



FAIR FINANCE ASIA

EXTRACTION TO EQUITY: PATHWAYS TO RESPONSIBLE FINANCE AND TRADE IN ASIA'S CRITICAL MINERALS VALUE CHAINS

JULY 2026



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ABOUT THIS REPORT

This report considers data and documents published before December 2025.

This report is intended to provide data-driven evidence to advance the agenda by examining the trade and investment dynamics shaping ASEAN's critical minerals supply chains and identifying policy measures that could incentivize an alternative path beyond the current extractivist model.

For more information on this report, please contact info@fairfinanceasia.org.

ABOUT FAIR FINANCE ASIA

FFA is a regional network of Asian civil society organizations committed to ensuring that the business decisions and funding strategies of financial institutions in the region respect the social and environmental well-being of the communities in which they operate. Civil society coalitions from 10 countries are part of the FFA network: Bangladesh, Cambodia, India, Indonesia, Japan, Lao PDR, Pakistan, the Philippines, Thailand, and Vietnam. To learn more about FFA, visit: www.fairfinanceasia.org.

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Profundo aims to make a practical contribution to a sustainable world and social justice. Quality comes first, aiming at the needs of its clients. Thematically, Profundo focuses on commodity chains, the financial sector, and corporate social responsibility. More information on Profundo can be found at www.profundo.nl.

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Front cover page: Trucks loaded with nickel ore on their way to a smelter in Sulawesi, Indonesia. Photo by Garry Lotulung, a freelance photojournalist and documentary photographer based in Jakarta specializing in stories about the human condition, social change, and environmental crises.

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ABBREVIATIONS

AANZFTA	ASEAN-Australia-New Zealand Free Trade Agreement
ADB	Asian Development Bank
AEC	ASEAN Economic Community
AIIB	Asian Infrastructure Investment Bank
AMCAP	ASEAN Minerals Cooperation Action Plan
AMDV	ASEAN Minerals Development Vision
AMIS	ASEAN Minerals Information System
APSMD	ASEAN Principles for Sustainable Minerals Development
ASEAN	Association of Southeast Asian Nations
BHRRC	Business and Human Rights Resource Centre
BRI	Belt and Road Initiative
CAFTA	China-ASEAN Free Trade Agreement
CCO	Committee of Citizen Oversight
CEPA	Comprehensive Economic Partnership Agreement
CIA	Cumulative Impact Assessment
CM2CET	Critical Minerals to Clean Energy Transitions
CPTPP	Comprehensive and Progressive Agreement for Trans-Pacific Partnership
CRM	Critical Raw Material
CRMA	Critical Raw Materials Act
CSDDD	Corporate Sustainability Due Diligence Directive
CSO	Civil Society Organization

CSR	Corporate Social Responsibility
DFI	Development Finance Institution
DRC	Democratic Republic of the Congo
EHRDD	Environmental and Human Rights Due Diligence
EITI	Extractive Industries Transparency Initiative
ESG	Environmental, Social, and Governance
ESIA	Environmental and Social Impact Assessment
EU	European Union
EU-ID CEPA	EU-Indonesia Comprehensive Economic Partnership Agreement
EV	Electric Vehicle
FAO	Food and Agriculture Organization of the United Nations
FCDO	Foreign, Commonwealth & Development Office
FPIC	Free, Prior, and Informed Consent
FTE	Full-Time Equivalent
GRI	Global Reporting Initiative
HCS	High Carbon Stock
HCV	High Conservation Value
HPAL	High-Pressure Acid Leaching
HRDD	Human Rights Due Diligence
IEA	International Energy Agency
IFC	International Finance Corporation
IFC PS	International Finance Corporation Performance Standards
IGF	Intergovernmental Forum on Mining, Minerals, Metals, and Sustainable Development

IJEPA	Indonesia-Japan Economic Partnership Agreement
ILO	International Labour Organization
IUCN	International Union for Conservation of Nature
IWIP	Indonesia Weda Bay Industrial Park
JETP	Just Energy Transition Partnership
KIA	Kachin Independence Army
Kt	Kilotons (1,000 metric tons)
KPI	Key Performance Indicator
LFP	Lithium-Iron-Phosphate
LVC	Local Value Content
MDB	Multilateral Development Bank
MEHL	Myanmar Economic Holdings Limited
MEMR	Indonesian Ministry of Energy and Mineral Resources
MoU	Memorandum of Understanding
Mt	Million metric tons
NDC	Nationally Determined Contribution
OECD	Organisation for Economic Co-operation and Development
PH-KR FTA	Philippines-Korea Free Trade Agreement
PS	IFC Performance Standards
RCEP	Regional Comprehensive Economic Partnership
REE	Rare Earth Element
RKAB	Rencana Kerja dan Anggaran Biaya (Mining Work Plan and Budget)
ROO	Rules of Origin

