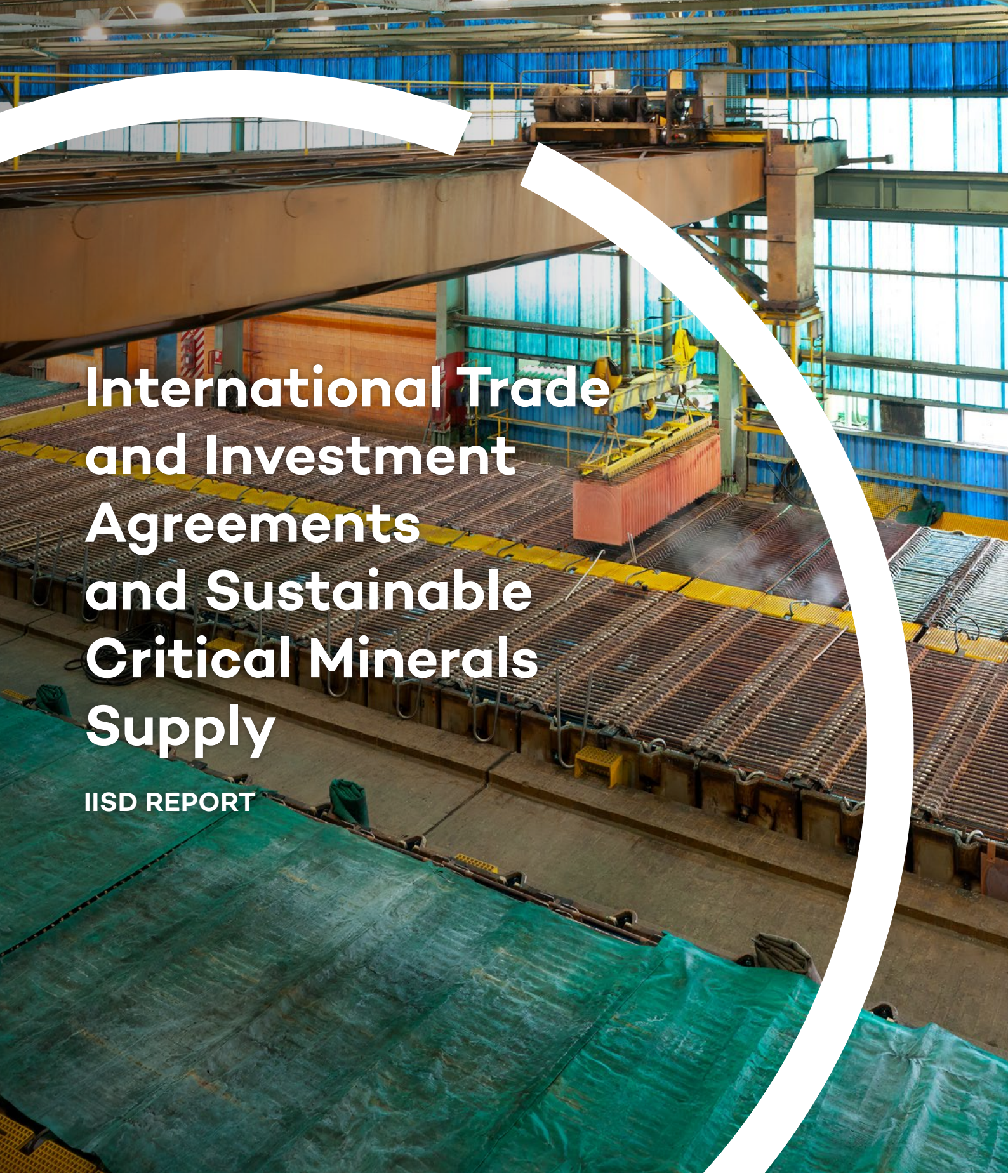

International Trade and Investment Agreements and Sustainable Critical Minerals Supply

IISD REPORT

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International Institute for Sustainable Development

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Executive Summary

The global energy transition is increasing the demand for critical minerals that are essential for clean energy technologies, in parallel to the long-standing demand from ongoing digital transitions. Mineral-rich countries in developing and emerging economies have a unique opportunity to capture economic benefits through the responsible mining and processing of these minerals. Net importing countries must also secure access to minerals to enable their transitions, but in ways that do not compromise the development needs of producers.

Trade and investment agreements can play a crucial role in defining the relationship between predominantly mineral-exporting and mineral-importing countries—getting them right is essential to creating resilient and responsible supply chains. In the past, these agreements have tended to prioritize the security of access to resources and the protection of foreign investment. But today, the growing demand for critical minerals and their very specific locations creates the possibility for developing economies to use trade and investment agreements to capture a greater share of economic benefits by securing more space for industrial and development policies. Consumer awareness of the social and environmental costs of mining is also rising, such that producing governments, mining companies, and importing countries all have an interest in ensuring that expanded production is socially and environmentally responsible. Trade and investment agreements can shape the extent to which mining activities meet environmental, social, and governance (ESG) objectives. Given the confluence of interests on this issue, it would be logical to see more ESG provisions in agreements covering the extraction of critical minerals.

This report seeks to assess the current state of play by examining the body of trade and investment agreements by asking: to what extent do current and emerging trade and investment agreements reflect a changing balance between the interests of exporting and consuming countries in the supply chains of critical minerals, including economic development and environmental and social objectives? And what are short-term priorities for improving practice? Without questioning the crucial importance of offtake agreements and small- and medium-scale mining, this report has a limited scope and zooms in on large-scale mining and government-to-government agreements.

Our analysis is based on a review of over 100 trade and investment agreements and Memoranda of Understanding (MOUs), including a focus on the agreements signed by governments of three case study states—Indonesia, Chile, and the Democratic Republic of the Congo (DRC). We supplemented this analysis with interviews with experts, policy-makers, and industry officials. The review focused on examining the extent to which these agreements reflect the following three objectives:

1. supporting the economic development of mineral-rich countries,
2. securing a stable supply of raw materials for importing nations, and
3. enhancing the environmental and social outcomes of mining activities.

Overall, the review confirms that despite sharing a similar ultimate goal—responsible mining—exporting and importing countries often have different perspectives and primary objectives, which leads to difficult trade-offs. Mineral-exporting countries often seek to maximize economic benefits from their natural resources, diversify export destinations, and develop downstream processing capabilities. In contrast, large importing countries prioritize securing a stable and affordable supply of raw critical minerals, often seeking to minimize export restrictions and maximize access to the resource, including through investment protection. A key point of tension is that exporting and consuming countries appear to have opposing interests in terms of promoting refining and processing: exporting countries have in place policy objectives to maximize value addition domestically while importing countries have policy objectives to try to capture raw minerals to then process them themselves (within or outside of their jurisdiction) at the lowest cost so they can be used in downstream component and technology production.

We also identify the following trends with respect to different forms of trade and investment agreements:

Free Trade Agreements (FTAs)

- **Trends**: FTAs are increasingly incorporating provisions specific to critical minerals. Agreements between mineral-producing countries and the European Union (EU), in particular, include dedicated clauses and chapters on natural resources and critical minerals. Most of these provisions are designed to secure stable and affordable supplies of critical minerals. New trade and investment agreements also increasingly include ESG provisions, but we find that this tends to use non-binding language with few enforceable standards.
- **Negotiation space**: FTAs present immense possibilities for importing and exporting countries. The cases of Chile and Indonesia demonstrate that developing and emerging economies can use their negotiating leverage to negotiate FTA provisions that protect space for industrial policy objectives. Indonesia's FTAs, for example, do not include any additional limits on export restrictions (which Indonesia uses frequently) beyond what it had already agreed to in the World Trade Organization. Chile's FTA with the EU explicitly protected its current industrial policy settings for key critical raw materials, including, among other things, a dual pricing system for lithium. This policy space can come at a price, however, and protection for industrial policy measures usually must be traded off against other offensive and defensive objectives in each negotiation. At the same time, FTAs provide an opportunity for importing countries to contribute to supply chain resilience by supporting value addition in exporting countries. Although non-binding, specific provisions on responsible and sustainable business practices will benefit both sides in the long run as they steer countries into implementing better practices.

International Investment Agreements (IIAs)

- **Trends**: The global trend regarding IIAs has been to move away from old-generation treaties that prioritized the interests of foreign investors to the detriment of the host state government's policy space, but many of these old-generation IIAs continue to be

in force. Generally, old-generation IIAs do not contain any provisions regarding ESG standards, subordinating the goal of responsible investment to the goal of investment protection. Older IIAs also generally do not specify any sector and, as a result, do not contain provisions specifically applicable to critical minerals. Such agreements have, however, tied the hands of governments producing critical minerals, making it harder to adopt investment policies aimed at capturing increased domestic value addition for producers or implement more advanced ESG standards. Newer IIAs contain provisions designed to better balance investment protection with producer governments' policy space. They have also started to include provisions aimed at improving ESG standards applicable to foreign investments but use exhortative language rather than enforceable standards.

- **Negotiation space**: The increased demand for critical minerals has boosted efforts to reform old-generation IIAs to better align them with producing countries' objectives. However, the results of these efforts have been uneven, as the three case studies show. Chile has had a consistent IIA approach to protecting greater policy space in its newer treaties and excluding certain natural resources, including lithium, from various treaty commitments on investment. It has also been making efforts to renegotiate its stock of old-generation IIAs to reflect its current policies, with a degree of success. Similarly, Indonesia has unilaterally terminated a significant portion of its older IIAs because they unduly restricted the country's policy space and exposed the country to litigation risks. At the same time, Indonesia has been concluding newer IIAs that aim to address some of the shortcomings of its older treaties. Some of its newer IIAs exclude natural resources from their coverage. Finally, the DRC has a small number of old-generation bilateral IIAs that significantly restrict its policy space regarding mid- and downstream industrialization policies. These treaties protect foreign investors operating in the DRC from various governmental policies. There are no indications that the country actively aims to reform these IIAs. At the same time, the country is a party to various innovative regional IIAs that prioritize the developmental objectives of critical mineral-producing countries and set high ESG standards. The three case studies show that the decentralized nature of the IIA regime creates a challenge for developing and emerging economies to coherently reflect their objectives in their IIAs. The context of increasing demand for critical raw materials, however, presents these countries with leverage to pursue this coherence more effectively.

MOUs

- **Trends**: MOUs have emerged as a tool for international cooperation on critical minerals, offering a more flexible and faster way of establishing a framework for addressing the divergent goals of mineral importers and exporters than full-blown FTAs. The additional advantage of using MOUs is that they allow countries to focus on priority issues in critical minerals, rather than trying to address them in the context of complex, multi-faceted negotiations over several sectors at once. The trend indicates that mineral-importing countries, such as the EU and the United States, are more actively seeking to establish these agreements to secure reliable sources of minerals essential for the energy transition and technological advancements while hedging against geopolitical risks. Simultaneously, mineral-producing countries are entering

into these agreements to attract investment, gain technological support, and enhance their positions in global supply chains.

- **From negotiation to practical implementation**: Despite their promise, the practical impact of these MOUs is limited so far. In the DRC, for example, an MOU with the EU has led to practical cooperation activities in the form of academic exchanges, and in Chile's case, an MOU with the EU has served to facilitate involvement with the private sector. However, it is not yet clear that MOUs that seek to support investment in downstream activities in mineral-producing countries will manage to do so, given the pressures in consumer countries to capture a share of that same value addition (which can include processing, but certainly component and technology manufacturing). Similarly, while MOUs between countries show promise in addressing ESG concerns, they are often broad and vague, and in many cases, they lack transparency. More robust implementation frameworks would help to ensure meaningful improvements in responsible mining practices. Significantly, ESG language in MOUs is not likely to override strong investment protection standards contained in the countries' IIAs, which can constrain the government's policy space in implementing higher ESG standards.

Recommendations for Exporting Countries

- Trade agreements can be used to leverage additional access to critical minerals for trade partners in exchange for market access concessions in other sectors.
- To make the best use of this opportunity, mineral-rich countries should go into trade negotiations with a clear evaluation of their critical minerals policy, what industrial measures and options they wish to protect in light of their long-term strategies, and how much leverage they have to secure these protections. These defensive interests can then be carefully weighed against the demands for access to raw materials from negotiating partners and potential gains from the agreement. In the past, EU Economic Partnership Agreements have seen conflicts between the EU's goal of establishing access for their industry and partner countries' desire to protect their own industries, but that balance may have shifted over the need to secure and diversify supply chains for critical minerals.
- Where relevant, regional approaches might be important for looking into opportunities to scale up production and add more regional value to gain a more competitive position within the global value chains.
- Regarding investment agreements, exporting countries should consider terminating or reforming old-generation investment agreements to secure the policy space needed to advance their national industrialization and development goals, particularly in leveraging raw minerals.
- When negotiating new investment agreements or replacing outdated ones, mineral-rich countries should ensure that the agreements provide sufficient policy space to implement their national strategies for critical minerals, avoiding broad and rigid provisions without exceptions or limitations. In doing so, exporting countries should also prioritize embedding ESG standards at the core of their investment agreements to ensure responsible mining practices that benefit both communities and the planet.

This can be achieved by including robust, enforceable provisions that hold investors accountable for sustainable practices and governments responsible for enacting and implementing the necessary national policies and regulations.

- In the process of negotiating or renegotiating investment treaties, exporting countries should aim for greater coherence between their bilateral investment treaties and multilateral and regional investment agreements, as well as their existing MOUs.
- MOUs act as an important enabler for the faster conclusion of trade agreements and IIAs and complement existing ones, as they are quicker to conclude and easier to implement. If leveraged better, MOUs can allow countries to not only address and gain progress on key cooperation programs in trade agreements but also innovate new ways to strengthen existing partnerships before implementing them more systematically in trade agreements and IIAs. However, to be truly impactful, they must evolve to be more transparent, include actionable plans and frameworks for making parties more accountable, and allow better monitoring and review within the bilateral relationship.

Recommendations for Importing Countries

- Trade agreements are an opportunity to create meaningful partnerships and support value addition in exporting countries, as well as support the entry of more countries and companies into the processing and refining of critical minerals and manufacturing of components and technologies. This diversity is important for the political and physical resilience of supply chains. Considering a regional approach, where appropriate, and aiming to support and strengthen the development of regional value chains could add important benefits to developing countries. Designing agreements to leave policy space for measures that help advance exporting countries' industrial policy objectives could be seen not as a loss in a zero-sum competition for processing capacity but as an investment in the resilience of critical mineral supply.
- Importing countries should be prepared to reform their old-generation investment agreements, as these treaties, even with strong investment protections, do not necessarily guarantee higher investment outflows or greater access to raw materials from mineral-rich countries. It is crucial for importing countries to recognize the potential risks that their investors abroad pose to their ability to regulate effectively and uphold their own ESG standards and energy transition policies.
- Importing countries have a long-term interest in ensuring that their investors abroad operate in line with ESG standards that would apply in their own jurisdictions. By embedding responsible and sustainable business practices into reformed or new investment agreements, importing countries can help ensure that investments abroad fulfill their intended benefits in exporting countries. This approach is more likely to contribute to securing and maintaining the "social licence" to operate in raw materials, thereby reducing the risk of conflicts and obstacles to accessing raw minerals.
- While MOUs are potentially flexible instruments to improve bilateral relations, they risk leading to unmet expectations if they are not followed with frameworks and collaborations to implement their objectives. Importing countries should be prepared to invest resources into the practical implementation of MOU objectives.

Recommendations for Donors, International Organizations, and Independent Think Tanks

- New-generation trade agreements are increasingly complex, and critical mineral provisions are only one of many interconnected elements and trade-offs. Donors, international organizations, and independent think tanks have an important role to play in re-imagining how trade commitments across goods, services, and regulatory chapters can be designed to move beyond zero-sum outcomes to build longer-term frameworks for cooperation. Currently, World Trade Organization rulemaking process seems to be stagnating, and the development of FTAs and MOUs shows that countries are seeking alternatives through the bilateral track.
- Donors, international organizations, and independent think tanks should advocate for the reform of old-generation investment treaties to prioritize a common-interest approach that aligns with shared values and addresses the concerns of all stakeholders, including the ability to finance value addition in exporting countries. They should emphasize the importance of rethinking investment agreements to ensure they are equitable and beneficial for all parties, especially in the context of raw materials.
- Donors, international organizations, and independent think tanks should support importing and exporting countries in developing new models for investment treaties that align with global objectives while catering to their specific needs. They should propose alternative models that help countries balance international standards with their unique contexts regarding raw materials and ensure fair access and sustainable use.
- Donors, international organizations, and independent think tanks should continue to review and monitor existing MOUs and their implementation status. Outlining and analyzing the existing and potential mechanisms to implement MOU provisions for responsible mining can contribute to finding a workable balance between the objectives of importing and exporting countries.

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Abbreviations and Acronyms

ACF	African Climate Foundation
AfCFTA	African Continental Free Trade Agreement
BIT	bilateral investment treaty
CEPA	Comprehensive Economic Partnership Agreement
CMA	critical minerals agreement
Codelco	Corporación Nacional del Cobre (National Copper Corporation)
COMESA	Common Market for Eastern and Southern Africa
CPTPP	Comprehensive and Progressive Agreement for Trans-Pacific Partnership
CRM	critical raw material
CSR	corporate social responsibility
DRC	Democratic Republic of the Congo
EAC	East African Community
EFTA	European Free Trade Agreement
ESG	environmental, social, and governance
EU	European Union
EV	electric vehicle
FDI	foreign direct investment
FET	fair and equitable treatment
FTA	free trade agreement
GATT	General Agreement on Tariffs and Trade
GDP	gross domestic product
IEA	International Energy Agency
IGF	Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development
IIA	international investment agreement
IPEF	Indo-Pacific Economic Framework for Prosperity
IRA	Inflation Reduction Act
IRMA	Initiative for Responsible Mining Assurance
ISDS	investor–state dispute settlement

MOU	Memorandum of Understanding
OECD	Organisation for Economic Co-operation and Development
PRC	People's Republic of China
POI	Protocol on Investment
R&D	research and development
RCEP	Regional Comprehensive Economic Partnership
REIO	regional economic integration organization
SADC	Southern African Development Community
SOE	state-owned enterprise
UAE	United Arab Emirates
VCLT	Vienna Convention on the Law of Treaties
WTO	World Trade Organization
UNCTAD	UN Trade and Development

1.0 Introduction

As the world attempts to accelerate the energy transition to a pace needed to avoid catastrophic climate change, the demand for critical minerals that are essential for clean energy technology is expected to boom. In parallel, growth in demand is also being driven by the digital transition. The value chain for these minerals, comprising exploration, extraction, processing, and manufacturing, provides opportunities not only to deliver a rapid energy transition but also to support a just transition in emerging and developing economies. Responsible mineral supply chains are essential for ensuring the security of supply across upstream, midstream, and downstream segments while minimizing environmental and social impacts (Bellois & Ramdoo, 2024; Ramdoo, 2024). These objectives are especially pertinent for emerging and developing economies, as they experience the impacts of climate change while also striving to secure their position in clean energy supply chains and capture more of the value added to create sustained economic growth to improve the well-being of their populations.

