obligations.

3. The EU Corporate Sustainability Due Diligence Directive (CSDDD) will in future serve as a broad-impact mechanism for improving living and working conditions in all affected sectors and establishes due diligence obligations for large companies operating in the EU's internal market. The Directive goes further than the provisions of the German Act on Corporate Due Diligence Obligations in Supply Chains and introduces more stringent requirements for business enterprises. Examples are the broader scope of environment-related due diligence obligations and the introduction of a mandatory requirement to involve supply chain stakeholders in due diligence processes. Furthermore, access to remedies in Member States' civil courts is facilitated for affected persons in third countries, with a specific civil liability regime introduced under this legislation. The Directive thus creates equal conditions of competition – a level playing field – for companies in the single market.

4. In July 2023, the European Union adopted the new Batteries Regulation, which includes human rights- and environment-related due diligence obligations for businesses in relation to four raw materials used in battery manufacturing, i.e. lithium, cobalt, nickel and natural graphite.

Through engagement in multi-stakeholder initiatives such as the European Partnership for Responsible Minerals (EPRM), and in Technical Cooperation projects, the BMZ helps to ensure that the enhanced corporate sustainability requirements in supply chains are implemented in practice. The BMZ makes targeted efforts to strengthen the rights of workers and rights-holders in mineral supply chains, e.g. by promoting accessible and comprehensive grievance mechanisms. In Mexico, for example, a cross-company grievance mechanism is being piloted for automotive supply chains. Through the Forum Responsible Gold, the BMZ promotes the exchange of information and experience to build responsible gold supply chains, inter alia in the jewellery sector.

EPRM

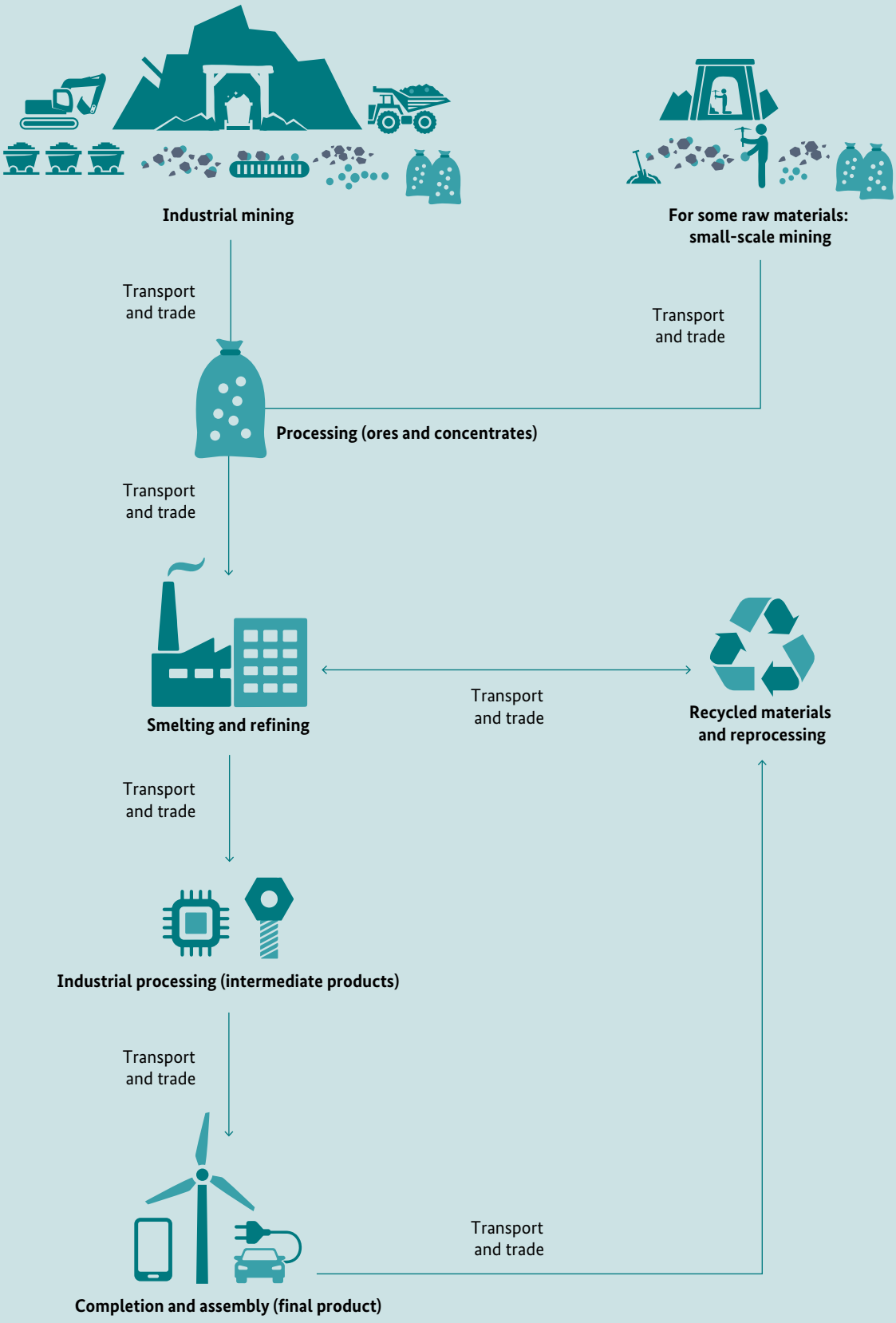
The BMZ has represented the German government as a member of the European Partnership for Responsible Minerals (EPRM), a development policy measure to support the EU Conflict Minerals Regulation, since 2020. This multi-stakeholder partnership aims to improve social and economic conditions in artisanal and small-scale mining. To that end, the EPRM promotes innovative projects in the artisanal and small-scale mining sector in order to strengthen responsible production standards and open up access to global supply chains. In addition, the EPRM contributes to networking and dialogue among stakeholders in mineral supply chains.

In addition to its active role in shaping multi-stakeholder partnerships, the BMZ offers support services for German and EU businesses implementing statutory due diligence obligations. For example, via the Helpdesk on Business and Human Rights, German companies are given support in fulfilling their due diligence obligations. Within the framework of a Team Europe Initiative (TEI), the BMZ is involved in a planned expansion of that helpdesk model so that the helpdesk's services are also available to governments, civil society, rights-holders and business enterprises in BMZ partner countries. In addition, the BMZ encourages investment by German companies in BMZ partner countries when such investment offers scope to raise standards in global supply chains. The BMZ's develoPPP programme supports companies with certification of their products. The ImpactConnect programme run by DEG – Deutsche Investitions- und Entwicklungsgesellschaft mbH provides attractive loans for companies to support their investments in the Global South. Companies benefit from favourable interest rates for implementing measures for fair and sustainable supply chains that exceed established country and industry standards.

Lastly, the BMZ promotes responsible mineral supply chains in partner countries. The BMZ's work focuses inter alia on traceability of raw materials – a key challenge in the extractive sector. For example, major companies in the automotive industry may have up to eight stages in their supply chains, with tens of thousands of suppliers, while smelting and refining operations often utilise a mix of raw materials of various origins. Tracing the origin of raw materials derived from artisanal and small-scale mining is particularly challenging as this is a largely informal economic sector. The high complexity of these supply chains leads to a lack of transparency, which hinders compliance with environment- and human rights-related due diligence obligations. With the Certified Trading Chains (CTC) certification system, the BMZ promotes a mechanism to improve traceability of raw materials from artisanal and small-scale mining in Africa's Great Lakes Region, for example.

In addition, the BMZ promotes the development and establishment of effective control mechanisms for supply chains, such as industry standards and certification systems. Standards and certification schemes establish criteria for responsible production conditions in the mining and processing of raw materials. Within the framework of bilateral and regional development cooperation, the BMZ supports partner institutions, e.g. in Africa's Great Lakes Region, the Andean region and the West African Mano River Union, in implementing standards in both industrial mining and the artisanal and small-scale mining sector.

Figure 4: Raw material supply chain for metals (example; BMZ illustration)



The multilateral development banks also have an important role to play in framing and effectively implementing sustainability standards in mineral supply chains. As a shareholder, the BMZ advocates for the mandatory and comprehensive application of due diligence and environmental, social and governance standards for extractive sector projects. An example is the management of risks of forced labour in solar supply chains; here, the World Bank and the regional development banks are currently working on the implementation of action plans and remedial measures.

Strengthening resource governance in partner countries

Resource governance – i.e. good governance – puts the state's management and supervisory function front and centre. Responsible management of the extractive sector requires effective legislation, properly functioning institutions, and human and financial capacities in government administration. Together with its partner governments, the BMZ aims to build transparent and efficient governance institutions in the extractive sector. Good resource governance supports the enforcement of production standards in mining and increases legal certainty for companies. It is an important prerequisite in establishing responsible supply chains. In the Democratic Republic of the Congo, for example, the BMZ supports the government authorities in exercising their supervisory function and monitoring sustainability standards in mining operations.