The demand for five key critical minerals—lithium, copper, cobalt, nickel, and neodymium—is projected to surge between 1.5 to 7 times by 2030 under the International Energy Agency's (IEA's) Net Zero Emissions by 2050 Scenario, as the deployment of clean technologies soars (IEA, 2023b). However, this rapid increase in demand is set against a backdrop of potential shortages as projected demand growth outstrips the current and projected supply capacity of certain critical minerals. Current projections indicate a shortfall of 60% for nickel sulphate and 35% for lithium, relative to what is required for the Net Zero Emissions by 2050 Scenario (IEA, 2023b).

To align mining capacity with the ambitious net-zero goals, the IEA estimates that an investment of USD 800 billion is needed by 2040 (IEA, 2024b). While recycling is recognized as a key component in reducing the pressure on raw materials, it is currently expected that it will not account for more than 20% of the material demand for key minerals, such as nickel, lithium, cobalt, and copper, before the 2040s, given the substantial demand growth rates in the initial decades (IEA, 2023a). As a result, there is a high likelihood that there will be a push for more mining.

There will also be a push for more trade in key minerals. The value of global trade in critical raw materials (CRMs) has increased, outpacing the growth of overall merchandise trade. Between the periods of 2007–2009 and 2017–2019, CRM trade expanded by 38%, compared to a 31% growth in the trade of all products, a trend that has been further amplified in the subsequent years, particularly driven by the energy transition boom catalyzed by post-COVID stimulus packages. In this context, key battery minerals, such as lithium, manganese, graphite, and cobalt, have seen the highest trade growth of all minerals (Kowalski & Legendre, 2023).

This paper narrows its focus to critical minerals needed for the energy transition and, more specifically, to countries that are active in upstream mining and seek to deepen processing and refining into component manufacturing. It aims to provide policy-makers in mineral-exporting developing economies and mineral-importing countries with insights from current practice in the development of trade and investment frameworks that can help mineral-exporting

economies to create more secure, responsible, and valuable critical mineral value chains that support their own economic development alongside delivering the minerals needed for the global energy transition.

While we acknowledge the significance of business-to-business relationships, including to increase environmental, social, and governance (ESG) standards through long-term offtakes and equity investments, the scope of this paper is limited to government-to-government interactions and therefore analyzes international economic agreements, specifically trade and investment frameworks. We utilize this preliminary typology of "trade and investment frameworks," which include Strategic Partnerships and Memoranda of Understanding (MOUs), as well as existing and new trade and investment agreements.

This focus on government-to-government agreements does not intend to underestimate the crucial importance of long-term, private offtake agreements in realizing the same objectives trade and investment agreements can have for both importers and exporters. Long-term offtakes are fundamentally important instruments in high-risk industries like mining, which has high capital expenditures. They bring a binding contract on the quantity and price of a producer's output, and as such, they help miners and exporters have more security over their revenue outlook. They can also include provisions on processing, technology, and ESG standards.

Box 1. A word on terminology: Free trade agreements, investment treaties, framework agreements, and MOUs

In the context of international economic law, free trade agreements (FTAs) and investment treaties are generally considered traditional treaties. According to the Vienna Convention on the Law of Treaties (VCLT), a treaty means "an international agreement concluded between States in written form and governed by international law, whether embodied in a single instrument or in two or more related instruments and whatever its particular designation" (VCLT, art. 2(1)a). A treaty's conclusion is governed by international law, whereby the appropriate representatives represent a state and the state expresses its consent in specific ways (VCLT, Part II, Section 1). These agreements are intended to create legal rights and obligations.

MOUs and other agreements of various denominations (e.g., joint statements, communiqués) that do not intend to create legal rights and obligations are generally referred to as "non-binding agreements" (in this report, we use "frameworks" to refer to both legally binding and non-binding agreements). These agreements often signal political commitment and the direction of development of international relations that the participating parties intend to take. For example, MOUs can establish channels of discussion on certain topics or provide a framework for businesses and investors to use to conclude their own cooperation agreements. Often, MOUs are accompanied by a joint roadmap for operationalizing their commitments.

While the denomination of binding and non-binding agreements may vary greatly, whether they bind as a matter of law always depends on their content. In other words, an MOU may create a legally binding obligation or some legally protected expectation if its content suggests so, despite being called an MOU (see Brewin, 2023). Conversely, while MOUs may be legally unenforceable by their own language,[1] they may shape the normative expectations and conduct of their parties.

Recently, the use of MOUs and other forms of non-binding international agreements has been on the rise. As a result, various international bodies as well as authors have been analyzing the implications of their increased popularity (see, e.g., Bradley et al., 2023; Committee of Legal Advisers on Public International Law, 2021; International Law Commission, 2024; Hollis, 2024).

[1] See, for example, the MOU between the European Union (EU) and the Democratic Republic of the Congo (DRC) here (in French): https://single-market-economy.ec.europa.eu/document/download/59450669-1449-46bc-b4c9-6561acfbf670_fr?filename=MoU_EU-DRC_signed_fr.pdf&prefLang=en

2.0 Structure and Methodology

To understand the challenges and opportunities for trade and investment frameworks on critical minerals and sustainable development, we first explain the nature of critical mineral value chains (Section 3) and the differing objectives of mineral-consuming and producing countries (Section 4). We then look at how existing trade (Section 5) and investment (Section 6) agreements can affect critical minerals. Finally, we explore three case studies of trade and investment frameworks in Chile, the DRC, and Indonesia (Section 7).

The goal of our case study analysis is to understand how trade and investment agreements and non-binding agreements, such as MOUs, balance out the three objectives: securing supply, fostering responsible production, and supporting the economic development of developing and emerging mineral-rich economies.

We selected case studies with the purpose of better understanding agreements that have a significant impact on trade in critical minerals that are of core relevance to the energy transition. For this report, we zoom in on copper and battery minerals. We also selected case studies that have three critical mineral-producing countries at different levels of economic development but nonetheless with processing expertise and assets that could be deepened to connect to industrial manufacturing. For example, both Chile and the DRC have copper processing and refining infrastructure. Because of lower ore grades and Chinese competition, Chile has started exporting more concentrates than refined copper cathodes. The DRC, on the other hand, nearly exclusively exports refined copper cathodes. Chile also has expertise in refining lithium chloride from brines into battery-grade lithium carbonate. With respect to cobalt, the DRC also processes raw cobalt ores into the higher-value cobalt hydroxide. It, however, does not produce battery-grade cobalt sulphate. Finally, Indonesia has been adding, and continues to add, processing infrastructure to turn raw laterite sources of nickel into battery-grade nickel.

The case studies are based on a detailed review of the trade and investment agreements concluded by those three countries, complemented by in-depth interviews with experts, former and current policy-makers, and industry officials. They were selected to cover a diverse range of minerals, geographic regions, and income levels per capita, as summarized in Table 1.

Table 1. Case study coverage of minerals, geographic areas, and income levels

	Mineral endowment	Geography	GDP per capita
Indonesia	Nickel, cobalt	Southeast Asia	Medium
Chile	Copper, lithium	Latin America	High
DRC	Cobalt, copper	Africa	Low

Note: GDP per capita levels are based on World Bank Development Indicators.
Source: Authors' summary.

3.0 Mineral Value Chains and Security of Supply

The value chain of critical minerals is a complex and interconnected process that is crucial for ensuring a secure and sustainable supply. It encompasses three main segments: upstream, midstream, and downstream, each playing a pivotal role in the overall chain.

The upstream segment is the initial phase, focusing on the exploration and extraction of critical minerals. It involves prospecting and exploring activities to locate mineral deposits, constructing facilities, and then extracting minerals. This stage offers producing countries the opportunity to benefit from the extraction of their resource endowment, including through methods they already use, such as taxes, royalties, export revenues, jobs, local content procurement, and so forth. That said, it also presents ESG challenges, as well as the need for substantial investment and technical expertise to improve responsible mining practices (Bellois & Ramdoo, 2024).

The midstream segment—or beneficiation—involves processing and refining the extracted minerals into higher-purity forms that can be used by several industries. In this stage, the value of critical minerals increases alongside their purity levels, and processing might be of interest to producing countries to increase revenue. While it is well known that the People's Republic of China (PRC) is currently dominating critical mineral processing and refining worldwide,[2] it is important to note that several developing economies already process minerals domestically, at least to some extent. For example, nearly all of the copper produced in the DRC is processed before it is exported (Ramdoo, 2024). However, processing also requires significant technological capabilities and can be energy intensive.

The downstream segment refers to the part of the value chain where refined minerals are further transformed into semi-manufactured inputs used in the manufacturing of various energy transition technologies, such as batteries and renewables or in final goods. This stage realizes the highest value from critical minerals, offering the highest benefits for countries. It is crucial for end users across various industries. For developing economies, integration into global supply chains at this stage can bring significant benefits but demands high technological capabilities, market access, and investment.

Finally, at the very end of the life cycle, end-of-life products like lithium-ion batteries in electric vehicles (EVs) or grid storage systems can be recovered, recycled, and re-processed to offer a circular supply of critical minerals.

For emerging and developing economies, establishing supply chain security over critical mineral value chains is important for economic growth, technological development, sustainable resource management, and energy security. Generally, the larger the share of

[2] It is important to note that China is both a consuming and producing country. For example, it produces large percentages of global graphite, germanium, gallium, and rare earths. However, its main dominant position is found in the processing of critical minerals, for which it is the world's largest raw mineral importer from overseas (see IEA, 2024b).

supply chains that can be secured, the greater the benefits. Accomplishing this can require investments in technology and skills development and the creation of regulatory frameworks that encourage ESG-compliant mining. Typically, it also requires international partnerships and agreements to facilitate trade and investment in ways that support energy transition and enable inclusive and environmentally sustainable development in countries along the value chain.

4.0 The Differing Objectives of Exporters and Importers

International economic agreements serve to help secure supply chains by setting trade policies that make them more predictable. These agreements can contribute to establishing clear rules regarding access to markets for investments, goods, and services and reducing regulatory barriers. Additionally, they can set up important cooperation mechanisms, creating frameworks for technical assistance, capacity building, transparency, information exchange, and broader technical cooperation. The main challenge of any trade and investment agreement is that the objectives of consuming and producing countries can be very different. Agreements ultimately involve negotiating a compromise between the different objectives of exporters and importers, as summarized in Table 2 and further elaborated in sections 4.1 and 4.2.

Table 2. Countries' interests in setting objectives in trade and investment agreements

	Producing countries	**Consuming countries**
Security of supply	• Diversifying buyers and investors • Creating market predictability	• Diversifying suppliers • Securing affordable offtakes for downstream developers
ESG performance	• Improving the environmental impacts of mining • Improving benefits for local and Indigenous communities • Improving overall social licence to produce minerals	• Using ESG performance as criteria for accessing subsidies or other incentives • Generating interest from the investor and consumer communities • Improving overall social licence to produce minerals
Economic development of mineral-rich countries	• Capturing more economic benefits from mineral production (within the sector and in terms of industrialization) • Capturing more value in the supply chain (beneficiation and downstream manufacturing)	• Improving geopolitical status as a supporting development partner • Strengthening supply chain resilience in the mining country through domestic processing and value addition in exchange for the offtake of critical minerals

Source: Authors' summary.

4.1 Objectives of Exporting Countries

Producers of critical minerals in developing and emerging economies can be interested in leveraging trade and investment frameworks for several reasons. With respect to revenue generation, mining countries often seek to develop bankable projects, both for their own state-

owned enterprises (SOEs) and for international companies. Many mineral-rich countries rely on the mining sector for a large share of their fiscal revenue, and so they may seek new trade and investment agreements to help expand existing projects and even develop new greenfield projects.

Well-designed trade agreements could also help boost exports and diversify export destinations for mineral-rich countries so that they are not dependent on a single buyer. Like many consuming countries, producing countries can also be concerned about the concentration of market power in certain segments of the supply chain. Countries may also hope that new, well-designed investment agreements can eventually help with attracting investment and technology transfer, even if this objective has often not been met through investment agreements in the past (see Section 6).

Besides project development, many producing countries are also intent on harnessing their mineral resources to secure broader economic benefits from their production. This drive for economic gains is currently often concentrated on more downstream development through processing and manufacturing. Mineral-rich countries could also include ex-ante conditionalities within which projects can take place, including ESG criteria that can reduce environmental impacts and help increase the social licence to mine (Transport and Environment, 2023).

The African Climate Foundation (ACF) (2023) emphasizes that the potential developmental outcomes associated with the mineral endowment of producing countries are ultimately contingent upon several pivotal factors, such as the extent to which these countries recognize the strategic value of their mineral assets and are focused on fostering regional industrialization and creating production linkages. Another factor hinges on the ability of governments and their actors to resist being influenced by narrow interests, such as the distribution of rents to political affiliates. Instead, according to the ACF, producing countries should aim to stipulate additional investments and technology transfers as conditions for mineral development rights. Another important factor involves the complex geopolitical landscape these governments should navigate within and their capacity to form international alliances that bolster their industrialization strategies (ACF, 2023).

4.2 Objectives of Importing Countries

The ambitions of producing countries can be at odds with those of importing countries, which are mainly interested in improving the resilience of critical mineral supply chains. These countries have the ambition to use trade and investment frameworks to help diversify the origins of supply, which is imperative to reduce reliance on a single source, which can threaten energy security and the security of supply for digital transformation. For example, import dependencies for Organisation for Economic Co-operation and Development (OECD) countries on non-OECD suppliers are higher for CRMs than for other products (Kowalski & Legendre, 2023).

Large importing economies often have some reserves of critical minerals, but these are either insufficient to meet demand or difficult to extract due to a variety of political and economic reasons. Large importing countries are typically also keen on processing minerals

domestically since processed materials have a higher value (similar to refined oil products). As a result, from both an economic and supply security standpoint, consumers want to diversify processed material supply away from the PRC, including by processing them themselves so their downstream producers have a reliable supply, even if that can be a very expensive endeavour. This is an especially salient feature in countries like the United States and the EU, where the final rules of the 45X tax credit and the Critical Raw Materials Act are both aimed at improving the competitiveness of domestic processing (Baskaran & Schwartz, 2024; Regulation (EU) 2024/1252, 2024). Similarly, the PRC is also interested in maintaining its dominance in mineral processing. This means that large consumers may have their own interests in securing the supply of early-value-chain minerals to feed growth in their own processing or manufacturing capacities.

Importing countries can aim to use international economic agreements to establish clearer rules, reduce trade barriers, and create more predictability, which is essential for long-term planning and investment. For example, trade agreements may not only reduce trade barriers but also support the trade of infrastructure and technology that improve the efficiency of mineral production and processing. The three largest importers of critical minerals worldwide are the PRC, the EU, and the United States (see Box 2 for a summary of their major activities and positions to date).

4.3 Trade and Investment Agreements as a Pathway to Sustainability

Trade agreements can offer meaningful pathways to sustainability-oriented partnerships that support the objective of increasing domestic added value for mineral producers, prioritizing their development (ACF, 2023). This approach can be achieved through ex-ante conditions for access to a market, specifying the sectors that are open to foreign involvement and under what conditions, including business models and ESG criteria. Investment agreements—which have historically offered little in terms of ex-ante pre-establishment conditions—can help improve the post-establishment operation of the investment by clarifying states' and investors' rights and obligations if they are well designed.

Today, however, the economic, social, and environmental impacts of such provisions have been highlighted as negative for host states, bringing more costs without corresponding benefits. The challenge in different priorities indeed means that trade and investment frameworks should be analyzed from the perspective of those different objectives for the different trade and investment partners. They should be developed with the objective of striking a better balance between the contrasting objectives of large, wealthier country importers and developing and emerging country exporters than similar instruments have in the past.

Box 2. Net importer objectives: China, the EU, and the United States

China

China has invested for more than two decades in mineral projects abroad in over a dozen countries across the world. This has also included buying up equity stakes in mining companies (U.S. Department of the Interior, 2012). Under its Going Global policy, China started acquiring minerals all over the world in the first decade of the new millennium. For example, in 2011 alone, the Bank of China provided billions in loans for foreign mineral acquisitions (Humphries, 2015). This happened through long-term offtake contracts and, as time passed, increasingly through equity investments and joint ventures.

These joint ventures were often established through Chinese SOEs and have also involved state financing (Humphries, 2015). In 2015, the Belt and Road Mining Industry Development Fund was officially launched in China, which increased its ambition and financing for mineral resources, infrastructure, and related industrial chains in Belt and Road Initiative countries (IEA, 2024a). This led to China's National Plan for Mineral Resources 2016–2020, which listed 24 strategic minerals and focused on using international cooperation to secure the supply of raw materials (IEA, 2024a). In its most recent 14th Five-Year Plan (2021–2025), China targeted high-quality development in resource-rich countries (IEA, 2024a) and has been investing strategically throughout the world. In 2023, Belt and Road Initiative investments in metals and mining stood at USD 19.4 billion (Els, 2024). The exact willingness of China to export processing technology is not clear, but it seems China is willing to help develop some processing projects in mineral-rich countries in exchange for the offtake of the produced mineral to support its higher-value downstream manufacturing.

Today, China plays an outsized role in critical minerals markets. While this report mainly looks at trade and investment agreements between large mineral-rich exporters and large importers such as the EU and the United States, China is actually the largest importer of most critical minerals. It has reached that position through a combination of financing, long-term offtake agreements, and equity investments through which it can control the export destination of raw and processed materials. Chinese companies are important shareholders in key companies in all three case study countries. For example, globally speaking, Chinese incorporated companies hold around 40% of ownership of cobalt and nickel mining and around 20% of lithium mining (IEA, 2024b).

European Union

The EU has developed the idea of a Critical Raw Materials Club with allied partners who share the objective of strengthening global supply chains. This group of partners is now part of the Mineral Security Partnership. The EU is also working on strengthening trade and investment partnerships to secure CRMs, among others, via the EU's Global Gateway initiative—its flagship infrastructure and the economic partnerships initiative through which the EU seeks to invest directly in third-party infrastructure. At the political level, there is a consensus that there needs to be a more concerted effort to build trade and investment relations with non-EU partners, and the Global Gateway Initiative is supposed to mobilize EUR 320 billion for this, of which EUR 150 billion will

go to Africa. This financing also includes private investments focused on digital, energy, transport, and other infrastructure (Acheampong, 2024; Allianz, 2023; Münchmeyer, 2023; Transport and Environment, 2023).

The EU's main piece of legislation, the European Critical Raw Materials Act, has minimum requirements to extract, process, and recycle within the EU, as well as targets for how large a percentage of critical minerals can be imported from a single country (Regulation (EU) 2024/1252, 2024). The EU has imposed higher import duties on downstream products from countries that have policies in place to encourage local processing of raw materials (Crochet & Zhou, 2023) and has initiated World Trade Organization (WTO) dispute settlement proceedings against Indonesia for its raw material export restriction that was intended to bolster domestic processing. Finally, the EU's carbon border adjustment mechanism would also have a substantial impact on mineral markets as the carbon footprint of some minerals is higher than that of their competitors. This is, for example, the case for nickel and aluminum that are refined using coal-fired power.