A legal framework for responsible resource governance must be aligned with the principles of environmental, social and economic sustainability. Mining legislation establishes the legal bases and, among other things, regulates taxes and royalties in the mining sector. Environmental, labour, commercial and social welfare legislation is also of key importance. Public authorities require technical expertise, technology and infrastructure to enable them to make informed decisions on licence allocations for extractive sector projects and exercise comprehensive supervision of companies.

In its regional and bilateral projects, the BMZ works closely with the relevant authorities in the partner countries on strengthening resource governance and utilises various entry points for this purpose.

The BMZ

- develops needs-based training programmes that focus on exploration, mining technology, the extractives industry, environmental and mining supervision, and international standards. It also provides further training for tax and mining authorities in partner countries in order to achieve adequate and efficient taxation and revenue collection in the extractive sector;
- supports digitalisation of resource governance, e.g. licence allocations and provision of information on raw materials;
- advises its partners on developing responsible legislation;
- builds the capacities of government institutions in the partner countries through knowledge-sharing and technology transfer, e.g. by supporting the establishment of laboratories.

The formalisation of artisanal and small-scale mining is pivotal in minimising environment- and human rights-related risks and leveraging development potential, particularly for poverty reduction. Formalisation is a prerequisite for licence allocations, access to credit facilities and the formation of cooperatives. It also facilitates the implementation of environmental and social standards. The BMZ supports the formalisation of artisanal and small-scale mining through its own projects, e.g. in sub-Saharan Africa, and via the EPRM and EGPS.

CONNEX

The BMZ is implementing the G7 CONNEX Initiative. The purpose of CONNEX is to empower partner countries to negotiate with private investors on equal terms and achieve fair investment contracts in the extractive sector. This enables partner countries to increase value creation within their economies and demand compliance with environmental and social standards at an early stage in negotiations with investors. CONNEX makes a major contribution to sustainable raw materials extraction and to stable and responsible supply chains for the long term.

EITI

The BMZ has supported the Extractive Industries Transparency Initiative (EITI) since its formation in 2003. This multi-stakeholder initiative advocates for transparency and accountability in the extractive sector. The key instrument is implementation of the EITI Standard, which requires the disclosure of information about the extractive industry's upstream value chains, including contract and licence allocations, beneficial ownership of corporate entities, production data, payments and revenues, distribution of revenues, and contribution of the extractive sector to the economy. Other priorities are combating corruption and promoting a debate about fair benefit-sharing for producing countries in the extractive sector.

Fair compensation for environmental damage and for reduced options for using forest, grazing and arable land is important for responsible resource governance, as is appropriate social and economic participation. The BMZ promotes informed civil society engagement in the planning and implementation of extractive projects. Transparent access to mining statistics, environmental impact assessments and mineral development contracts is also required in this context.

Transparent action by public authorities, based on clearly formulated and implemented procedural rules, is an important part of governance. This creates an attractive business climate and promotes the investment needed in the mining sector. By combating corruption and illicit financial flows in the extractive sector, the BMZ supports revenue generation in partner countries and promotes a level playing field across companies. Good governance also improves the conditions for business engagement by German companies. In the context of supply security, development cooperation is a key component of German raw materials policy. Within the German government, the BMZ therefore advocates for development policy measures that complement foreign trade and investment promotion (e.g. in the form of untied federal loans or policy measures to facilitate investment by German companies) and utilise the experience and structures of development cooperation in resource-rich partner countries. In this way, potential environment-related, social and human rights-related risks for businesses can be identified and addressed at an early stage.

Increasing value creation in partner countries

Global mineral supply chains are rife with structural inequalities. Resource extraction often has negative impacts on local communities and the environment, yet value creation is generally concentrated outside the producing countries. Many of the BMZ's partner countries are demanding a larger share of the benefits of their resource wealth instead of serving purely as suppliers of primary raw materials. In order to generate higher gains in value creation from processing in the metals sector, one option is for countries to establish a specialised processing industry in mining regions. The BMZ will increase its support for these approaches in future in order to boost local and regional value creation in the processing and supply industry. In this way, through its engagement in the extractive sector, the BMZ is working to reduce poverty and inequality and shape a socially just economic transformation in partner countries.

Multilateral and bilateral agreements that facilitate trade and investment play an important role in raw materials processing and exports. The BMZ therefore advocates for supportive trade policies that are conducive to development. Specifically, this means that future EU trade agreements should not impose more restrictions on the scope for industrial policy measures to promote local processing than those that apply under existing rules in the multilateral trade system. Local processing is further promoted through the BMZ's trade-related development cooperation. This includes measures that enhance the competitiveness of small and medium-sized enterprises, access to finance for local businesses and vocational training in the extractive sector.

In its development cooperation, the BMZ also advocates for the value creation potential of construction aggregates and industrial minerals such as sand, gravel, clays and loams to be leveraged to a greater extent. These raw materials are vital for industry, infrastructure and urban development and are in high demand, particularly at the regional level. Here, value creation generally remains in the mining country, where it can help to boost incomes and reduce poverty. In bilateral and regional extractive projects in Namibia and the

Andean region, for example, the BMZ supports analysis of hitherto underexploited mining potential and evaluation of specific processing opportunities.

The establishment of a domestic supply industry for mining technology, vehicles, energy and services fosters industrial development and has important employment effects. Together with partners, the BMZ devises instruments that give policy-makers an information basis for developing a domestic procurement sector. The BMZ supports the use of the LION tool (Local Investment Opportunities in Natural Resource Projects) for modelling mining companies' procurement expenditures in order to make specific investment opportunities visible for policy-makers and suppliers. Clean energy, water, wastewater treatment and transport infrastructures create an enabling environment for the establishment of companies in the supplier and processing sectors. Furthermore, with the development of local processing industries in partner countries, transport distances can be reduced in global mineral supply chains, thus helping to lower greenhouse gas emissions here.

Digital transformation is already having visible impacts on mining operations in BMZ partner countries. Ongoing digitalisation and automation in large-scale mining mean that a better-skilled workforce is required. The BMZ promotes training for skilled workers in the mining sector and prepares them for the digital workplace. The BMZ will continue to view its training measures in the mining sector as a key instrument for poverty reduction in partner countries in future. The BMZ does not only focus on mining operations in this context; within the framework of a develoPPP development partnership in Ghana, it is currently supporting training programmes for supplier companies to build their skills in preparation for cooperation with international mining companies.

Alongside training for skilled workers, technology transfer is a key lever for increasing local value creation. Through private sector investment and the use of innovative technologies, BMZ partner countries can boost productivity in individual stages of the production process and profit to a greater extent from mining and processing of raw materials. In addition, modernisation of sites and production facilities often encourages more effective compliance with environmental and social standards.

The BMZ intends to integrate the development of value creation capacities in partner countries into national and European strategies aimed at securing and diversifying sources of supply for raw materials. At present, the processing of many raw materials mainly takes place in China. In the case of rare earth minerals and intermediate products required for the energy transition, there are critical dependencies which, in the past, were exploited by China in its dealings with other countries. Development projects to increase value creation in partner countries can therefore improve supply security in Germany and Europe and offer benefits for all the partners involved. As the expansion of the processing industry entails substantial investment, the BMZ closely coordinates its approach with multilateral stakeholders. The European Commission's Critical Raw Materials Act, the Global Gateway Initiative and the EU's strategic raw materials partnerships are key levers in this context. The BMZ also supports the World Bank's Resilient and Inclusive Supply-Chain Enhancement (RISE) initiative, which aims to improve the investment climate in resource-rich countries through skills-building, institutional capacity development and regulatory reforms. This is a prerequisite for investment in infrastructure and the processing industry. In addition, the BMZ is working, based on close dialogue with its partner countries, for the German government to advance these discussions in the G7, too.

Critical Raw Materials Act

With the European Critical Raw Materials Act (EU CRMA), the European Commission adopted a package of measures in 2024 to ensure the EU's access to a secure, diversified, affordable and sustainable supply of raw materials. The Regulation aims to expand European production and a circular economy and diversify supply chains through Strategic Projects in, and Strategic Partnerships with, third countries. Development policy objectives must be safeguarded in the implementation of the Strategic Partnerships, compliance with sustainability standards must be guaranteed, and potential for local value creation in third countries must be promoted. In order to achieve these goals, implementing companies must comply with sustainability requirements. From a development policy perspective, outsourcing of corporate responsibility to certification initiatives should be viewed critically.