United States

The United States is seeking more international engagement to secure mineral supply. In 2020, the Department of Commerce identified a number of action points to improve the United States' critical minerals security. This included provisions on enhancing international trade and cooperation related to critical minerals. The Department of Commerce report highlights that the United States Geological Survey has several MOUs with partner countries' geological surveys to conduct research. Those MOUs have led to several joint activities. The Department of Commerce report recognizes that international trade agreements with partner countries are an important way to improve the security of critical minerals supply (U.S. Department of Commerce, 2020). The Biden administration also started developing cooperative strategies in dedicated critical minerals agreements (CMAs) and strategic partnerships.

There are, however, also clear policy preferences for domestic value addition in the United States. The Inflation Reduction Act (IRA) includes local content requirements for the purchase of new EVs to be eligible for subsidies. EV assembly and battery components can only come from North America for the vehicle to be eligible for a tax break. Critical minerals used in those EV batteries, as well as cathode and active materials, can only come from North America and countries with which the United States has a trade agreement. As the definition of "free trade agreement" used in the IRA is neither provided in the legal act itself nor anywhere else in U.S. law, the U.S. executive branch has been using its discretion to decide what countries and what agreements qualify as "free trade agreements" for the purposes of the IRA. The Biden administration has concluded a mineral-specific agreement with Japan, making Japan's exports IRA-compliant, but this has led to some pushback in Washington with several policy-makers and legal experts who consider that a stretch of the FTA concept (Harris, 2023). Finally, the United States has also initiated a production tax credit for processing within the United States, which covers raw material acquisition abroad under the coverable production costs in the claim of the tax credit (U.S. Department of the Treasury, 2024).

5.0 Relevance of Existing Trade Agreements

5.1 History of Trade Agreements for Critical Minerals

Over the last 3 decades, international trade policy's potential to contribute to sustainable development has become widely accepted. Yet bilateral, plurilateral, and multilateral trade agreements have often been scrutinized and criticized for not delivering on this potential or even having potentially damaging effects on different aspects of sustainability (Moïsé & Rubínová, 2021).

The deteriorating multilateral trade policy landscape in recent years has resulted in a new era of fragmented rules and diminishing multilateral governance, challenging the status quo of global trade operations (Dadush et al., 2020). The causes of this deterioration have been frequently discussed. Besides the often-mentioned China–U.S. "trade war," there is the broader challenge of balancing the interests of economic superpowers and developing economies that seek to grow and industrialize fast.

Since the global financial crisis, there has been a marked shift in the types of trade-related measures that countries employ. The most prevalent measures include subsidies to local firms, import tariffs, and state support for export transactions or foreign investments. While import licences and quotas are less commonly used, subsidies for local firms have notably increased. This trend underscores a growing focus on bolstering domestic capabilities, including in critical mineral sectors in mineral-rich countries. Unilateral measures affecting CRM markets, although less frequent compared to other markets, tend to more often take the form of export controls or restrictions. China has been a dominant player in this space (Kowalski & Legendre, 2023).

The rise in export restrictions over the past decade has significantly impacted the global CRM market. According to a quantitative review by Kowalski and Legendre (2023), the number of such restrictions has increased fivefold. Restrictions on the export of primary raw materials such as ores and minerals have grown even faster than restrictions on processed minerals. The authors point out that countries leading the implementation of new export restrictions include China, India, Argentina, Russia, Vietnam, and Kazakhstan. The most frequent restriction used in 2020 was export taxes, which are permissible under WTO rules, unlike quantitative export restrictions. The second-most common measure was the imposition of export licensing requirements (Kowalski & Legendre, 2023).

5.2 FTA Negotiations and Relevant Provisions for Critical Minerals

Negotiators of FTAs are often faced with unavoidable trade-offs between opening up markets for their export sectors and protecting import-competing industries. There are also other important interests that weigh on FTA negotiations, such as increased investment in specific sectors and stronger economic integration of like-minded economies.

By their nature, FTAs will have provisions limiting the policy space of governments to take certain measures or decisions (like raising tariffs above the level agreed). Negotiations are meant to ensure that the balance is struck at a point where both parties accept such limitations and feel that the total sum of their gains and concessions is worth the price they are paying. Interviewees for this publication confirmed that their CRM sector's interests in such negotiations are weighed against the interests and red lines of other sectors. The more prominent CRMs are in a specific country's economy, the more important a role they will play in the FTA negotiations.

Producing countries that want to develop local processing capacities and increase domestic value added often employ trade instruments to secure competitive advantages for their domestic industries. Their objectives in a trade negotiation are often to preserve space for those protective instruments. More favourable access to their CRMs can be used as an important card in such negotiations to help negotiate other provisions that are seen as strategically important for their economies in the long term: for example, expanding agricultural exports, developing partnerships for certain manufacturing industries, or ensuring favourable conditions for specific services suppliers.

Consuming countries, on the other hand, want to secure access to the raw materials needed to advance the green transition, promoting the free flow of critical minerals. Often, this will mean wanting to be exempt from producing countries' export restrictions, if any such exemptions exist, to benefit from preferential supply conditions or get easier access for service operators in the mining industry. As noted above, consuming countries might possess their own processing capacities or might be interested in developing them closer to their manufacturing bases to ensure the safety of supply. In a trade negotiation, consuming country interests therefore do not necessarily align with a producing country's interest in developing downstream capacities. Rather, they push for reducing barriers to accessing key raw materials and developing preferential access to such commodities compared to their principal competitors.

Modern FTAs address an array of issues that go beyond simple tariff reductions (see Box 3). The number of policy issues being covered in FTAs peaked around 2008–2009 (Mattoo et al., 2020), which meant the inclusion of new provisions and clauses with an impact on CRM trade extending beyond simple market access. The analysis in this paper focuses on FTAs that have been concluded since 2000, with special attention paid to agreements signed in the past 5 years. As such, they often contain more than 20 chapters and can span well over 1,000 pages.

The sections below explain the operation of some of the most common provisions found in trade agreements and how they relate to the objectives of CRM-producing and CRM-consuming states. While each individual FTA will reflect a different balance of individual interests of its parties, the sections below can serve as guidelines to help better understand the usual approaches and complexities around CRM issues. Specific country examples in the following sections will elaborate much further on some of the chapters mentioned below and illustrate different forms and expressions of CRM-related discussions in each of the negotiations mentioned in those sections.

Box 3. Traditional FTAs

FTAs are reciprocal trade agreements between two or more customs unions in which the duties and other restrictive regulations of commerce are eliminated on "substantially all the trade between the constituent territories in products originating in such territories" (WTO, 1994, art. XXIV.8(b)). This means that most, if not all, traditional FTAs would be expected to affect tariffs on trade in CRMs by default.

Since the WTO's founding in 1995, the number of FTAs in force has grown significantly. While traditional FTAs did not go far beyond tariff liberalization, sometimes carving a meaningful exemption from the "substantially all trade" for agricultural products, the 2000s marked an important rise in interest in the inclusion of other policy issues, such as investment, labour rights, intellectual property, and environmental protection in FTAs.

5.2.1 Trade in Goods

Tariff reduction is an obvious goal of FTAs. FTAs detail what goods tariffs are reduced or abolished altogether for, either immediately upon the entry into force of the agreement or progressively over several years; however, there is an expectation that the FTA will liberalize "substantially all trade" (WTO, n.d., art. XXIV.8(b)).

Tariffs on critical minerals are already quite low on a global scale, especially for raw and processed minerals: applied average tariff rates for most-favoured nations for lithium, cobalt, and graphite are around 4% (Carpenter et al., 2024). There could be instances of tariff escalation where tariffs on finished products or products with higher value added might be seeing higher tariffs when exported. FTAs, in most cases, will reduce such duties or completely eliminate them. It is important to note that eliminating duties in the case of FTAs serves the interests of not only consuming countries (that normally would not keep any meaningful tariffs for the commodities they need anyway) but also those of producing countries. It would lower the costs for their own mining operations, as well as for the processing operations that they might want to develop further through the reduction of import tariffs for necessary equipment. It would also encourage trade in services that are not sufficiently available domestically.

Modern FTAs often go beyond tariff reductions, addressing non-tariff barriers, quantitative restrictions, licensing, or fees. Such rules will often be based on a general framework set out in the WTO rulebook but might also go beyond them, requiring some preferential treatment or additional commitments to be added when considering trade with the FTA partners. For example, the WTO General Agreement on Tariffs and Trade (GATT) generally prohibits the use of quantitative restrictions (WTO, 1994, art. XI) but provides for a range of exceptions (WTO, 1994), including temporary export restrictions in case of critical shortages or restrictions for applying standards for the classification of commodities.

Some producing countries have used export restrictions as a tool to limit the overexploitation of natural resources and assist emerging processing industries in becoming competitive in the global market. If used excessively, however, such instruments can create a shortage of needed

commodities in renewable energy manufacturing, creating meaningful delays or increasing the costs of final products. For CRM-consuming countries, such restrictions hinder their access to needed raw materials. In such circumstances, they are likely to advocate strongly for bilateral FTA provisions that restrict the use of export restrictions for specified commodities.

The WTO's Technical Barriers to Trade Agreement addresses the impact of technical regulations, standards, and conformity assessment procedures on trade, ensuring that such measures are implemented in a transparent manner and do not unnecessarily obstruct trade. Some such measures are important transparency tools themselves and help to strengthen sustainability in mining operations. WTO members are encouraged to rely on internationally agreed-upon standards and conventions as much as possible. While FTAs may refer to the Technical Barriers to Trade Agreement directly, a lot of them might pick out specific technical barriers to trade to address by committing to cooperation beyond the WTO disciplines. Such provisions might be linked to the mutual recognition of standards or technical regulations or the facilitation of conformity assessment procedures. Such measures may not only act as additional market access tools, but they can also help the FTA parties to take their technical cooperation up a notch, jointly developing specific norms and regulations.

5.2.2 Competition, SOEs, and Monopolies

Mining is an industry with historically strong state involvement, despite the waves of privatization in the 1990s and 2000s (World Bank, 2011). It is interesting to note that state control of mineral refining is stricter than that of mining (World Bank, 2011). The same political and economic reasons that have traditionally driven state control over mining sectors are behind governments' strategic interest in CRMs. While this picture is by no means static, it is important to note that the concerns about the sustainability of resource use are increasingly used to support the argument for the need for more rather than less state control of such industries.

The government's role in the mining industry can vary greatly. Two dominant forms are ownership (holding shares in a company) and control (the ability to act decisively on strategically important issues) (World Bank, 2011).

FTA provisions on competition, SOEs, and monopolies will often target the situations where one trading partner will see the other party's state ownership or control in the mining industry as putting its exporters at a competitive disadvantage. Traditionally, many such provisions focus on transparency, but increasingly, the consuming country negotiators will also aim to address issues of the preferential provision of inputs or services to such companies that might impact their own companies' competitiveness.

5.2.3 Subsidies

Policy-makers have a renewed interest in using subsidies as a way to potentially support the growth of green markets and encourage investment in sectors important to renewable energy. Subsidies can also distort rather than repair the functioning of markets and use limited fiscal space in the manner of poorly chosen national champions. As in the above section on competition, SOEs, and monopolies, governments' engagement in this area can also meaningfully influence the conditions of competition for international trade.

It is interesting to note that both consuming and producing countries have their own interest in using subsidies. Consuming countries aim to provide subsidies to build up or expand their own manufacturing industries, determine the location of the investment into such industries, or support the competition of domestically produced renewable energy goods in international markets. Critical raw mineral-producing countries may share many of these same objectives and aim to use subsidies to expand their mining operations or to add some activities, allowing them to move downstream. In both cases, subsidies might be used to encourage the adoption of more sustainable practices in mining or production processes.

Subsidy-related disciplines are very difficult to negotiate, and a lot of existing provisions in FTAs support the basic commitments of WTO members under the WTO Agreement on Subsidies and Countervailing Measures. These commitments prohibit export subsidies and the use of local content requirements as a condition for the provision of subsidies. They also include a broader set of rules disciplining sector- or firm-specific subsidies and subsidy transparency. These WTO provisions are relevant given the extensive use of local content requirements in the mining industry and the definition of prohibited subsidies, without exceptions, which includes subsidies with local content requirements.

5.2.4 Public Procurement

In the context of industries vital for state interests, such as raw material extraction, the pressure to favour domestic firms in awarding public contracts can be strong. Provisions on public procurement in FTAs aim to ensure that parties have access to their counterpart's procurement market. Procurement provisions often contain rules on procedures, time limits, valuation, or non-discrimination. They can affect how parties award public contracts related to CRM extraction and processing.

5.2.5 Trade and Sustainable Development

Chapters on trade and sustainable development tend to contain references to international standards on protecting the environment and workers' rights, as well as on climate change. Many trade and sustainable development provisions refer to international commitments beyond trade policy, such as multilateral environmental agreements or International Labour Organization principles. Other common provisions may refer to biodiversity, public information, or general cooperation on environmental issues. Many FTAs prohibit parties from encouraging trade and investment by relaxing environmental or labour measures. This is relevant in the context of CRMs, given the environmental and social challenges often associated with extractive industries.

5.2.6 Dedicated Chapters on Raw Materials

Some FTAs can contain dedicated chapters concerning raw materials or extractive activities, sometimes combined with provisions on energy. The commitments in these chapters are directly relevant to CRM production and can range from simple cooperation objectives to detailed measures on the export pricing of raw materials. Important examples of such chapters are discussed in the case study sections.

5.2.7 Trade in Services and Investment Liberalization

As far as trade in services goes, the identification of services most relevant for resource extraction and processing might be quite challenging. This is because even a small disruption in the provision of specific services—such as IT services for the software running complex machinery—might become an important barrier not only to trade but, at times, to business viability. Therefore, while mining and extraction services are the most obvious areas of an FTA's service commitments relevant to CRMs, there is a broad range of other services that are no less important for the functioning of the value chain: for example, engineering, consulting, business development, insurance, IT, and financial services.

Many modern FTAs aim to improve market access for services and investment, including those related to CRM extraction and processing. The parties' schedules of commitments describe any restrictions on market access or the national treatment that parties maintain in specific service sectors. However, the analysis of service schedules might not be the best tool to reveal the whole picture, as barriers to trade in services can also be hidden in domestic regulations that are not specified in schedules. Parties may subject the cross-border supply of services and investment liberalization relevant to resource extraction to different requirements or restrictions, such as qualification requirements, special licences, or limitations on where a foreign firm can establish its operations. While service schedules can give some indication of trade barriers to services relevant to CRMs, for a comprehensive picture, the services value chain should be analyzed as a whole to identify gaps and restrictions in domestic regulation.

Modern FTAs often regulate both services and investment. Investment chapters in modern FTAs, some of which are discussed in Chapter 7, then regulate both market access and investment liberalization as well as the treatment of foreign investment post-establishment. These chapters are thus important intersections between trade and investment regulations, which have often been dealt with separately in treaties (see sections 6.1. and 6.2.6).

6.0 The Relevance of Existing Investment Agreements

6.1 The History of Investment Agreements for Critical Minerals

Historically, international investment agreements (IIAs) have been, as a rule, negotiated on a bilateral basis.[3] For this reason, investment treaties are often referred to as bilateral investment treaties (BITs).[4] They have been justified as a tool to help attract foreign investment into developing economies in exchange for international protection accorded to foreign investors.

While IIAs are reciprocal—they apply to investors from one contracting party investing in the other contracting party and vice versa—the reality of investment flows is that, generally, one contracting party tends to be capital-exporting and the other capital-importing. As a result, the two parties have diverging interests. In a typical scenario, the interest of the capital-exporting state would be to protect their investors abroad from sovereign risks while implicating as little diplomatic relationship between the contracting states as possible. The interest of the capital-importing state, on the other hand, is to attract as much quality foreign investment as possible and to secure the policy space necessary to regulate the impact of foreign investor activities.

Given the context of critical mineral value chains, the capital-exporting states tend to be the consuming states (i.e., the states where most economic operators with the technological capacities and economic prowess necessary to operate in mid- and downstream segments are based). However, mining companies are often structured to take advantage of various tax, financial, and legal benefits. Hence, they may be headquartered in other CRM-consuming countries.[5] The producing states under investigation in this report, on the other hand, tend to be capital-importing states.[6]

Most of the existing IIAs were adopted in the 1990s and early 2000s. These treaties represent the so-called old-generation treaties. Old-generation treaties are characterized by a broad scope of coverage (covering virtually all investments, regardless of the sector, direct as well as portfolio investments) and wide and unrefined investment protection standards. They

[3] As of August 2024, there are over 2,600 IIAs in force (UNCTAD Investment Policy Hub: https://investmentpolicy.unctad.org/).

[4] It should be noted that investment-related provisions have been increasingly negotiated as investment chapters in broader FTAs, as discussed above. While the type of provisions in these agreements is not significantly different from standalone IIAs (i.e., they regulate the agreement's scope, investment protection, and dispute settlement), investment chapters in FTAs contain most of the innovative elements in the IIA universe and often also contain provisions on investment facilitation and liberalization.

[5] In the context of investment treaty protection, Luxembourg, Cyprus, Panama, and Mauritius are examples of states through which companies active in the mining and energy sectors often channel their investment to access investment treaty and tax benefits. These states are, respectively, the 11th, 12th, 18th, and 24th most common nationalities of claimants in ISDS cases (UN Trade and Development [UNCTAD], n.d.-b).

[6] This is a somewhat stylized division, given that high-income countries, such as Australia, are also significant producers of critical minerals.

generally contain investors' direct access to an investor–state dispute settlement (ISDS) mechanism through advance consent to ad hoc arbitration (see Box 4 and Bernasconi-Osterwalder et al., 2011). Additionally, unlike trade agreements, older-generation IIAs do not require specific implementation measures from the signing parties. Instead, they are primarily utilized by the direct beneficiaries—foreign investors—only when a disagreement or dispute arises with host states.

Old-generation treaties, in particular, have been criticized due to the costs associated with ISDS claims (see, e.g., OECD, 2024; UNCTAD, 2024b; United Nations Commission on International Trade Law [UNCITRAL], 2018) and their inability to achieve their basic stated purposes (Bonnitcha, 2017). As a result, countries have moved to reform their existing stocks of investment treaties and replace them with new-generation treaties that aim to address some of the old-generation treaties' shortcomings (e.g., UNCTAD, 2020).

Generally, the so-called "new-generation IIAs" aim to increase the precision of the investment protection standards with the aim of reducing the ISDS tribunals' discretion; they intend to secure greater policy space by inserting various exceptions to investment protection standards, and they reduce—or at times eliminate—investors' access to treaty-based ISDS. They also increasingly contain various ESG-related provisions that aim to regulate the impact of foreign investment projects. New-generation IIAs may be in the form of a standalone investment treaty, but more often, they form part of a broader FTA that covers trade, investment, and other areas, such as public procurement (see Section 5.2).

However, reform has been snail-paced, and the old-generation treaties remain a significant obstacle to national climate, energy, and local industrialization policies, given the vast majority of ISDS cases are brought on the basis of old-generation IIAs (UNCTAD, 2024a). What is more, most new-generation IIAs continue to be based on the investment protection function. Only a minority of IIAs have recently started exploring functions to support sustainable investment other than investment protection (UNCTAD, 2023a). Investment regulation, promotion, and facilitation, as well as the creation of cooperation platforms on governance issues, have emerged as potential functions that investment agreements may serve (Ostransky & Bonnitcha, 2024).