Protecting and strengthening human rights

German development policy is human rights-based. Human rights, gender equality and disability inclusion are core elements of Germany's value-based development policy (cf. Human Rights Strategy for German Development Policy). This is especially relevant for the extractive sector as human rights abuses frequently occur here, including child and forced labour, expropriations and resettlements, the financing of armed conflict through the resource trade, and unsafe working conditions. Environmental damage – caused by dam disasters or forest clearance, for example – also poses a threat to the human rights of Indigenous Peoples and other local communities.

The BMZ stands firm against these violations of human rights by taking human rights into account as a cross-cutting issue in development cooperation. Human rights are specifically promoted through targeted measures and addressed in the political dialogue with partner countries and in the multilateral context. In order to strengthen human rights and support marginalised groups, a multi-level approach is required.

The BMZ

- supports governments and public authorities in meeting their human rights obligations (respect, protect, fulfil);
- advocates for companies' compliance with their due diligence obligations;
- promotes participation and empowers human rights and land rights defenders, rights-holders and their civil society and trade union representatives to know and claim their rights;
- supports the establishment of governmental and company-based grievance mechanisms that enable enterprises to verify compliance with human rights standards in their supply chains more effectively;
- strengthens access to justice for rights-holders in global supply chains through European regulation.

In the same vein, the German government's raw materials policy takes human rights aspects into account. The BMZ works to ensure that instruments that promote foreign trade and investment focus on human rights-related risks at an early stage and provide for remediation. In addition, the BMZ supports the introduction and monitoring of occupational safety standards by local authorities in several countries, including the Democratic Republic of the Congo and Laos. In the Andean countries, the BMZ is advising ombudsperson offices on improving the accessibility and efficiency of grievance and compensation mechanisms for communities in mining regions. It also promotes civil society engagement to support Indigenous Peoples and local communities in exercising the right to free, prior and informed consent (FPIC).

In its regional project in Côte d'Ivoire, Guinea, Liberia and Sierra Leone, the BMZ supports awareness-raising measures for civil society on effective protection of human, labour, environmental and resource usage rights. Participatory environmental monitoring plays a key role in engaging communities in the management of environmental impacts in mining regions.

The BMZ cooperates with the International Conference on the Great Lakes Region (ICGLR), an African regional organisation, in order to improve the living and working conditions of people working in artisanal and small-scale mining. Through this cooperation, the BMZ promotes the formalisation of artisanal and small-scale mining with the aim of minimising human rights abuses, e.g. through certification of raw materials and monitoring of potential child labour.

In line with a feminist development policy, the BMZ aims to strengthen justice for everyone and enable participation based on equal rights. It addresses power relations that have a discriminatory effect (e.g. based on a person's gender, gender identity or sexual orientation) and promotes gender equality in the extractive sector. It is imperative to eliminate discriminatory gender roles and stereotypes and adopt an intersectional perspective. The BMZ promotes gender equality by

- → strengthening the rights of women and girls in all their diversity in mineral supply chains,
- → promoting women's and girls' access to and control over resources, such as financial services, land and (formal) income opportunities,
- → and advocating for the representation of women and girls in decision-making and consultation processes in partner countries.

The BMZ is engaged in organisations such as Women's Rights and Mining and cooperates with International Women in Mining (IWiM) in order to advance gender justice in the mining industry. In Colombia, the BMZ also supports the development and implementation of gender policies for the mining and energy sector. The BMZ aligns its bilateral and regional extractive sector projects with the vision of feminist development policy.

Protecting the environment and climate

Many mineral resources are used as components in low-carbon, low-emission technologies. However, the extraction and processing of these raw materials are associated with high environmental and climate costs. Mining and the downstream stages of the production process are often energy-intensive. The sector is reported to be responsible for up to 7% of greenhouse gas emissions globally. Furthermore, mining operations are significant drivers of deforestation worldwide. In line with a just transition, the BMZ advocates for mining in partner countries to be as climate-sensitive and environmentally responsible as possible.

The use of renewable energies in the extractive sector offers major potential for greenhouse gas emission reductions. In order to leverage this potential, the BMZ cooperates with the World Bank on the implementation of the Climate-Smart Mining Initiative, which develops methodologies for measuring and reducing the carbon footprint of mineral supply chains and assists partner governments with their implementation.

The BMZ aims to minimise environmental risks such as releases of pollutants, the formation of acid mine drainage and the use of chemicals that are harmful to health. In addition, the BMZ builds the institutional capacities of supervisory authorities and supports the development of monitoring mechanisms. This includes the use of satellite imagery to monitor environmental impacts and informal small-scale mining activities, e.g. in the Democratic Republic of the Congo. The formalisation of artisanal and small-scale mining in producing countries is also a key prerequisite for the implementation of environmental standards. In line with the Leave No One Behind (LNOB) principle, this transition must be accompanied by capacity-building in more environmentally compatible production practices and social protection mechanisms.

In the context of the just transition, the BMZ advocates for improvements in mine closure practices. The extraction of mineral resources often involves substantial appropriation of land and generates large volumes of mining residues. To facilitate the productive use of these sites in the post-mining phase, the mine closure process needs to be properly managed. This includes reducing environmental damage during the operational phase and remediating or mitigating this damage once the project has ended, e.g. with measures to restore ecosystems and biodiversity. The BMZ supports responsible mine closure and rehabilitation of former mining sites in countries such as Argentina, Mongolia and Peru.

In order to minimise the environmental and climate impacts of the extractive sector worldwide, reducing resource consumption is key. The BMZ promotes the recovery of raw materials from mining waste (secondary mining) in partner countries and contributes to a sustainable circular economy. With the aid of innovative technologies, local processing of mining waste can unlock an affordable supply of secondary raw materials.

4 Outlook

The extractive sector is crucial for implementing the 2030 Agenda: mineral resources are core components of the technologies required for a globally just and social-ecological transformation of the economy. The energy and mobility transitions and digitalisation are key pillars in the decarbonisation of the economy.

Global demand for raw materials will increase significantly in the coming decades. From a development policy perspective, the aim is to leverage the potential of the extractive sector for the benefit of the BMZ's partner countries. Further goals are to reduce poverty through increased value creation and minimise the human, environmental and climate risks that arise in the extraction and processing of raw materials. By promoting sustainability and transparency, the BMZ also contributes to building resilience in global mineral supply chains.

- **Strengthening human rights and good governance:** With its partners, the BMZ will continue to engage for responsible mineral supply chains in the interests of a globally just and social-ecological transformation of the economy. Within the framework of bilateral, regional and international cooperation, the BMZ will support its partner countries in improving the conditions for responsible and human rights-compliant raw materials extraction and processing and in building capacities for effective governmental monitoring of environmental and social standards. This also includes strengthening the rights and participation of rights-holders and civil society and trade union representatives, which will also count towards the implementation of corporate due diligence obligations. Furthermore, in line with a feminist development policy, the BMZ will continue to strengthen its engagement for gender justice in mineral supply chains.

- **Actively contributing to shaping multi-stakeholder platforms and multilateral initiatives:** Cross-supply-chain approaches have a key role to play in implementing and enforcing standards along individual mineral supply chains – and also in promoting local value creation in partner countries (establishing future-fit supplier industries and processing capacities). The BMZ therefore makes an active contribution to shaping multi-stakeholder partnerships and multilateral initiatives in the extractive sector. These partnerships and initiatives bring together and coordinate existing resources and mechanisms, help to diversify mineral supply chains and establish services to support German and European companies in fulfilling corporate due diligence obligations. In particular, the BMZ advocates for a stronger voice and representation of the interests of stakeholders from resource-producing partner countries.

- **Promoting close coordination at the EU level:** Together with other ministries, the BMZ progresses strategies and initiatives for the diversification of mineral supply chains at national, EU and multilateral level, e.g. within the framework of the Minerals Security Partnership Forum. In addition, the BMZ works closely with European stakeholders, e.g. as part of the implementation of the Global Gateway strategy, and advocates for producing countries' and the EU's interests to be taken into account in strategic raw materials partnerships. It is essential to increase value creation in partner countries and strengthen training and employment opportunities as a contribution to poverty reduction.

- **Working in tandem with Financial Cooperation and the private sector to a greater extent:** Alongside Technical Cooperation, the BMZ will focus more strongly on the support opportunities available via Financial Cooperation in the extractive sector. In addition, the BMZ is keen to expand its cooperation with German companies, with an emphasis on implementing human rights-based prevention and remedial measures in partner countries with critical raw materials.

PUBLISHED BY THE
Federal Ministry for Economic Cooperation and Development (BMZ)

EDITED BY
BMZ, Division 120 – Sustainable transformation of global supply chains

LAST UPDATED
Amendment: August 2025, Data as at: June 2024

DESIGN AND LAYOUT
familie redlich AG – Agentur für Marken und Kommunikation

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