Box 4. Investor–state dispute settlement

ISDS is a means to settle disputes between foreign investors and states hosting the investment. Based on most IIAs, foreign investors may bring arbitration claims directly against host states for claimed breaches of investment protection standards contained in the IIA. These protection standards tend to be open-ended and subject to various interpretations, which leads to inconsistent practices and a lack of predictability, further increasing costs for the host state's public budgets (e.g., Sarmiento & Nikièma, 2022).

As a rule, investors claim damages in ISDS. These have been growing significantly over time—in the 2000s, the average award of damages was USD 68 million, whereas in the 2020s, it was over USD 250 million (UNCTAD, 2024b). In more than a quarter of the cases won by investors, the ISDS tribunal awarded more than USD 100 million (UNCTAD, 2024b). These sums are compounded by the interest due on them.

Generally, states are precluded from bringing claims against investors under IIAs, and their opportunities to bring counterclaims are limited (counterclaims are separate claims brought by a respondent party in the context of an ongoing litigation). As a result, the best-case scenario for a state in an ISDS case is not to lose. At the same time, the costs of defending an ISDS claim and its duration are significant as well, with average costs exceeding USD 8 million per party and the duration averaging between 3 and 4 years (UNCITRAL, 2018). ISDS practice is inconsistent regarding the state's ability to recoup these costs.

6.2 Investment Negotiations and Relevant Provisions for Critical Minerals

In theory, the IIA is supposed to represent a mutual gain for both (or all) contracting parties. However, IIAs' records in achieving their basic goals have been increasingly scrutinized and questioned. The empirical evidence showing that IIAs are a useful tool in attracting foreign investment has been inconclusive at best (Bonnitcha et al., 2017; Brada et al., 2021). At the same time, the costs associated with IIAs have become more and more visible, especially in the context of climate action. These costs materialize in the practice of ISDS, which brings significant costs to states (see Box 4; also Tienhaara et al., 2022; UNCITRAL, 2018; UNCTAD, 2022).

Overall, the majority of IIAs are tilted in favour of countries that consume CRMs, or at least those countries in which enterprises active in producing countries are based, regardless of the segment of the value chain (IIAs generally protect foreign investors in all segments of the CRM value chain). These foreign investors get additional protection through IIA investment standards and access to ISDS—benefits that are not available to domestic investors or investors not covered by an IIA. Given the known costs and insignificant benefits to capital-importing critical-mineral-producing countries, the typical IIA model can be seen as detrimental to the producing countries keen on mid- and downstream industrialization by reducing the country's policy space and exposing it to ISDS-related risks.

On the other hand, a typical IIA will not directly help consuming countries' goals of supply security and diversification either. Given that the scope of IIAs' application is the investor's host state's territory, these agreements are concerned with the treatment of foreign investors in the host state. Protection of consuming countries' investors abroad does not directly secure the supply of CRMs. What is more, given their broad scope of application, investments in the CRM sectors and natural resources more generally are not singled out by IIAs, as they apply to all investments. As a rule, IIAs contain broad asset-based definitions that do not distinguish between different sectors (e.g., mining versus retail) or types of investment (direct versus portfolio; minority or majority).

IIAs may, however, indirectly support consuming countries' investors if they contain investment liberalization provisions or when they externalize some of the risks connected with investors' operations through protection standards.

While IIAs generally provide for standards of treatment (protection) for foreign investors, they do so through different provisions and standards. Some of their standards are more relevant in the context of critical minerals than others. In addition, recent IIAs also contain provisions that go beyond investment protection functions, including investment facilitation, cooperation on investment, and ESG norms. The sections that follow explain the operation of some of the most common provisions found in IIAs and how they relate to the objectives of producing and consuming states.

6.2.2 Expropriation

IIAs protect not only against direct expropriation, whereby a government nationalizes and takes the title of foreign-owned investment, but also against indirect or regulatory expropriation. The latter concerns situations in which a foreign investor, while remaining the formal owner of the asset, is effectively deprived of it. The interpretation of this provision in ISDS has been, at times, broad, leading to concerns about regulatory chill. Regulatory chill is a phenomenon whereby a state decides to forgo or delay the adoption of public interest regulations due to concerns about ISDS claims. New-generation IIAs often include interpretative annexes on expropriation, specifying that common regulatory measures should not be considered expropriation except for exceptional circumstances. The efficacy of these annexes remains limited, as regulatory expropriation is considered an exceptional occurrence. At the same time, IIAs permit the expropriation of investments under certain conditions, most importantly upon the payment of compensation. As some industrialization policies on CRMs operate through nationalization or divestment requirements, expropriation provisions may become relevant.

6.2.3 Fair and Equitable Treatment

Fair and equitable treatment (FET) is one of the most controversial standards contained in almost all IIAs and invoked in virtually all known ISDS cases. The FET standard has led to divergent interpretations, with a wide array of measures that can potentially be considered a breach of the obligation, contributing to regulatory chill (Sarmiento & Nikièma, 2022). The most controversial element of the FET standard is the protection of investors' legitimate expectations—this standard has been occasionally interpreted as requiring the stability of the general legal framework in which the investment has been made. In the CRM context, changes to domestic legal frameworks governing economic operations in all segments of the CRM value chain may potentially be subject to an FET claim if they are detrimental to a foreign investor. For instance, the Spanish government has been held liable to pay billions of USD in damages to investors affected by its modification of investment incentives provided to photovoltaic power plants (Bárcena & Flues, 2022). Similar ISDS claims may be brought by investors affected by incentives provided to support various investments in CRMs or along the value chains of various products related to critical minerals, such as batteries or EVs.

6.2.4 Non-Discrimination Provisions

Most IIAs will include two typical non-discrimination clauses: national treatment and most-favoured nation treatment (see, e.g., Nikièma, 2017). Economic policies of a CRM-producing country may favour—in law or in practice—national champions or SOEs. If such policies negatively affect foreign investors, they may become a basis for a claim. Importantly, in some IIAs, the non-discrimination obligations extend to the pre-establishment phase of investment, effectively liberalizing investment by providing that covered investors may not be treated less favourably than national or third-party investors with respect to establishment, acquisition, or admission of investment (i.e., before the investment is even admitted into the host state's territory) (see Section 6.2.6).

6.2.5 Prohibition of Performance Requirements

The increasingly common prohibition of performance requirements may be relevant for various industrialization efforts of critical mineral-producing countries keen on developing mid- and downstream industries with higher value addition. Producing countries may subject the entry or operation of foreign investment in the CRM sectors to various conditions and requirements (e.g., technology transfers, use of local suppliers, cooperation on research and development [R&D], employment and training of the local workforce, and local reinvestment), which may contravene these IIA provisions (Nikièma, 2014). These provisions may also hinder the transfer of technologies necessary for national industrialization. At the same time, ISDS claims related to performance requirements prohibitions remain rare.[7]

6.2.6 Investment Liberalization

Beyond investment protection, IIAs have recently started including provisions related to investment liberalization (see Section 5.2.7). The range of these market access commitments varies from IIA to IIA. From the perspective of the producing countries, including broad investment liberalization provisions in their treaties means that certain sectors may not be limited only to nationals. This may limit countries' efforts to support national champions or domestic enterprises in order to protect infant industries from foreign competition. When a country has made a liberalization commitment in a treaty, it may be prevented from closing the liberalized sectors at a later stage for various policy reasons. Some of the newer IIAs often contain liberalization commitments based on the so-called "negative listing technique." This technique means that all sectors are considered liberalized unless the state has made an explicit reservation regarding either existing or future measures. This technique is the opposite of the technique used by the General Agreement on Trade in Services in liberalizing services—"positive listing"—that is, only the sectors that are actively listed are considered liberalized.

[7] As of November 2024, there have been four publicly known ISDS cases in which the government has been found in violation of the performance requirement obligations in IIAs. For instance, in Mobil and Murphy v. Canada, the tribunal found a breach of performance requirements prohibition in "claims arising out of changes in the regulatory regime applicable to the exploitation of two oil fields in which the claimants had invested; particularly, the imposition of research and development expenditure requirements by the Canadian province of Newfoundland, and awarded over CAD 17 million in damages"(Mobil and Murphy v. Canada , as cited in UNCTAD, n.d.-b).

6.2.7 Exceptions and Carve-Outs

In IIAs, clauses for the protection of the environment, national security, or other public policy values are most commonly featured as exceptions to the general protection standards. The usefulness of approaching important public policy matters through exceptions has proven limited in ISDS. Arbitral tribunals have interpreted the exceptions in a very demanding manner, leaving questions as to whether a government's regulatory conduct may ever fall within its scope (Heath, 2021). In other words, investment protection has generally prevailed over the public interest protected by the exception.

6.2.8 Investment Facilitation

Investment facilitation provisions have to do with ground-level administrative obstacles to investment and have recently appeared in investment treaties. Investment facilitation measures are "about making it easier for investors to establish or expand their investments, as well as to conduct their day-to-day business in host countries" (UNCTAD, 2023a, p. 2). In the CRM context, facilitating establishment, operation, and expansion may be beneficial for the host country to the extent that investment treaties matter for foreign investment decisions. At the same time, investment facilitation obligations may be burdensome to implement for some resource-constrained administrations.

6.2.9 ESG-Related Provisions in IIAs

As stated above, old-generation IIAs do not impose any obligations on covered investors (see, e.g., Bernasconi-Osterwalder & Zhang, 2018; Sarmiento & Nikièma, 2022), and the question of whether an investor's conduct is in line with national or international ESG standards is largely irrelevant for arbitration tribunals. Only very few old-generation investment treaties contain references to ESG. New-generation IIAs fare better in this regard. However, in comparison with the ease of enforcement of states' investment protection obligations by investors, ESG-related provisions, especially when imposed on investors, remain voluntary and difficult to enforce. We find different types of ESG-related provisions in IIAs, and most of them suffer from enforceability deficiencies. For instance, recent IIAs have started to include a provision restating that the states retain the right to regulate foreign investment in the public interest or self-standing provisions that stipulate the importance of states' protecting various ESG values. Such provisions, however, merely restate the obvious, and their limits have always been defined by the investment protection standards in the IIAs. This means that, in practice, such provisions would not preclude the duty to compensate the investor and would not otherwise limit the breadth of the investment protection standard. Hence, this kind of provision has had almost no effect on policy space.

Non-Lowering of Standards

Other types of ESG provisions stipulate that states are not expected to lower their ESG standards in order to attract investment. However, given that this provision is not directly addressed to investors, there have been no ISDS cases based on this provision. In other words, it is difficult to imagine a situation in which an investor would claim a violation of this provision.

Corporate Social Responsibility and Responsible Business Conduct

New-generation agreements often incorporate various sets of corporate social responsibility (CSR) and responsible business conduct norms, such as the United Nations Guiding Principles on Business and Human Rights or the OECD Guidelines for Multinational Enterprises. However, IIAs, as a rule, merely encourage their adoption. This, together with the fact that most of these standards are voluntary, limits the efficacy of these provisions. As a result, IIAs do not impose direct obligations on investors.

Compliance With Domestic Laws

ESG provisions in investment treaties requiring the investor to comply with domestic laws promise the most impact, as they potentially allow the respondent states to pursue (counter) claims against investors in ISDS. However, very often, the measure with which the compliance is required is the object of the investor's claim. In this case, the impact of the provision is limited. IIAs may, however, oblige states to provide legal avenues for holding investors accountable (e.g., South African Development Community, 2012, art. 17.2).

Cooperation Frameworks on Investment Governance

Finally, new-generation IIAs have established frameworks, mechanisms, and institutions for ongoing cooperation on investment governance issues. Such frameworks were not present in old-generation IIAs that were considered one-off deals that prescribed investment standards enforced by investors directly through ISDS according to compensatory logic. Newer IIAs establish various joint committees and working groups that aim to address issues of investment governance as they arise. This way, IIAs may become more genuine tools for intergovernmental cooperation on investment.

7.0 Trade and Investment Provisions in Case Studies

7.1 Chile

7.1.1 Summary of the Balance Between Exporter and Importer Objectives

Chile is a key manufacturer of copper and lithium, producing about 24% and 26% of global supply, respectively (Center on Global Energy Policy, 2024). It also produces other minerals, such as molybdenum, silver, and iron. Its main exports are copper ore (28% of export revenue) and refined copper and copper alloys (19% of export revenue). Chile thus exports both copper ores and concentrates and refined copper cathodes (Observatory of Economic Complexity, n.d.-b). With respect to lithium, Chile processes most of its lithium into lithium carbonate before exporting it (Observatory of Economic Complexity, n.d.-a).

Through its current domestic policies related to the extraction and export of CRMs, Chile aims to develop a globally competitive critical mineral extraction and processing industry while generating value both nationally and locally. The recent imposition of royalties on large-scale copper mining activities (and their distribution), as well as the development of its National Lithium Strategy, is intended to support the economic and social development of the country by capturing more rents and creating competitive national companies (Gobierno de Chile, 2023a, 2023b).

Chile's focus on economic development is also reflected in the most recent MOUs and FTAs it has signed. The MOU signed with the EU includes the "creation of local value" and "increasing the competitiveness of the Chilean economy" among its objectives. The development of an "internationally competitive industry" is also part of the objectives, though very interestingly, this objective does not exclusively apply to Chile (MOU between the EU and the Republic of Chile on a Strategic Partnership on Sustainable Raw Materials Value Chains, 2023).

In the Chile–EU Advanced Framework Agreement, the goal of developing processing (and manufacturing) capacities related to critical minerals is less apparent, potentially as a result of Chile's ownership of lithium and copper processing technology. The main reference to local development is the clause allowing for the supply of raw materials to the Chilean domestic industry at preferential prices. However, this exemption within the export pricing article is again subject to conditions that restrict its application to Chile's existing policy settings. In other words, Chile preserved space for its current industrial policy measures.

From the perspective of Chile's partners, both MOUs and FTAs serve the purpose of securing and diversifying the supply of CRMs. The EU, as well as Korea and Japan, is among the top five importers of both Chilean copper and lithium. The intensification of partnerships with reliable producers of key raw materials for the green transition, like Chile, reflects the general

trend toward the "friendshoring" of value chains, in order to limit dependencies on perceived strategic opponents or on single suppliers.

For example, on the occasion of signing the bilateral MOU on mineral cooperation, Korean Prime Minister Han Duck-soo noted that Korea "should invest more in Chile for raw materials like minerals, which are key to economic security" (UTC, 2022). Similarly, the news coverage of the Japan–Chile MOU on sustainable lithium production states that "the ministry hopes that expanding the collaboration will lead to securing critical minerals on a stable basis" ("Chile, Japan boost ties," 2024).

The EU–Chile MOU features "securing a sustainable supply of raw materials" as an objective of the partnership (MOU between the European Union and the Republic of Chile on a Strategic Partnership on Sustainable Raw Materials Value Chains, 2023), and the explanatory material regarding the Chile–EU Advanced Framework Agreement states that "the EU–Chile Advanced Framework Agreement ensures that we will have access to the lithium we need, while also securing the highest sustainability standards" (European Commission, n.d.-c). This goal, however, needs to be nuanced against the reality of long-term offtake agreements that are being signed parallel to the MOU process and that have taken, and are taking, a lot of available lithium off the market. As mentioned, the Chile–EU Advanced Framework Agreement also specifically contains several provisions locking in market principles in raw materials trade: the agreement limits Chile's practice of providing its domestic industry with certain raw materials at preferential prices, prohibits export and import monopolies, and features commitments from Chile to not apply any export restrictions on the EU. As such, the agreement significantly contributes to the predictability of raw materials trade between Chile and the EU. Again, this may be important looking forward, but currently, a lot of lithium is already committed in private, long-term offtake agreements rather than being traded on international markets.

Chile's partnerships with some of its main export destinations for CRMs are some of the most interesting examples of how trade and investment provisions can be designed to balance the objectives of supply security, sustainability, and economic development in producing countries. Sitting behind the carefully negotiated outcome are the tensions discussed earlier between the objectives of security of supply and economic development: while Chile aims to reap the benefits from the heightened demand for critical minerals in order to grow its own industry, importers of those minerals like the EU aim to secure their supply of materials needed for their own manufacturing industries. This is the case for purchasing both refined lithium for Chile's growing battery industry and raw or intermediate lithium for the planned processing facilities (Sadden & Ranjan, 2023). At the moment, these agreements appear to be negotiated in a rather zero-sum way. But Chile's agreements, like Indonesia's, demonstrate that for mineral-rich developing economies, it is possible to preserve space for current industrial policy measures, although the trade-off (at least in Chile's case) may be the expansion in costly industrial policy measures needed to add value downstream.

As for investment, similar to Indonesia, a number of Chilean investment treaties are old-generation treaties that restrict the country's policy space, including with regard to investments in CRMs. Chile's policy has been to terminate its old-generation treaties and replace them with modern IIAs that better balance investment protection with the government's policy

space to regulate investments in critical minerals. The coming into force of the Chile–EU Advanced Framework Agreement would go a long way in achieving this purpose, as it would replace almost half of its old-generation BITs. In addition, the government's policy to seek sustainable and ESG-enhancing investment seems aligned with some of the provisions found in its recent IIAs. Its BIT with Brazil—while not yet in force—is an example of these efforts. Chile has been consistent in limiting the potentially negative impact of its IIAs' investment liberalization provisions and prohibitions of performance requirements through reservations covering investment in natural resources. This treaty policy reflects the constitutional limitations that vest the ownership of natural resources exclusively in the state. As a result, except for the old-generation treaties, Chile's IIAs largely seem to reflect its national policies regarding critical minerals.

7.1.2 Current Trade and Investment Policy Dynamics

Trade and Investment

Chile's position as the largest producer of copper and the second-largest producer of lithium is a reflection of its established mining sector and its attractive geological reserves. Chile is a high-income, export-oriented country (Observatory of Economic Complexity, n.d.-a; World Integrated Trade Solution, n.d.). In 2022, Chile's exports totalled USD 99 billion, and imports totalled USD 96 billion (Observatory of Economic Complexity, n.d.-a). Chile's main export markets in 2022 were China (39%), the United States (14%), the EU (approximately 7.5%), Japan (7.5%), and Korea (6%) (Observatory of Economic Complexity, n.d.-a). Chile's principal exports were copper ore (23%), refined copper (19%), carbonates (8%), fish fillets (4%), and raw copper (3%) (Observatory of Economic Complexity, n.d.-a).

Mining products account for over 50% of goods exports, concentrated mainly in copper. However, lithium is becoming increasingly more important, with its total exports having grown 500% in 2022 and its share of exports having grown from 1.3% in 2021 to 8.2% in 2022 (WTO Secretariat, 2023). Chile owns an estimated 45% of global lithium reserves and is the world's second-largest producer of the mineral (WTO Secretariat, 2023). Chile's lithium production is mainly destined for export, albeit after processing, with the main destinations being China (USD 6 billion in 2022) and the Republic of Korea (USD 1.2 billion). Belgium is the only EU importer making the list of the top five destinations, with USD 0.4 billion (Center on Global Energy Policy, 2024). The main importers of copper are China, Japan, and South Korea (Cortés Leiss & Yeluri, 2021).

While all of Chile's mineral endowments are state-owned, concessions can be awarded to domestic or foreign companies for the extraction and processing of minerals. Two SOEs are important actors in Chile's mining sector: the National Copper Corporation (Corporación Nacional del Cobre [Codelco]) for large-scale mining and the National Mining Company (Empresa Nacional de Minería) for small- and medium-scale mining.

Recently, Chile has launched several initiatives to further develop the mining sector in a way that builds local capacities and benefits the Chilean population. As such, it has introduced royalties on large-scale mining, especially copper, which are reinvested into different funds that benefit regional and local governments, as well as mining communities (Gobierno de Chile,

2023b). Chile needs to invest billions in only maintaining the same level of copper output due to declining ore grades (Jobet, 2022). In terms of copper smelting, industry specialists have also highlighted that Chile is experiencing intense competition from China, which holds a dominant position in copper smelting.

To increase local value added, Chile requires lithium producers to offer up 25% of their lithium production to Corporación de Fomento de la Producción, a government agency for economic development. The agency then negotiates contracts providing locally established enterprises with lithium at a preferential price. In addition, Chile adopted its National Lithium Strategy in 2023, which seeks to increase government participation in the sector and incentivize the development of the local lithium industry (Osborn, 2023) through the involvement of Codelco and Empresa Nacional de Minería. Other lithium-producing countries, like Argentina, are adding more competition to lithium production (Benchmark Minerals, 2024), and the National Lithium Strategy was designed to attract more foreign investment to build partnerships with the state-owned companies exclusively tasked with the development of lithium as per statute.[8] While the National Lithium Strategy could represent significant progress on environmental and social standards (specifically through the advancement of less-water-intensive technologies and the stronger focus on local communities), as well as in terms of value creation, analysts warn that a lack of clarity on implementation specific to the National Lithium Strategy could eventually pose a hurdle for foreign investment and could impact the efficiency and competitiveness of lithium production and processing (Jobet et al., 2024).

Chile pursues an open trade policy, actively participating in multilateral and regional trade initiatives. The country has signed 33 trade agreements covering over 60 economies, including some of the biggest markets, like the United States, the EU, and China. Chile is also part of the cross-continental Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP). In the past few years, Chile has both concluded new trade agreements and updated existing ones, often incorporating provisions on trade in services, trade and sustainable development, e-commerce, gender, and more (WTO Secretariat, 2023).

With respect to investment, Chile has had annual foreign direct investment (FDI) inflows of around USD 20 billion in the last 2 years. The largest portion of FDI comes from Canada, followed by the United States and the Netherlands (International Monetary Fund, 2024; Lloyds Bank, 2024). The mining sector accounts for the largest share of the incoming FDI (Lloyds Bank, 2024). The main reform of the legal framework governing foreign investment was adopted in 2015 when the government adopted a new Framework Law on FDI (Marco Para la Inversión Extranjera Directa, Ley Núm. 20.848). This law establishes a new institutional structure and competencies of the relevant agencies, among which is the investment promotion agency InvestChile, and provides guarantees of non-discrimination, access to the formal foreign exchange market, and free transfer of capital. The law also includes various investment facilitation measures and governs investment incentives (UNCTAD, 2015c).

[8] In 1979, Chile declared lithium a strategic resource by law, with the implication that it is not subject to ordinary mining concessions (Jobet et al., 2024).

In 2022, the government launched a package of measures aimed at stimulating investment in Chile titled "Let's Invest in Chile," which includes six areas of action: tax incentives for private investment, including tax incentives for the copper sector and investment projects with a multiplier effect and green projects; improving access to financing; improving public investment; promoting foreign investment, including the reopening of InvestChile offices in Europe and North America; enhancing the effectiveness of regulation and permit procedures; and promoting public–private partnerships for investment (Gobierno de Chile, 2022; Ministerio de Hacienda, 2022).

A final important aspect related to the participation of foreign investment in CRM sectors is Chile's 1980 Constitution. According to article 19.24, the state has "absolute, exclusive, inalienable and imprescriptible ownership of all mines, including guano deposits [covaderas], metalliferous sands, salt mines, coal and hydrocarbon deposits and other fossil substances" (1980 Constitution, art.19.24, as cited in Cariola Díez Pérez-Cotapos, n.d.). This constitutional law limitation is reflected in Chilean trade and investment agreements.

Responsible Mining

Chile has a sophisticated mining framework and environmental legislation. The recent mining regulation changes focused mostly on the amount of annual mining patents, the duration of exploration concessions, and changes in royalty requirements (Weinstein, 2023; Albagli Zaliasnik, 2024).

Chile's mining sector faces challenges related to the environment, community relations, and water management. Key ESG issues include water management and decarbonization (Garcia-Zavala et al., 2023), as many of the mining operations—for example, for lithium and copper—are done in water-scarce regions, and the industry contributes about 16% of Chile's total carbon emissions. Over 95% of the copper, silver, and molybdenum supply is covered by net-zero standards, with most large mining companies having net-zero emission targets for 2040/2050, which can be around their time of decommissioning, so more is needed in the short-term (International Finance Corporation, n.d.; Palacios & Aninat, 2023).

The above-mentioned National Lithium Strategy did include the goal of using new technologies to reduce environmental impacts, specifically water use. However, since the law also mandated existing companies to enter into joint ventures with Chilean SOEs, the implementation of that requirement has been much softer throughout the negotiation of the first joint venture between SQM and the state-owned mining company Codelco (Jobet et al., 2024).

7.1.3 Key Issues and Developments in Trade and Investment Agreements

Trade Agreements

Chile has 33 trade agreements covering 65 economies, representing 88% of the world's GDP. These agreements include 20 FTAs, six Economic Association Agreements, five Economic Cooperation Agreements, a Partial Association Agreement with India, and a Commercial Protocol with the Pacific Alliance (Colombia, Perú, and Mexico) (International Trade

Administration, 2023). The most relevant FTAs with major consumers of critical minerals or other mining majors are the FTAs with Australia, Canada, China, South Korea, the United States, and the EU (International Trade Administration, 2023).

Chile's trade agreements commonly reduce tariffs on critical minerals, such as cobalt, nickel, or lithium, to zero. Some of the other most prevalent CRM-relevant provisions in Chile's trade agreements with major economies concern quantitative measures in the form of import and export restrictions. Most of these agreements simply reinforce the parties' existing WTO commitments (Korea–Chile FTA, 2003, art. 3.9; Chile–U.S. FTA, 2004, art. 3.11; Japan–Chile Agreement, 2007, art. 18; Australia–Chile FTA, 2008, art. 3.9, §1.). The Free Trade Agreement between Australia and the Republic of Chile (2008, art. 3.9, §2) is slightly clearer in that it explicitly mentions which types of quantitative restrictions cannot be applied.

The same agreements also explicitly prohibit the implementation of export taxes (Korea–Chile FTA, 2003, art. 3.11; Chile–U.S. FTA, 2004, art. 3.13; Japan–Chile Agreement, 2007, art. 16; Australia–Chile FTA, 2008, art. 3.11). This commitment goes beyond the WTO rules, but given its prevalence, it would seem that Chile does not intend to make use of import and export restrictions beyond GATT exceptions, nor does it adopt export duties in order to promote its domestic industry, CRM-related or otherwise.

Looking at Trade in Services in Chile's trade agreements, no evident restrictions on mining-related cross-border trade in services appear. However, some of Chile's schedules do detail some specific rules on establishment and investment, especially on lithium, requiring special administrative concessions for the exploration of lithium reserves (Korea–Chile FTA, 2003; Chile–U.S. FTA, 2004; Japan–Chile Agreement, 2007; FTA between Australia and the Republic of Chile, 2008). These provisions maintain space for Chile's existing industrial policy but are highly specific, unlikely to either significantly promote downstream capacities or affect the security of supply of critical mineral-importing countries.

On ESG conditions, the provisions in Chile's agreements are broadly similar to Indonesia's but often go into more detail, which is commendable and helps Chile be ambitious about being a hub for more responsible mining. Like Indonesia's trade agreements, many of Chile's FTAs feature common commitments, such as prohibiting countries from relaxing or reducing their environmental protection policies to attract investment (CPTPP, art. 20.3; Chile–Korea FTA, art. 10.18; Chile–Canada FTA, art. G-14). Some agreements also include provisions related to the public's interaction with environmental laws and policies (CPTPP, art. 20.7).

Some of Chile's agreements seek to incentivize compliance with higher standards. For example, under the CPTPP, the parties "recognize that flexible, voluntary mechanisms, for example, voluntary auditing and reporting, market-based incentives, voluntary sharing of information and expertise, and public–private partnerships, can contribute to the achievement and maintenance of high levels of environmental protection and complement domestic regulatory measures" (Government of Canada, 2016, art. 20.11). Parties are also to encourage firms to adopt voluntary CSR policies, practices, and principles that are related to the environment. Given the many standards available to mining companies, this encouragement could be particularly relevant for improving mining standards, even if the provisions are very soft in nature.

In December 2023, Chile and the EU signed an Advanced Framework Agreement, updating the existing EU–Chile Association Agreement. According to the EU, one of the main achievements of the agreement is "greater access [for the EU] to raw materials and clean fuel crucial for the transition to the green economy, such as lithium, copper, and hydrogen" (European Commission, n.d.-c). The agreement notably contains a chapter on energy and raw materials (BNAmericas, 2023; European Commission, n.d.-a), detailing sectoral commitments and setting the scene for deeper cooperation.

First of all, the chapter prohibits the establishment of import or export monopolies for both energy and raw materials and requires parties to price their exports to the other party as if destined for the domestic market (see Box 5). This limits the scope to apply dual pricing in Chile's extractive sector, where the government currently reserves 25% of lithium production for locally established companies at preferential prices. In practice, however, the limitation is itself limited: Chile's current policy, which only a handful of companies benefit from, is not affected. As such, the FTA still allows Chile to support emerging industrial sectors by supplying them with raw materials at preferential prices, as long as trade is not distorted, but limits Chile's possibilities for expanding upon this practice.

The chapter further establishes common rules for authorizations for the exploration and production of raw materials (European Commission, n.d.-a, art. 8.7) and requires parties to carry out environmental impact assessments before authorizing projects related to energy or raw materials (art. 8.8). It also mandates that relevant information will be publicly available and that the process is participatory in nature, giving civil society the chance to interact over social and environmental concerns (art. 8.8).

Finally, the same chapter also proposes to cooperate on standards: parties should collaborate to promote the convergence and harmonization of standards and technical regulations of relevance to raw materials (European Commission, n.d.-a, art. 8.12). The chapter foresees cooperation between parties to advance responsible mining practices. It envisions cooperation to promote research, development, and innovation in environmentally sound and cost-effective technologies, processes, and practices in the areas of raw materials, as well as their dissemination. In addition, parties should cooperate in promoting value addition (art. 8.13). The implementation of the chapter is monitored through the Trade in Goods Committee. Contrary to most provisions on trade and sustainable development in the EU FTAs, dispute settlement provisions apply to this chapter.

Box 5. Example provisions on energy and raw materials in the 2023 Chile–EU Advanced Framework Agreement

Article 8.4: Import and export monopolies

"No Party shall designate or maintain a designated import or export monopoly. For the purposes of this Article, import or export monopoly means the exclusive right or grant of authority by a Party to an entity to import energy goods or raw materials from, or export energy goods or raw materials to, the other Party" (Chile–EU Advanced Framework Agreement, 2023, art. 8.4).

Article 8.5 Export Pricing

1. "A Party shall not impose a higher price for exports of energy goods or raw materials to the other Party than the price charged for such good when destined for the domestic market, by means of any measure, such as licenses or minimum price requirements.
1. Notwithstanding paragraph 1 of this Article, Chile may introduce or maintain measures with the objective to foster value addition, by supplying industrial sectors at preferential prices of raw materials so they can emerge within Chile provided that such measures satisfy the conditions set out in Annex II to this Chapter" (Chile–EU Advanced Framework Agreement, 2023, art. 8.5).

Annex II to Chapter 8 of the agreement specifies that "a measure that Chile introduces or maintains pursuant to article 8.5(2) shall meet all of the following conditions: (a) it shall not result in an export restriction on exports to the European Union pursuant to Article 2.11; (b) it shall not adversely affect the capacity of the European Union to source raw materials from Chile; (c) if the raw material is supplied at a preferential price to an economic operator in a third country, that shall be accorded immediately and unconditionally to economic operators in like situations in the European Union; and (d) it shall not result in a preferential price that is below the lowest price for exports of the same good realised during the preceding 12 months" (EU proposal for a council decision on the signing, on behalf of the European Union, of the Interim Agreement on Trade between the European Union and the Republic of Chile, Annex 8-B).

Investment Agreements

Chile has 34 BITs in force. Most of them were adopted in the 1990s and early 2000s (30 BITs) and represent so-called old-generation treaties (e.g., the 2000 Chile–Dominican Republic BIT, the 2003 Chile–Iceland BIT, the 1999 Chile–Switzerland BIT, and the 1996 Chile–UK BIT). Eight BITs concluded by Chile have been terminated and, generally, replaced by a follow-up agreement. For example, the 2010 Chile–Uruguay BIT replaced the 1995 BIT and coexists with the 2016 Chile–Uruguay FTA, and the 1994 Chile–PRC BIT was replaced by the 2012 Chile–PRC FTA Supplementary Agreement on Investments. Chile's investment treaty policy has been to replace its old-generation IIAs with new and modern types of treaties. The rationale behind this policy is that the old-generation treaties do not bring benefits to Chile.

Chile is also a party to 38 trade and economic agreements that contain investment-related provisions, including mega-regional economic agreements, such as the CPTPP. Some of these agreements have not yet entered into force, such as the already discussed Advanced Framework Agreement with the EU or the Pacific Alliance–Singapore FTA. Some of these treaties contain investment chapters with binding commitments regarding investment (e.g., the CPTPP, the 2017 Chile–Argentina FTA, and the 2008 Chile–Australia FTA); others, however, touch on investment only tangentially and do not include significant binding disciplines. The latter, instead, contain hortatory language on cooperation regarding the promotion and facilitation of investment (e.g., the 2013 Chile–Thailand FTA; the 2017 Chile–Indonesia Comprehensive Economic Partnership Agreement [CEPA]).

The CPTPP's investment chapter is worth discussing in greater detail when it comes to CRMs. As noted, the prohibition of performance requirements in investment treaties may limit the state's policy space to adopt various measures aimed at increased value addition and local industrialization. The CPTPP includes a wide prohibition of performance requirements modelled on the U.S. treaty practice (CPTPP, art. 9.10). As opposed to a more traditional approach that would apply this prohibition only to covered investments and investors of the treaty's contracting parties, the CPTPP applies its prohibition to "all investment in the territory" of the party adopting the measure (art. 9.2.1(c)). In other words, it also applies to investments from non-CPTPP states operating in a CPTPP contracting party. At the same time, its provision on Investment and Environmental, Health and other Regulatory Objectives (art. 9.16) also applies to all investments regardless of the origin.

Nevertheless, Chile has made reservations to the application of this provision in various sectors, including energy and mining (CPTPP Schedules of Chile Annex I). In fact, while none of the IIAs currently in force contain specific provisions on critical materials, Chile has been consistent in excluding hydrocarbons, metals, and minerals, including lithium, from the investment liberalization and performance requirement provisions in its treaties. To take the CPTPP as an example again, it contains significant investment liberalization commitments (art. 9.4, 9.5, 9.11), using a negative listing technique (see Section 6.2.6 on investment liberalization), and similar liberalization commitments are found in other Chilean IIAs (e.g., Pacific Alliance Additional Protocol 2014, art. 10.10; Chile–Argentina FTA, art. 8.11; Korea–Chile FTA, art. 10.9, 10.10; Chile–Colombia FTA, art. 9.8; Pacific Alliance–Singapore FTA (2022), art. 8.9). Chile made reservations to these liberalization and performance requirement commitments in cross-border services and investment (see, e.g., CPTPP Schedules of Chile Annex I and Annex II). These reservations stem from the above-discussed provision of the Chilean Constitution that gives the states absolute ownership over mines. This approach shows how countries may limit the impact of international obligations on their national policies through the active use of reservations.

One investment treaty signed recently by Chile is worth highlighting in this context. In 2015, Chile signed a BIT with Brazil that follows the Brazilian model that focuses on investment facilitation, promotion, cooperation, and dispute prevention rather than protection and dispute settlement. This treaty includes provisions on regulatory autonomy, policy space, and flexibility to introduce new regulations. It refers to the importance of sustainable development and regulates social and environmental aspects of investment much more extensively than traditional BITs. Significantly, Brazilian BITs do not contain typical investment protection standards and ISDS. This means that ISDS claims cannot directly impact the

parties' policy space. At the same time, these agreements create institutions and processes for intergovernmental cooperation that can be applied to investment in CRMs, too. This agreement has, however, not yet entered into force.

More recent BITs and FTAs signed by Chile include some provisions characteristic of modern investment agreements, especially when it comes to ESG. For instance, some recent Chilean investment treaties encourage parties to adopt sound environmental policies by referencing multilateral environmental agreements and acknowledge that it is inappropriate to promote investment by lowering environmental and/or labour standards (e.g., the 2010 Chile–Uruguay BIT, art. 14; the CPTPP (2018); the Chile–Ecuador Economic Complementation Agreement No. 75 (2020); the Chile–Brazil BIT 2015, art. 17; the Chile–Paraguay FTA 2021; the 2016 Chile–Hong Kong, China Special Administrative Regions [SAR] BIT, art. 15). In this respect, an interpretative note to the investment protection chapter of the Chile–EU Advanced Framework Agreement states that investors should expect the parties to adopt measures to comply with the parties' Paris Agreement obligations (see Box 6).

At the same time, the environment, public health, safety, and other public policy-related provisions are sometimes formulated as exceptions to all or only some investment standards, therefore reducing the efficacy of such provisions (typically, e.g., the Chile–Hong Kong, China SAR BIT 2016, art. 15, 18; the Chile–China FTA Investment Agreement 2012; and the Pacific Alliance–Singapore FTA, 2022).

The newer Chilean treaties also more commonly include provisions on CSR and responsible business conduct (e.g., 2016 Chile–Hong Kong, China, SAR BIT, art. 16). As a rule, these provisions are hortatory, merely directing the parties to encourage investors to incorporate the referenced standards (e.g., OECD Guidelines on Multinational Enterprises, UN Guiding Principles on Business and Human Rights) into their internal policies (e.g., Chile–Argentina FTA, art. 8.17; Chile–Paraguay FTA, 2021; Pacific Alliance–Singapore FTA, 2022; Chile–Hong Kong, China SAR BIT 2016, art. 16; Pacific Alliance–Singapore FTA, 2022, art. 8.17).

Box 6. Joint Interpretative Declaration on the Investment Protection Agreement between Chile and the EU and its Member States

"In light of their commitments under the Paris Agreement, the Contracting Parties confirm that their investors should expect that the Contracting Parties will adopt measures that are designed and applied to combat climate change or address its present or future consequences, by mitigation, adaptation, reparation, compensation or otherwise. When interpreting the provisions of the Investment Protection Agreement, the Tribunal should take due consideration of the commitments of the Parties under the Paris Agreement and their respective climate neutrality objectives. Thus, the Parties confirm their understanding that the provisions of the Investment Protection Agreement shall be interpreted and applied by the Tribunal by taking due consideration of the commitments of the Parties under the Paris Agreement and their respective climate neutrality objectives and in a way that allows the Parties to pursue their respective climate change mitigation and adaptation policies" (Joint Interpretative Declaration on the Investment Protection Agreement between Chile and the European Union and its Member States, 2023).

7.1.4 Contributions of MOUs

Chile currently has several MOUs related to critical minerals with some of its most important trade partners, including South Korea, the EU, Japan, and Canada. Many of the MOU texts signed by Chile are unknown. Based on the limited availability of the MOUs' texts, we may only hypothesize that similar limitations to those discussed regarding Indonesia apply here. That said, there are a number of innovations that are worth mentioning.

The Chile–South Korea MOU on mineral cooperation, signed in 2022, focuses on R&D cooperation in the supply of mineral resources. The parties also agreed to elevate bilateral relations to a strategic partnership. Exact details on the content and structure of the Chile–South Korea MOU on critical minerals are not available, as the text of the MOU has not been published. The MOU is said to be part of the South Korean response to the U.S. IRA, which allows for tax benefits for EVs and their components when produced in North America or sourced from a partner of the trade agreement with the United States (Lee, 2022). Thus, incorporating critical minerals from Chile, which has an FTA with the United States, may make Korean producers eligible for such benefits. In June 2024, on an official visit by the Chilean Minister of Mining to South Korea, the two parties expressed a desire to expand their cooperation ("Corea del Sur y Chile," 2024).

Similarly, Chile deepened its cooperation on mining with Japan, revising its existing MOU for the mining sector in June 2024. The updated cooperation will focus on the development of sustainable lithium mining and promote collaboration through an annual joint conference ("Chile, Japan boost ties," 2024). The text of the updated cooperation is also not available to the public.

The EU–Chile MOU on sustainable raw material value chains includes commitments to cooperate on the integration of raw material value chains via joint projects, new business models, and stronger trade and investment linkages. Further areas of cooperation include research and innovation, the development of infrastructure, and skills and training. The MOU also aims to facilitate the development of processing, manufacturing, and recycling capacities, specifically for Chile. The EU–Chile MOU also emphasizes the goal of taking forward the sustainable exploitation of mineral resources in Chile in line with internationally agreed principles and guidelines for high ESG standards. This MOU also includes the intention to develop a Strategic Partnership Roadmap to implement the partnership, effectively moving its implementation and concretization forward in time. Similarly, the participants intend to have a dedicated working group and annual meetings to monitor the implementation of that roadmap (MOU between the EU and the Republic of Chile on a Strategic Partnership on Sustainable Raw Materials Value Chains, 2023).

The Chile–Canada MOU similarly recognizes that the participants will promote environmental cooperation and build capacity by sharing environmental management knowledge and experience through the establishment of a work program, which "may" include areas that are of relevance to raw materials, such as the (1) development and implementation of environmental laws, regulations, procedures, standards, and policies; (2) environmental pollution prevention and control approaches with an emphasis on clean processes, technology, air pollution issues, water quality and wastewater treatment, and solid and hazardous waste

issues; (3) environmental impact assessment procedures and experiences; and (4) conservation and sustainable resource management policies and practices. These provisions are thus rather soft and more aspirational, without any detail on operationalization (Agreement on Environmental Cooperation between the Government of Canada and the Government of the Republic of Chile, 2022). Positively, though, the Chile–Canada MOU does establish a Joint Environmental Committee between the two countries to implement the MOU.

7.2 The Democratic Republic of the Congo

7.2.1 Summary of the Balance Between Exporter and Importer Objectives

The DRC is a major source of copper and cobalt, producing 11% and 73%, respectively, of the global supply. It also produces other minerals, such as tantalum (43% of the world supply) and tin (6% of the world supply) (Center on Global Energy Policy, 2024). The DRC refines most of its copper at home and exports copper cathodes. 57% of its export revenue comes from refined copper, and less than 5% from the export of raw copper (Observatory of Economic Complexity, n.d.-c). Similarly, the DRC refines most of its cobalt ores and concentrates to cobalt hydroxide before exporting (Center on Global Energy Policy, 2024).

The DRC uses trade instruments, specifically export taxes, to collect government revenue from the extractive sector. None of its trade agreements currently limit its ability to impose these taxes or any other forms of industrial protection. The country has also concluded several MOUs focusing on developing CRM supply chains, including investment in downstream capacities. As such, both its national trade policies and its international partnerships seem to lean toward the objective of promoting economic development.

The bilateral partnership between the DRC and Zambia suggests that the two countries aim to jointly develop their local production and promote industrialization instead of exporting unprocessed minerals. MOUs with international partners may facilitate this development and promote trade and investment in the CRM sector. For example, the U.S.–DRC–Zambia MOU explicitly mentions that the United States "intends to take appropriate steps to promote awareness of the DRC and Zambia Electric Vehicle Battery initiative within the U.S. private and investment sector" (MOU among the United States of America, the Democratic Republic of the Congo, and the Republic of Zambia Support for the Development of a Value Chain in the Electric Vehicle Battery Sector, 2022). In expert interviews, it was clear that there was some disappointment around how much (or how little) cooperation had eventuated under the various MOUs that had been signed. In the absence of investments from European and North American partners, it was noted that the DRC might turn instead to Chinese companies, which already own a substantial portion of the DRC's mines, to provide refining and processing investments instead.

Similarly, different regional trade agreements and customs unions aim to reduce tariff barriers and streamline procedures at the border, benefiting intra-African trade in general, including in CRMs. In addition, such regional initiatives provide forums for exchange on CRMs and the development of processing capacities, facilitating bilateral initiatives and an African approach to CRMs.

For the DRC's international partners, different forms of partnerships can increase the security of supply and diversify sources of CRMs. The EU–DRC MOU states this objective quite clearly: "Securing the supply of strategic and CRMs in a sustainable manner, is an essential prerequisite for ensuring the green transition" (Protocole d'Entente Sur Un Partenariat sur les Chaînes de Valeur Durables des Matières Premières Critiques et Stratégiques Entre: L'Union Européenne Représentée par la Commission Européenne et la République Démocratique du Congo, 2023).

The limits to the DRC's economic development objectives are not, then, coming from restrictive trade agreements but from its investment agreements. Currently, the investment setup of the DRC may also pose risks to its economic development plans and its implementation of ESGs. While both analyzed MOUs contain references to ESG standards, it should be noted that they are concluded against the backdrop of old-generation BITs that contain strong investment protection standards and ISDS. To the extent that ESG standards will have to be implemented through various regulations and laws, they will impact foreign investors operating in the DRC. The same goes for other local content policies aimed at economic development. As such, these laws and regulations expose the country to costly ISDS claims.

This shows that for full operationalization and implementation of the MOUs' objectives, these treaties should be reformed as part of the cooperation between the parties. This is doubly the case, as MOUs are not legally binding, whereas BITs are.

On the other hand, these BITs do not contain prohibitions of performance requirements and investment liberalization provisions. These policy options are still open to the DRC, at least as far as investment treaties are concerned.

The DRC's regional investment instruments fare significantly better when considering the objectives of national industrialization and ESG than the old-generation treaties. In fact, some of the DRC's regional investment treaties, such as the African Continental Free Trade Agreement (AfCFTA) Protocol on Investment (POI) or Common Market for Eastern and Southern Africa (COMESA) Common Investment Agreement, are some of the most progressive and balanced investment treaties. This apparent disparity highlights the need to align the country's BIT stock with its regional investment instruments.

7.2.2 Current Trade and Investment Policy Dynamics

The DRC is a central country in the global cobalt and copper markets. The DRC holds the majority of the world's cobalt reserves and about 70% of its production, alongside substantial copper resources (U.S. Department of Commerce, 2024a). This abundance positions the DRC as a strategic partner for many countries and multinational corporations seeking to secure a stable and reliable source of cobalt and copper. Recognizing the DRC's strategic importance, several countries have recently entered into trade and investment partnerships with the country.

The DRC is a least-developed country (UNCTAD, n.d.-c) and was the 87th global economy in terms of GDP. It is the second-largest country in Africa and has a population of 99 million, leaving the DRC at the very bottom of ratings of economies by GDP per capita—in 2022, it ranked 179th globally. The DRC is the world's largest producer of cobalt and copper and possesses significant gold and lithium reserves, many of which remain untapped.

In order to extract government revenue from the commodity sector, the DRC levies export taxes on several minerals (OECD, 2022), as well as mining royalties. The commodity sector accounts for 46% of government revenues and over 90% of exports. In 2022, the DRC was the world's biggest exporter of cobalt and its oxides and hydroxides, copper alloys, cobalt ore, and other ores (Observatory of Economic Complexity, n.d.-c). The DRC's top five export destinations in 2024 were China (41% of exports), Tanzania, Zambia, South Africa, and Singapore (7.2%) (U.S. Department of Commerce, 2024a).

The DRC is a relatively open, highly export-dependent economy. It is a member of regional trade blocs: the COMESA (21 member states) and the Southern African Development Community (SADC) (16 member states). The DRC is also a member of the Economic Community of Central African States and the East African Community (EAC). It has ratified the AfCFTA.

The DRC has not signed any FTAs outside the African continent, but because of its status as a least-developed country, it benefits from preferential tariffs under the Generalized System of Preferences, granted among others by the EU, the United States, Japan, and Canada. In the EU, for example, the DRC benefits from the Everything But Arms regime that removes tariffs and quotas for all imports of goods from the beneficiaries (European Commission, n.d.-b). This regime also encourages regional integration between its beneficiaries, allowing the use of each others' materials and components while the final good is still treated as fully originating in the exporting country.

With respect to investment, compared with Chile and Indonesia, investment flows into the DRC are relatively small. According to UNCTAD, the DRC had annual FDI inflows short of USD 2 billion annually over the last 2 years, specifically 1.64 billion in 2023 (UNCTAD, 2024a) and 1.8 billion in 2022 (UNCTAD, 2023b). The leading sources of FDI are South Africa, Belgium, and China. Mining investment has been the dominant sector in the DRC for the last several decades. It has been growing recently due to the increasing demand for transition minerals, such as cobalt and copper (U.S. Department of State, 2023). In the DRC, the main legislative instruments are the 2002 Investment Code and, specifically concerning mining, the 2002 Mining Code and the 2003 Mining Regulations (Extractive Industries Transparency Initiative, 2022; Ngalula & Elohim, 2024). In 2018, cobalt, germanium, and columbite-tantalite were declared strategic materials (Ramdoo, 2024).

The mining sector is within the mandate of the Ministry of Mines, whereas foreign investment matters are dealt with by the National Investment Promotion Agency (Agence National pour la Promotion des Investissements). Experts within the DRC noted in interviews that given the strategic importance of minerals such as cobalt and copper, partnership agreements and MOUs are negotiated directly at the political level.

Mining in the DRC has been widely criticized for its environmental and social impacts. Experts interviewed argued that this was mostly the case in artisanal mining, while around 80% of mining in the country was well-managed, large-scale mining governed by national legislation, which includes multiple regulations on the technical evaluation of the mitigation and rehabilitation plan, the environmental impact study, and the environmental management plan (Bourassa & Lacy, 2020). Under the Mining Code, companies are required to manage mining waste and tailings and are responsible for damage caused to communities or the environment surrounding a mine (ICLG, 2023). Some studies have, however, questioned the efficacy of existing regulations, even in the case of industrial mines (RAID & African Resources Watch, 2024).

7.2.3 Key Issues and Developments in Trade and Investment Agreements

Trade Agreements

The trade agreements the DRC is party to mentioned above do not feature any specific provisions on CRMs, nor are there any such agreements in negotiation. It is, however, important to note that its regional trade agreements with other African countries create a favourable basis for the regional development of CRM value chains. Initiatives such as the AfCFTA or the SADC reduce trade barriers and provide spaces for discussion on building up African green technology value chains.

While the DRC's regional agreements do not focus on CRMs, some of them feature important ESG provisions that may be relevant to its mining sector. Agreements such as the SADC and AfCFTA mainly feature provisions aimed at cooperation. For example, one of the SADC's objectives is to achieve sustainable utilization of natural resources and effective protection of the environment (art. 5). The EAC Act and COMESA, however, are more prolific in their environmental provisions. With respect to natural resources, EAC members "recognise that development activities may have negative impacts on the environment leading to the degradation of the environment and depletion of natural resources and that a clean and healthy environment is a prerequisite for sustainable development. The Partner States agree to take concerted measures to foster cooperation in the joint and efficient management and sustainable utilisation of natural resources within the Community" (EAC Act, 2002, art. 111). While this recognition is useful, the jury is out on the implementation of measures to protect social and environmental interests.

The goal goes beyond cooperation as EAC partners undertake "to cooperate and coordinate their policies and actions for the protection and conservation of the natural resources and environment against all forms of degradation and pollution arising from developmental activities" (EAC Act, 2002, art. 111). The EAC also foresees the development and promotion of capacity-building programs for sustainable management of natural resources (art. 111). The level of cooperation set forward is deep and includes highly specific objectives, such as the commitment "to develop a common environmental management policy that would sustain the eco-systems of the Partner States, prevent, arrest and reverse the effects of environmental degradation" or the aspiration "to integrate environmental management and conservation measures in all developmental activities, including trade and mining"

(EAC Act, 2002, art. 112). To reach these goals, member states commit to a number of things, such as adopting common environmental control regulations, incentives, and standards; adopting environmentally sound management techniques; and harmonizing their policies and regulations for the sustainable and integrated management of shared natural resources and ecosystems. This level of detail in an international agreement is useful. Even if it needs to be followed by implementation mechanisms, the recognition of the potential means of cooperation lays the necessary groundwork for subsequent discussions on their implementation. It also goes beyond recognizing the need for policy space on environmental standards to actual multilateral cooperation to develop new policies.

COMESA also has a separate chapter on the development of "natural resources, environment, and wildlife" (COMESA Treaty, Chapter 16) that is relevant to mineral development through similar provisions as found in the EAC Act. Similarly to the EAC Act, "the Member States agree to take measures to foster cooperation in the joint and efficient management and sustainable utilisation of natural resources within the Common Market" (COMESA Treaty, art. 123) because they "recognise that economic activity is often accompanied by environmental degradation and excessive depletion of resources" (COMESA Treaty, art. 122,). The text outlines several concerted measures that member states will take, such as "common environmental control regulations, incentives, and standards, and the adoption of sound land management techniques for the control of soil erosion, desertification, and bush encroachment" (COMESA Treaty, art. 124). None of these specific measures mentions mining, however.

Investment Agreements

The DRC has a relatively small number of BITs in force—six. These BITs are old-generation treaties that provide extensive investment protections and access to ISDS and include little to no provisions relating to policy space, environment, labour, sustainability, or ESG more broadly. These treaties covered investors from the most important CRM-consuming countries, such as European states (Germany, France, Belgium, Luxembourg, and Switzerland), the United States, and China. Some of these treaties do not even include any exception or derogation clauses (e.g., DRC–France, 1972; DRC–U.S., 1984). These BITs, which are still in force, restrict the DRC government's policy space, including in the regulation of CRM investment and the implementation of ESG policies.

On the other hand, these BITs do not contain prohibitions on performance requirements and investment liberalization provisions. Interestingly, the U.S. Department of State's Letter of Submittal regarding the 1984 U.S.–DRC BIT stated that "it was not possible to obtain Zaire's commitment not to impose performance requirements as conditions for investment, as called for by our model text. Zaire is one of many developing countries that impose requirements on foreign investors to obtain certain development objectives. Therefore, we accepted hortatory language (art. ll, para. 7) to the effect that each Party shall 'endeavor' within 'the context of its national economic policies and goals' to 'avoid' the imposition of export or local purchase requirements" (see U.S. Department of State, 1984).

DRC's later treaties—specifically, the 2005 BIT with the Belgium-Luxembourg Economic Union—include limited provisions on environment and labour. Articles 5 and 6 confirm the right of states to determine the level of environmental and labour protection, acknowledge that it is not appropriate to relax national environmental and labour legislation in order to attract foreign investors and reaffirm the commitments of the parties to international environmental agreements, as well as their obligations as members of the International Labour Organization.

The DRC's BITs do not cater to a critical mineral-rich country's objectives of increasing domestic value addition and economic development, as they significantly restrict the country's policy space, especially when adopting ESG-improving national policies. They provide wide protections to covered investors and contain little to no provisions suggesting that ESG values and policies may trump these protections.

It should be noted that the DRC has recently signed BITs with important capital-exporting states—Türkiye and the United Arab Emirates (UAE)—among others, that are not yet in force. The BIT signed with Rwanda (2021) represents the most progressive of the DRC's BITs. However, it has not yet entered into force. In addition to the exception clause, the BIT in question includes a provision on business ethics and human rights (art. 13), investor obligations (art. 9–11), and anti-corruption provisions (art. 12). Furthermore, a provision on CSR (art. 14) stipulates that "Investors and their Investments shall ensure that the pursuit of their economic objective does not conflict with the social and economic development of the Host State and shall be sensitive to changes in the social and economic objectives of the Host State" (DRC–Rwanda BIT, 2021, art. 14).

Furthermore, the protection of the environment and the use of natural resources are given special consideration in this treaty. For instance, investors are required to conduct environmental and social impact assessments and maintain environmental management systems (art. 15–16). In addition, investors are expected to respect human rights in the workplace, in the exercise of their operations, and in the community and state in which they are located. They are also expected to act in accordance with the core labour standards required by the International Labour Organization (art. 15–18). The BIT also explicitly acknowledges the right to regulate being further specified in article 23. At the same time, the BIT contains basic investment protection standards, although refined, and access to ISDS.

In addition, and specifically relevant to the mining of cobalt, tantalum, and tungsten, the DRC implements the *OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas*. The DRC's government has reflected some of the *OECD Due Diligence Guidelines* elements in its 2018 revision of the Mining Code; however, implementation concerns remain (OECD, 2019). While the implementation of the new legislation might create a basis for ISDS disputes if it negatively affects foreign investors, there have been no such cases for the time being.

As opposed to its old-generation BITs, the DRC's regional IIAs contain various provisions that reflect the needs and interests of economic development to a greater extent. They also contain powerful ESG-related provisions. Most importantly, the country is a member of AfCFTA. Therefore, the recently adopted AfCFTA POI will soon apply to it.

The AfCFTA POI is a standard-defining investment treaty that incorporates numerous innovative provisions. The POI puts sustainable development and sustainable investment at its core. Its provisions are geared toward industrialization and poverty reduction and aim to develop a vibrant private sector (Danish et al., 2023). At the same time, the investment-enhancing provisions are not hierarchically superior to various ESG values and are instead subject to them. The POI includes various exceptions and carve-outs to limited investment protection standards and assures that national laws are the main regulatory instrument on investment. It favours investment cooperation, promotion, and facilitation over protection and focuses on specifically sustainable investments. It contains a full chapter on sustainable development-related issues, such as minimum standards on the environment, labour and consumer protection, climate change, and public health (Chapter 4). This chapter also contains provisions designed specifically to address economic development spillovers of foreign investment, specifically through human resources development and technology transfer. Significantly, it contains several investor obligations in ESG areas to balance the treaty (i.e., business and human rights, labour, environmental protection, Indigenous Peoples and local communities, socio-political obligations, anti-corruption, CSR, corporate governance, transfer pricing, and taxation).

As noted above, the DRC is also a member of a number of regional economic integration organizations (REIOs) apart from the AfCFTA, such as COMESA and SADC. The constituent treaties of these REIOs include frameworks for the management of natural resources, although mostly in aspirational language. Crucially, however, these REIOs also have their own regional investment instruments that often contain various innovative provisions similar to those contained in the AfCFTA POI (e.g., the COMESA Common Investment Agreement; SADC Investment Protocol).

7.2.4 Contribution of MOUs

The DRC has signed an MOU on sustainable raw material value chains with the EU under the EU's Global Gateway initiative, a framework for investments in infrastructure, public services, and sustainable development (European Commission, 2023b; Protocole d'Ententes sur un Partenariat sur les Chaînes de Valeur Durables des Matières Premières Critiques et Stratégiques Entre: L'Union Européenne Représentée par la Commission Européenne et la République Démocratique du Congo, 2023). According to the EU Commission, the MOUs "support the development of sustainable and resilient value chains of CRMs, while creating quality local jobs" (European Commission, 2023b). Like most other MOUs, the DRC and the EU agreed to sign a Strategic Partnership Roadmap to implement the MOU and set up a working group of senior officials. Until then, details on the operationalization of the MOU's diverse objectives are limited. Conversations with experts found that the development of a roadmap is ongoing, but interest from European companies in investing in downstream production in the DRC has so far been limited. This may be because those same companies are key actors in the EU's own targets to retain and grow the processing of critical minerals on EU territory. In 2021, the EU refined 14% of the world's cobalt (Barrera, 2021), but this will need to be increased over time to meet growing demand. Given that copper was included under the CRM Act, the EU will also have to build new copper processing and refining plants if it wants to meet the 40% domestic processing by the 2030 target.

The MOU focuses on closer economic and industrial integration, as well as advancing "trade and investment in raw materials value chains, both upstream and downstream" (MOU EU–Democratic Republic of Congo on sustainable raw materials, 2023). Areas of cooperation include the development of infrastructure, sustainable production, cooperation on research and innovation, and capacity building. The overall objectives of the partnership, as described in the MOU, include promoting the alignment of sustainable raw materials value chains developed between the EU and the DRC with internationally agreed principles and guidelines for ESG standards and cooperation on skills, capacity building, and competencies necessary for the development of sustainable raw materials value chains, including the promotion of the most sustainable extraction and transformation practices, and circular economy.

The MOU also includes a strong focus on ESG standards, including the recognition that increased extraction and transformation of strategic and critical raw materials, as well as the development of related value chains, need to be coupled with strong commitments to ESG standards, notably concerning transparency, traceability, and the contribution to peace and stability in the region. The MOU also reiterates that the document *Towards a Comprehensive Strategy with Africa*, adopted in early 2020, recognizes the need for enhanced cooperation between the EU and Africa to develop a responsible raw materials sector, promote secure and clean industrial value chains, and respect ambitious environmental and climate standards (European Parliament, 2020).

Together with Zambia, the DRC also signed an MOU with the United States on the development of EV battery value chains, which includes the extraction of raw materials. Through the MOU, the United States intends to support the development of EV value chains in Zambia and the DRC by cooperating on "feasibility studies, consultancies, and technical assistance opportunities" (MOU among the United States of America, the Democratic Republic of the Congo, and the Republic of Zambia Support for the Development of a Value Chain in the Electric Vehicle Battery Sector, 2022). The United States also intends to promote the cooperation initiative among U.S. investors and is interested in supporting the development of industrialized economic growth through EV precursor plants (Memorandum of Understanding among the United States of America, the Democratic Republic of the Congo, and the Republic of Zambia Support for the Development of a Value Chain in the Electric Vehicle Battery Sector, 2022). While the MOU refers to the goals of the Paris Agreement and the importance of EVs in contributing to reducing global emissions, the MOU does not further mention any ESG standards.

Apart from MOUs with importers of CRMs, the DRC, together with Zambia, has launched a Joint Initiative on the establishment of a value chain in the electric battery and clean energy sector (Ministry of Commerce, Trade and Industry, 2023). The initiative aims to facilitate mineral-based industrialization by creating a common governance framework for battery value chains, including the extraction of raw materials, as well as establishing Special Economic Zones for the production of battery precursors, batteries, and EVs. It is worth noting that in the past, Special Economic Zones led to several ISDS cases when their regulation was changed (Ndubai-Ngigi et al., 2024).

Finally, it has been reported that as many as 52 African countries have signed MOUs with China as part of the Belt and Road Initiative (Ramdoo, 2024). While the scope of these MOUs varies and may cover natural resources or infrastructure, because their content is not publicly available, we are not able to analyze them.

7.3 Indonesia

7.3.1 Summary of the Balance Between Export and Import Objectives

Indonesia produces several critical minerals, notably supplying about 48% of the world's nickel, 23% of tin, 7% of zirconium, and 5% of cobalt in 2022 (Center on Global Energy Policy, 2024). The makeup of its exports is quickly changing, as Indonesia now exports processed nickel and is continuously investing in processing the highest purity nickel that can be used in batteries (Silva, 2024). This nickel production also produces cobalt as a by-product, and, as a result, Indonesia is set to become the country with the biggest cobalt production growth in the world (Decena & Dholakia, 2023). As some other Association of Southeast Asian Nations (ASEAN) members already have investment-backed plans to pursue EV manufacturing, Indonesia is building a vertically integrated value chain from ores to electric batteries to EVs (Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development [IGF], 2023).

Indonesia uses trade instruments to limit exports of unprocessed minerals and instead promote investment into downstream capacities. The country's export ban on certain unprocessed raw materials, such as nickel, has incentivized foreign investors to establish processing sites in Indonesia directly. Indonesia thus currently prioritizes economic development at the expense of a fully open trade policy (Daga, 2024). However, this approach has not come without confrontation: Indonesia's policy, especially on nickel, has been challenged in front of the WTO dispute settlement mechanism. Provisions in FTAs mirroring WTO rules could also lead to further challenges under FTA dispute settlement clauses.

Currently, large parts of Indonesia's mining and processing sectors are dominated by Chinese firms, especially in nickel extraction (Emont, 2023). Interviews confirmed that Indonesia seeks to diversify the range of investors involved in the processing of critical minerals and limit its dependence on China. In addition, Indonesia aims to establish itself as a hub for EV production. Both the MOU with Australia on cooperation in the EV sector and Indonesia's push to negotiate a limited FTA with the United States reflect this purpose.

ESG standards do not appear to be a primary priority in Indonesia's use of trade instruments in the CRM sector, with the exception being the Indonesia–Japan FTA, which specifically mentions that environmental issues should be taken into account when designing policies for the energy and raw materials sector. In addition, parties to that agreement reaffirm their commitments under the international agreements concerning the environment they have signed. Nonetheless, interviews confirmed that differences over sustainability provisions (and the EU deforestation regulation) are a key factor in the stalling of negotiations for a CEPA between the EU and Indonesia. Similarly, a potential future U.S.-Indonesia CMA also seems

to hinge on higher environmental standards being included in the agreement. Despite tensions over ESG compliance, interest in signing MOUs or trade agreements with Indonesia will likely remain high, due to Indonesia's significant endowments in CRMs, and nickel specifically.

As for investment treaties, Indonesia's existing stock does not seem to cater to its interests as a CRM-producing country keen on mid- and downstream industrialization. Such treaties do not provide regulations that are responsive to the policy needs presented by industrialization related to critical minerals. First, given that Indonesia is the world's largest nickel producer, investment in the mining of nickel is likely going to come regardless of the presence of an IIA. Second, the existing IIAs only marginally contribute to the improvement in ESG. Regarding ESG provisions, investment chapters in Indonesia's FTAs fare better than the country's standalone BITs. However, even the ESG-related provisions in FTAs are not generally enforceable, and they remain voluntary and aspirational. Investment treaties could be more ambitious on such topics by providing tangible investor obligations on ESG and avenues for cooperation, technology transfer, and R&D (Ostransky & Bonnitcha, 2024). This is particularly relevant for CRM-based industrialization. The Indo-Pacific Economic Framework for Prosperity agreements, for instance, tend to go in this direction in that they create institutions and processes for ongoing cooperation on investment matters.

7.3.2 Current Trade and Investment Policy Dynamics

Trade and Investment

Indonesia is the world's top nickel producer and an important source of coal, copper, gold, tin, and bauxite. In 2022, Indonesia had total exports of USD 320 billion and total imports of USD 230 billion, leading to a positive trade balance of USD 90 billion. Its main exports consisted of coal briquettes, palm oil, ferroalloys, petroleum gas, and copper ore, and its principal export destinations were China, the United States, Japan, India, and Malaysia (Observatory of Economic Complexity, 2022). The mining sector significantly contributes to the Indonesian economy, with 9% of total GDP in 2022 (Rayos, 2023). China is the most important destination for its mineral exports, followed by Japan, Korea, and the Philippines (World Integrated Trade Solution, 2019).

Indonesian trade policy is characterized by a comparatively low degree of openness and integration into global value chains (WTO Secretariat, 2020), relying on its large internal market as the fourth most populous country in the world. That being said, Indonesia is increasingly active with respect to trade agreements. It is a founding member of ASEAN and is a party to regional FTAs, such as the Regional Comprehensive Economic Partnership or the ASEAN–Australia and New Zealand FTA. It has also concluded individual agreements, such as the Economic Partnership Agreement with the European Free Trade Agreement (EFTA) states, as well as agreements with Japan and South Korea. Indonesia is also currently negotiating a CEPA with the EU and has proposed negotiations for a critical mineral-focused trade agreement with the United States.

Indonesia frequently uses export restrictions in the form of export taxes, licensing, or prohibitions. Such measures serve an array of policy goals, such as collecting tax revenue, developing downstream processing capacities, securing intermediate goods for lower prices,

and reducing the rate of depletion of natural resources (WTO Secretariat, 2020). Especially in the mining sector, export restrictions are an important tool to develop the competitiveness of Indonesia's domestic industry and encourage investment in smelter construction and local jobs. A total of 131 mineral and 12 rock products may only be exported by permit holders, and 13 mineral products need prior approval by the Directorate-General of Foreign Trade to be exported (WTO Secretariat, 2020).

Indonesia's export prohibition on unprocessed ores and raw metals, such as nickel or bauxite (IEA, 2023c), is among its most contentious measures. Between 2009 and 2019, the Indonesian government gradually adopted a series of bans that require nickel to be domestically processed before it can be exported. Together with these export measures, the government amended its Mining Law in 2020 to rapidly expand the mining sector by easing licensing procedures and scrapping exploration fees while focusing on domestic exploration and geological prospecting (IGF, 2023). It also adopted various measures to attract investment in processing capacities, such as tax breaks for processing operations in the territory (IGF, 2023). Additional measures were adopted to support downstream capacities, such as subsidies, fiscal incentives, and R&D support, in particular with regard to EV value chains (IGF, 2023).

While these measures have attracted important downstream investment (IEA, 2023c), including from such companies as Hyundai Motors and Foxconn, and increased the value of Indonesia's nickel exports, these policies have been challenged by Indonesia's trading partners, notably the EU. The WTO panel ruled in the EU's favour, after which Indonesia appealed the decision. With the Appellate Body effectively defunct, the final decision on the matter remains blocked (European Commission, 2023a).

It is too early to make a decisive conclusion on the impact of Indonesia's export restrictions, but new investments have come from Chinese companies such as Tsingshan, Lygend Resources & Technology, and Zhejiang Huayou Cobalt (Reuters & Pollard, 2024). After several high-profile explosions at mining sites, the Indonesian government called for safety improvements and stricter monitoring of environmental standards. It also delayed issuing the mining permits and suspended operations at some sites (Suroyo, 2023) suspected of illegal activities (Daga, 2024).

With respect to investment, Indonesia's FDI inflows have been above USD 20 billion in the last 2 years (UNCTAD, 2024a, 2023b).[9] Singapore is the main source of FDI, followed by the PRC, Hong Kong, and Japan. The country has recently undergone significant reforms toward investment liberalization. Presidential Regulation No. 10 of 2021 (PR10/2021), often referred to as the New Investment List, has opened several new sectors to foreign investors. The default principle is that all sectors are open for investment unless stated otherwise (Medina, 2024).

The New Investment List interacts with other sectoral and general national laws, which then influence and condition incoming foreign investment, including in CRM sectors (Dawborn et al., 2021; PWC, 2023). For instance, Presidential Regulation No. 55/2019 on the Acceleration of Battery Electric Vehicle Programs for Road Transportation requires a minimum of 35% local content for hybrid cars and 40% local content for battery EVs to qualify for tax

[9] Note that the Indonesia Investment Authority (2022, 2023) records over USD 40 billion annually in FDI inflows.

incentives (Eberhard Tundang, 2023). Just these examples illuminate Indonesia's very clear objective of building domestic value chains all the way from the mine to finished products.

Responsible Mining

The adoption and enforcement of ESG conditions in Indonesia's mining sector are limited. For exploration, no explicit environmental authorization is needed. However, as per their mining and environment law, all mining companies are required to create and maintain an environmental impact analysis encompassing an environmental impact assessment and management and monitoring plans. Technical approval is also necessary for the storage of tailings and waste, and regulations include several details, such as the requirement that the location of tailings disposal is not prone to flooding or natural disasters. There are also social responsibility requirements in the form of development and empowerment programs for local communities (PWC, 2023).

The enforcement of these standards and regulations, however, appears to be weak (Rohman et al., 2024), with labour and environmental regulations often deemed insufficient by investors. Several problems have surfaced in recent years, including instances of acid rain; bad living conditions for mine workers, including deadly accidents; being forced not to unionize; and security force operations being used to quell protests (Teja, 2023). Many of Indonesia's existing nickel mining and processing operations are reported to have low environmental, human rights, and labour standards and a heavy dependence on coal power plants (Yudhistira et al., 2023). This is especially the case with the use of high-pressure acid leaching, which is cost-effective but generally very detrimental to the environment.

Investors who want better implementation of ESG conditions have argued that given the lack of enforcement of standards by Chinese operations, it is very difficult for responsible mining projects to compete (Teja, 2023). Nonetheless, there have been positive developments, with companies and projects committing to higher standards themselves. Several nickel mining companies in Indonesia are already using the Initiative for Responsible Mining Assurance (IRMA) mine measure tool in preparation for participating in the IRMA's independent assessment process (Keating, 2024). For example, Eramet committed to responsible mining in Indonesia and made it public that it wishes to be audited against the IRMA standard for responsible mining (Eramet, 2022), and so did PT Vale. Recently, Australian government officials have also expressed interest in working with Indonesia on improving ESG standards in the resources sector (Shofa, 2024).[10]

[10] There are several private sector initiatives in the mining sector. The International Council on Mining and Metals is also active in Indonesia. In Central Papua, PT Freeport Indonesia is partnering with local contractors on a rehabilitation project of over 4,000 ha of forest in the Jayapura Regency. At the start of 2023, 168,718 native seedlings had been planted, covering an initial area of 153 ha, with many more to come (International Council on Mining and Metals, n.d.).

7.3.3 Key Issues and Developments in Trade and Investment Agreements

Trade Agreements

While Indonesia has concluded FTAs with many of its main trade partners, including through its membership in ASEAN, critical minerals are still a marginal topic in Indonesian FTAs. Very few of the agreements canvassed as part of this research mentioned critical minerals directly. Nonetheless, a few of Indonesia's bilateral trade agreements contain provisions concerning mineral resources. For example, both the Indonesia–Korea FTA (2020) and Indonesia–Chile FTA (2017) mention energy and mineral resources as an area of economic cooperation without going into more legally binding provisions related to the sector. It is, however, important to mention that the value chains of the electronics, automotive, and renewable energy supply chains play an important role in the trade policy considerations of Indonesia and its trading partners. In line with a general trend to minimize tariffs on raw materials and industrial goods, import duties on important critical minerals such as cobalt, nickel, and lithium are reduced to zero in Indonesia's key trade agreements.

Beyond tariffs, provisions in Indonesian trade agreements potentially relevant to CRM value chains concern export restrictions, a policy tool Indonesia makes use of specifically to develop local processing capacities (WTO Secretariat, 2020).

Provisions on export prohibitions or licensing are scarce in Indonesian trade agreements and rarely go beyond WTO rules. For example, the CPTPP (2018, art. 2.10) to which Indonesia is a party, mainly reinforces the existing WTO limitations on the use of such quantitative measures.

Similarly, the Indonesia–Japan Economic Partnership Agreement (2007), in a dedicated chapter on energy and mineral resources, reaffirms the parties' GATT commitments on import and export restrictions, which prohibits most types of such restrictions. The chapter also provides detailed rules on export licensing procedures and administration, ensuring transparency and non-discrimination of such measures (art. 100). Finally, the parties commit to collaborate on Indonesia's energy and minerals sector, specifically, in the areas of policy development, capacity building, and technology transfer.

Interestingly, the EFTA–Indonesia CEPA (art. 2.3.) ensures that the abolition of export duties toward a non-party to the agreement is extended to both parties. In other words, if Indonesia commits not to impose duties on exports to any non-EFTA country, EFTA parties would benefit from that better treatment.

Provisions referencing export prohibitions and licensing—policy tools commonly used by Indonesia to boost downstream CRM processing capacities—lock in WTO rules in its bilateral relations. In other words, Indonesia has largely succeeded in maintaining all of the policy space it has under WTO rules to impose export duties. This raises the question of how much value the FTA provisions add. In practice, FTA commitments do add a degree of additional restraint on policy space, even if, in substance, they repeat existing rules. The terms of a bilateral relationship mean that not abiding by an FTA commitment can have consequences (political or economic) that go beyond those of a WTO commitment. That said, FTA-related

consultations and dispute settlement procedures are not always public, which is why it remains unclear to what extent Indonesia's export measures are addressed in bilateral relations.

Apart from measures on trade in goods, Indonesian trade agreements rarely mention restrictions on mining-related services. If restrictions appear, they are highly specific to certain sub-sectors, such as the requirement to obtain a business licence for foreign businesses to take part in auctions of metallic minerals or coal (EFTA–Indonesia CEPA, 2018).

The chapter on energy and mineral resources in the Indonesia–Japan Economic Partnership Agreement is the most comprehensive of those we have studied. In addition to the provisions on quantitative restrictions mentioned before, the chapter requires parties to avoid disruption of contractual obligations when regulating their energy and minerals sector (art. 101) and welcomes contributions by investors to the development of communities when investments are made in the energy and mineral resources sector (art. 103). Finally, the parties propose to collaborate on Indonesia's energy and minerals sector, specifically, in the areas of policy development, capacity building, and technology transfer (art. 104). Provisions of this article point out that parties "shall endeavour to make available necessary funds and other resources for the implementation of cooperation" and that such costs would be borne in "an equitable manner to be agreed between Parties," even though the cooperation explicitly focuses only on Indonesia's energy and minerals sector. A separate Implementing Agreement will define specific forms of cooperation.

ESG-related provisions in FTAs can also be relevant for CRMs, especially considering the environmental and social impacts of the mining industry. Many of Indonesia's FTAs feature common commitments, such as not lowering levels of protection to incentivize trade and investment or commitments to effectively enforce their own environmental laws. Beyond that, several agreements encourage compliance with internationally recognized standards and CSR, such as the Indonesia–South Korea FTA (art. 7.18). The Indonesia–Japan FTA engages each party to take environmental considerations into account and promote public awareness of the environmental impacts of mining (art. 102).

In terms of key developments, Indonesia is currently negotiating a CEPA with the EU, where the EU has tabled a proposal for a chapter on energy and raw materials (European Commission, 2022). The EU's proposal would prohibit import and export monopolies, define rules for exploration authorizations, and propose several areas of cooperation, such as R&D, ESG standards, or cooperation in international forums. Nonetheless, no substantial progress has been made in recent negotiations due, among several reasons, to differences in sustainability issues and disputes over Indonesia's nickel policy (Beardsley, 2024).

Indonesia is also part of the Indo-Pacific Economic Framework for Prosperity (IPEF), a U.S. initiative seeking to negotiate agreements on trade, supply chains, and clean and fair economies with 13 partners, including Australia, India, Japan, Singapore, and Thailand, among others (U.S. Department of Commerce, n.d.). The initiative also promotes U.S. investment in the region. As of now, negotiations on the clean economy pillar, the fair economy pillar, and an agreement on supply chains have been concluded (U.S. Department of Commerce, 2024b). On the trade pillar, however, no substantial progress has been made, despite the pillar not containing any market access commitments (Murphy, 2024). CRMs

are referenced in the clean economy pillar (Indo-Pacific Economic Framework for Prosperity – Agreement Relating to a Clean Economy, 2024) in the context of assuring clean energy supply chains, and in particular, a focus on the reduction of supply chain vulnerability through increased cooperation.

Indonesia has also proposed negotiating a limited trade agreement with the United States, focusing on CRMs. Indonesia aims to reduce its dependence on China and potentially profit from U.S. subsidies for EV production under the IRA. But even in the case of a limited CMA, concerns remain over Indonesia's capacity to comply with the ESG and Foreign Entities of Concern requirements (Yudhistira et al., 2023). Former and current policy-makers close to this dossier have argued that any future CMA would have to include more advanced environmental requirements. There has also been an open letter from a group of civil society organizations expressing concerns regarding the agreement, given concerns about the Indonesian mining sector's social and environmental impacts (350.org et al., 2023). The U.S.–Indonesia joint statement following a recent meeting between Presidents Jokowi and Biden included a commitment "to develop a critical minerals action plan that encompasses all these lines of effort and seeks to increase the standard of investment in the critical minerals sectors in both countries. They commit to pursue these efforts with a view toward establishing the foundation to launch future negotiations on a critical minerals agreement" (The White House, 2023). The United States has also approached Indonesia to join the Minerals Security Partnership (Reuters, 2024).

Investment Agreements

Since 1968, when Indonesia signed its first BIT with Denmark, the government has signed 73 BITs in total. As of June 2024, Indonesia has 28 BITs in force. Most of them were adopted in the 1990s and early 2000s, and they represent the so-called old-generation treaties discussed earlier in Section 6. They are characterized by a wide and indiscriminate scope of application and broad investment protection standards, coupled with ISDS. These agreements restrict the country's policy space, including in the CRM sector.

With its current investment treaty policy, Indonesia stands somewhat apart from most states. In 2014, Indonesia became one of the few states that decided to terminate a majority of its existing stock of IIAs, specifically targeting the old-generation BITs. The main reason was to limit the incidence of ISDS cases and to review the balance that these treaties strike between investment protection and public policy space (Trakman & Sharma, 2014). As a result, since 2014, 31 BITs have been terminated (UNCTAD, n.d.-a).[11]

As these treaties were terminated unilaterally, their sunset clauses are applicable, which means that investments that had been made before their termination dates continue to be protected for relatively long periods: for example, 20 years from 2017 for the terminated 2003 BIT with Germany. This is significant in the context of new investments in the Indonesian CRM sectors

[11] This number includes treaties terminated prior to 2014, for instance by virtue of replacing older treaties with new ones. The already-mentioned 1968 Denmark–Indonesia BIT was terminated in 2009, following the entry into force of the replacement Denmark–Indonesia BIT from 2007. The latter treaty is not among those terminated post-2014.

that have been made after the treaty terminations. These are no longer protected by the sunset clauses.

Nevertheless, in parallel to its treaty-termination efforts, Indonesia has signed some new BITs since the termination and review phase starting in 2014, such as the BIT with the UAE, Singapore, and Switzerland. The BIT with Singapore signed in 2018 represented the first Indonesian BIT that reflects modern investment treaty-making trends. It aims to strike a better balance between investment protection and sovereign policy space, even if it is still based on the investment protection model. For instance, the treaty includes a provision reaffirming the right to regulate (art. 11), provisions on CSR (art. 12) and corruption (art. 13), and an exception clause enabling states to adopt measures relating to the conservation of exhaustible natural resources if such measures are not applied in a manner that constitutes discrimination or disguised restriction on investment (art. 39). However, the efficacy of such public policy exceptions in ISDS has proved sub-optimal (Heath, 2021). Similar provisions are present in the subsequent BITs concluded by Indonesia.

Interestingly, the UAE treaty carves out natural resources with respect to Indonesia, "unless otherwise specifically decided by decree of the Government of Indonesia (art. 2.3.a)."[12] The reach and efficacy of such a carve-out have not yet been tested in ISDS practice, but it appears that the contracting parties intended to exclude investment in natural resources from the ambit of the BIT. In addition, the BIT does not apply to public procurement, taxation, governmental subsidies and grants, and services supplied in the exercise of governmental authority (art. 2.6).

Indonesia is also a party to many FTAs that include investment chapters. Specifically, it is a party to 22 treaties with investment provisions apart from the already discussed BITs. The content of the agreements varies considerably. For instance, some of these treaties are merely framework agreements setting out a general framework aimed at creating a transparent, liberal, and facilitative investment regime (e.g., 2002 ASEAN–China Framework Agreement; 2003 ASEAN–India Framework Agreement; 2005 ASEAN–Korea Framework Agreement; 2017 Chile–Indonesia CEPA).[13] Apart from setting up parameters and processes of future cooperation, these agreements do not include operative obligations regarding investment. It is worth noting that, in some of these agreements, mining is viewed as an area of cooperation to be strengthened. On occasion, framework agreements were followed by specific investment agreements concluded at a later stage, thus materializing the cooperation in the form of a more detailed and stronger agreement (e.g., 2009 ASEAN–China Investment Agreement; 2009 ASEAN–Korea Investment Agreement).[14]

The already mentioned IPEF supply chain agreement can also be considered a framework agreement, which stipulates parameters of cooperation on investment matters with the specific intention of strengthening the resilience and connectivity of supply chains in critical

[12] A similar limitation is included with respect to the UAE as well.

[13] 2017 Chile–Indonesia CEPA can be considered an example of a framework agreement on future cooperation when it comes to investment as well (Chapter 9).

[14] Other FTAs concluded by Indonesia include neither framework provisions nor investment protection chapters. This is the case, for instance, of the EFTA States–Indonesia EPA (2018) and Indonesia–UAE CEPA (2022). However, these treaties coexist with standalone BITs between those states.

goods (e.g., art. 3–5), including CRMs. The commitments included in this agreement are of an aspirational and best-efforts nature, although they include significant institutional arrangements. For example, the IPEF Supply Chain Council (art. 6) considers areas in which "technical assistance and capacity building could increase the resilience, efficiency, productivity, sustainability, transparency, diversification, security, fairness, and inclusivity of IPEF supply chains" (Indo-Pacific Economic Framework for Prosperity Agreement Relating to Supply Chain Resilience, 2023).[15]

In contrast to the framework agreements, the already discussed Indonesia–Japan Economic Partnership (2007) is a comprehensive trade agreement that includes an investment chapter. In addition to typical investment protection standards and access to ISDS, it also contains a limited investment promotion and facilitation provision (art. 98). This agreement is applicable to Japanese investors operating in Indonesia, including those active in the CRM sectors and vice versa.

An important multilateral IIA to which Indonesia is a party is the ASEAN Comprehensive Agreement on Investment (2009), which is a regional investment treaty that covers the promotion, facilitation, liberalization, and protection of investments. Significantly, its liberalization provisions apply to quarrying and mining (art. 3.3.e), meaning that the sector is fully liberalized unless a country has made reservations. Indonesia made reservations applicable to mineral and coal mining (ASEAN, 2020). A similar investment liberalization approach to the mining sector is mirrored in some FTAs to which ASEAN is a party (e.g., art. 1.5.e of the 2014 ASEAN–India Investment Agreement). The inclusion of reservations allows Indonesia control over incoming investments in some CRM sectors to some extent (see Section 5.2.2). A detailed discussion of the scope and operation of Indonesia's liberalization schedules is beyond the scope of this paper.

Investment treaty provisions that are relevant to national industrialization efforts are provisions prohibiting the use of certain performance requirements, as the prohibited performance requirements might be the kind of local content measures that the critical mineral-producing country might be keen to adopt. Indonesia's BITs generally do not contain provisions prohibiting performance requirements. However, such provisions are present in various FTAs to which Indonesia is a party, such as the Regional Comprehensive Economic Partnership (RCEP) (art. 10.6), ASEAN Comprehensive Agreement on Investment (art. 7), Indonesia–Korea CEPA (art. 7.8), Indonesia–Japan EPA (art. 63), and Indonesia–Australia CEPA (art. 14.6). These prohibitions generally apply to covered investments in Indonesia. Some of these prohibitions are fairly wide-ranging, such as those related to the transfer of technology (Indonesia–Australia CEPA, art. 14.6.1.f) and R&D (Indonesia–Japan EPA, art. 63.1.h). At the same time, these provisions are sometimes excluded from ISDS, making their enforcement more cumbersome (e.g., the Indonesia–Australia CEPA; the Indonesia–Korea CEPA). Alternatively, Indonesia has made reservations for some of the performance requirements in its schedules (e.g., Indonesia RCEP Schedule for Investment and Indonesia–Australia CEPA, Annex I on Services and Investment, Indonesia). It is worth adding that probably the widest prohibition of performance requirements can be found in the draft negotiation text of the EU–

[15] The other two IPEF agreements (i.e., the Fair Economy Agreement and the Clean Energy Agreement) are signed but not yet in force.

Indonesia FTA (art. 2.6), but note that this is only an EU Negotiation Draft and therefore does not represent a final text or bilaterally negotiated draft.

Finally, regarding ESG-related provisions, some of Indonesia's FTA investment chapters contain general exceptions for public interest measures (e.g., ASEAN Comprehensive Agreement on Investment) and provisions confirming that general regulatory measures shall not constitute indirect expropriation (e.g., ASEAN–Australia and New Zealand FTA [2009], ASEAN–India Investment Agreement [2014], and ASEAN–Hong Kong, China Special Administrative Region Investment Agreement [2017]). The Australia–Indonesia CEPA (2019) and the Indonesia–Korea Republic CEPA (2020) can be considered the most progressive investment treaties adopted by Indonesia. These agreements explicitly refer to the promotion of regulatory objectives (art. 14.16) and include provisions on CSR. However, they still provide investment protection guarantees.

These kinds of ESG-related provisions broaden Indonesia's policy space slightly, including policy concerning CRMs. This is especially the case when ISDS is excluded from the treaty altogether, like in the Australia–Indonesia CEPA (2019). In contrast, the ASEAN–China Investment Agreement (2009) does not include any provisions on ESG. However, the RCEP investment chapter, which coexists with the latter agreement, contains an annex regarding the application of expropriation standards to regulatory measures (Annex 10B) and limited CSR provisions. In comparison with the investment chapters in Indonesian FTAs, Indonesia's BITs do not contain ESG-related provisions. The only exceptions are the three most recent BITs discussed above (i.e., BITs with Singapore, Switzerland, and UAE).

7.3.4 Contribution of MOUs

Indonesia has concluded several MOUs related to CRMs with key trade partners, such as the United States, Australia, the United Kingdom, and Korea. Most of the texts of these MOUs are currently not publicly available, making close analysis impossible. That being said, there is general agreement that more international economic cooperation can be an external driver of reform to achieve more responsible mining standards in Indonesia (Decarbonization for Development, 2024). We rely here on official statements that identify potential mutual benefits but do not set out how these broader objectives are to be operationalized. Currently, this secondary analysis suggests that MOUs with Indonesia focus on two main areas of cooperation.

First, MOUs do acknowledge downstream aspirations. For example, Indonesia has signed an MOU with the United States on the development of clean energy in the context of the Indonesia Just Energy Transition Partnership, establishing a working group on the electrification of Indonesia's economy. Some argue that Indonesia intends to use this cooperation to develop more downstream capacities (Nur, 2024). Similarly, cooperation with the Australian government aims to boost Indonesia's EV sector by cooperating on new processing and manufacturing methods, mapping supply chains, reducing Indonesian dependence on Chinese investment and resources, and fostering business-to-business links, especially in R&D (Interesse, 2023; Minister for Industry and Science of Australia, 2023). While the MOU focuses on the EV sector as a whole, critical mineral supply chains are a key component of the cooperation.

Second, MOUs often highlight soft cooperation methods for the exchange of information and technology or knowledge transfer. The MOU with Korea, for example, specifically focuses on the exchange of information and human resources in the critical minerals sector, including through the establishment of a joint research centre (Oh, 2022). Similarly, the MOUs signed with the United States specifically target "technical cooperation on enabling environments and regulatory frameworks to help increase the uptake of renewable energy resources, enhance grid resiliency and security, [and] improve technologies for responsible mining and minerals processing" (U.S. Embassy Jakarta, 2023).

The Indonesia–Iceland MOU on the Energy and Mineral Resources Cooperation (2007) did not include environmental provisions per se but did target cooperation on increasing the value added from minerals by utilizing geothermal power, which is linked directly to the carbon emission intensity of mineral processing in Indonesia that is currently mostly reliant on coal. Recently, Indonesia's Ministry of Energy and Mineral Resources and Iceland's Ministry of Environment, Energy and Climate signed another MOU (2024) that more explicitly points out the importance of "mutual benefit, equality and reciprocity" among its objectives. This MOU not only strongly expands the scope of activities that it is covering, including a strong focus on geothermal energy-related cooperation, green fuel, and deployment of clean technologies, but there is also a separate provision pointing out that the costs of joint activities would be "borne in a manner to be jointly decided by the Parties" (MOU between the Ministry of Energy and Mineral Resources of the Republic of Indonesia and the Ministry of Environment, Energy and Climate of Iceland on Renewable Energy Cooperation, 2024). The MOU also notes that matters of intellectual property born out of joint activities would also be addressed in separate agreements, thus opening the door for some technology transfer.

With respect to ESG conditions, many MOUs include only aspirational language. There is, however, an indication of Indonesia's possible interest in involvement in the Minerals Security Partnership. This partnership targets financial and diplomatic support for CRM projects that align with high environmental and social governance standards. It is U.S.-led, with other actors involved officially—not Indonesia, but it was part of the meetings in 2023 (World Economic Forum, 2024). This could prove to be a framework through which cooperation on and investment in more ESG-friendly mining and processing is possible. This potential is especially important given that the U.S. Department of Labor has added Indonesian nickel projects to its forced labour list, heightening the attention to Indonesia's sustainability standards (Business & Human Rights Resource Centre, 2024).

8.0 Conclusion

The global energy transition and ongoing digital transformations are increasing the demand for critical minerals. This creates both opportunities and challenges for mineral-rich developing and emerging economies. This study has examined the existing and evolving landscape of trade and investment agreements in the context of critical minerals. We focused on how these agreements reflect the changing balance between the interests of exporting and importing countries, including economic development, security of supply, and environmental and social objectives.

Our analysis was based on a comprehensive review of over 100 trade and investment agreements and MOUs and was supplemented by expert interviews. We found that critical minerals are becoming an increasingly central consideration in trade and investment policies, both for producing and importing countries. This trend is likely to continue as more nations aim to decarbonize their economies and diversify their supply chains. The rising importance of these minerals is specifically reflected in the growing number of MOUs being concluded in this area, as well as the inclusion of critical mineral-specific provisions in FTAs.

While both exporting and importing countries share the goal of responsible mining, their primary objectives often diverge, and this can lead to potential conflicts and difficult trade-offs. Mineral-exporting countries seek to maximize economic benefits, develop downstream processing capabilities, and diversify export destinations. In contrast, importing countries prioritize securing stable and affordable supplies of raw materials and often seek to minimize export restrictions to maximize access to resources.

FTAs are increasingly incorporating provisions specific to critical minerals. We particularly see this in agreements between mineral-producing countries and the EU. Such provisions often aim to secure stable supplies of critical minerals for importing countries. However, our analysis shows that developing and emerging economies can leverage their negotiating power to protect space for industrial policy objectives within these agreements.

On the investment side, IIAs are moving away from old-generation treaties that prioritized foreign investors' interests at the expense of host states' policy space. Newer IIAs aim to better balance investment protection with producers' policy space and are beginning to include ESG provisions, albeit often in non-binding language.

MOUs have emerged as a flexible and faster alternative to full-blown FTAs for establishing frameworks for cooperation on critical minerals. While they offer promise in addressing divergent goals and ESG concerns, their practical impact is difficult to assess due to the vague language used in the MOUs and a lack of robust implementation frameworks, or at least a lack of transparency about implementation.

The increased demand for critical minerals presents an opportunity for producing countries to leverage their resources for economic development. This can include investing in downstream processing capacities, supporting local communities, attracting investment, promoting innovation, improving ESG standards, or collecting government revenue. However, realizing

these opportunities often requires careful negotiation and may involve trade-offs with the interests of large and powerful importing blocks such as China, the United States, and the EU.

A key challenge lies in balancing the interests of producing countries to capture more value-added activities with the strategies of such large consuming countries to develop their own processing capabilities. This tension underscores the need for creative approaches in negotiating and implementing agreements that can deliver mutual benefits.

Moving forward, several recommendations emerge for both exporting and importing countries. Exporting countries can leverage critical minerals access in trade negotiations to secure concessions in other sectors and enter negotiations with a clear evaluation of critical minerals policies and desired industrial measures. Exporting countries could also consider reforming or terminating old-generation investment agreements to secure necessary policy space and prioritize embedding enforceable ESG standards in new investment agreements. Ensuring greater coherence between bilateral and multilateral investment agreements and developing detailed, actionable plans for MOU implementation are also crucial steps.

Importing countries should view agreements as opportunities to support value addition in exporting countries, which can indeed contribute to their own supply chain resilience. They should be prepared to reform old-generation investment agreements and recognize that strong protections do not necessarily guarantee higher investment or greater access to raw materials. Embedding responsible and sustainable business practices in investment agreements to secure long-term "social licence" to operate and investing resources in the practical implementation of MOU objectives are advised.

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