RVC	Regional Value Content
SMM	Sumitomo Metal Mining
SOE	State-Owned Enterprise
TSC	Technical Screening Criteria
UK	United Kingdom
UN	United Nations
UNDRIP	United Nations Declaration on the Rights of Indigenous Peoples
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNGPs	United Nations Guiding Principles on Business and Human Rights
UNICRI	United Nations Interregional Crime and Justice Research Institute
US	United States
USD	United States Dollar
USTDA	United States Trade and Development Agency
VEC	Valued Environmental and Social Components
WTO	World Trade Organization

EXECUTIVE SUMMARY

“Critical” minerals is a concept largely defined by governments as materials essential to strategic economic sectors or national security that are difficult to substitute and vulnerable to supply disruptions. “Transition” minerals are a subset of critical minerals defined by their importance for low-carbon energy technologies. While energy use still accounts for a small share of demand for minerals such as copper and nickel, others, like lithium and rare earth elements (REEs), are expected to see a sharp rise in demand for technology, defense, and healthcare. At the same time, these minerals are being pushed onto political agendas by concerns over increased demand, price volatility, supply risks, and geopolitical tensions.

In this context, the Association of Southeast Asian Nations (ASEAN), which includes several mineral-rich countries, has become a strategic hub for critical minerals essential to a range of industrial sectors, from clean energy and electric vehicles (EVs) to defense and advanced manufacturing. ASEAN has articulated a Minerals Development Vision (AMDV) to signal its ambition to transform the region into a leading global destination for investment in responsible minerals, including critical minerals, by developing domestic processing and downstream industrial capacities.

Critical transition minerals in selected ASEAN countries

This research focuses on critical transition minerals in five resource-rich ASEAN member states: Cambodia, Indonesia, Myanmar, the Philippines, and Thailand. Eight minerals essential to the EV value chain (bauxite/alumina, cobalt, copper, graphite, lithium, manganese, nickel, and REE) will be examined, including their production, reserves, resource potential,

and destination regions and sectors. This assessment will help determine whether these ASEAN countries are capturing domestic benefits or mainly supplying global markets with raw materials, while also considering how changing battery chemistries may shift future mineral flows. All production and reserve figures are indicative due to uneven data availability across sources.

The ASEAN region has established itself as a strategic hub for minerals essential to the global energy transition. Indonesia holds a dominant global position, accounting for 59% of global nickel production and 42% of its reserves in 2024, while also being the world's second-largest producer of cobalt. The Philippines is another significant nickel producer, accounting for 8.9% and 3.7% of global production and reserves, respectively, and it also produces cobalt. Myanmar accounted for 14.8% of global REE production in 2023, and Thailand has recently emerged as a potential major player following the discovery of 14.8 million tons of lithium, which, if found commercially viable, could place it among the top five countries globally for the resource. Lastly, Cambodia's mineral landscape is characterized by a lack of detailed geological mapping and mineral exploration. Reportedly, the country holds reserves of bauxite, copper, and manganese, among other resources (see chapter 1 for more information).

Shifting from raw exports to domestic processing

Across the region, and in line with the AMDV, countries are pursuing downstreaming policies to capture more economic value from critical minerals by shifting from raw material exports to domestic processing and manufacturing. Indonesia has led this shift by imposing

export bans on unprocessed nickel, bauxite, and copper to force investment in domestic refining and battery manufacturing. This strategy has already attracted major projects, such as the Hyundai-LG battery cell plant. In early 2025, the Philippines announced an ore export ban similar to Indonesia's but suspended the decision in June 2025 due to high power costs and infrastructure constraints. Thailand is positioning itself as a regional EV manufacturing hub, aiming for 30% of vehicle production to be electric by 2030, relying on an import-dependent model for mineral processing.

Geopolitical rivalries and regional dependencies

China has maintained a decisive influence across ASEAN as its primary trading partner and a leading source of investment, driving industrial growth in Indonesia and serving as a foundational economic partner for Cambodia and Myanmar. In Cambodia, Chinese state-backed investment through the Belt and Road Initiative (BRI) has played a pivotal role in developing the country's mining infrastructure. Meanwhile, over 90% of Indonesia's nickel and cobalt matte exports are sent to China. The dependency is even more pronounced in Myanmar, where China acts as the sole trading partner for REE exports and provides the essential expertise and chemicals required for local extraction and basic processing.

In response, the United States has aggressively signed a network of partnerships with ASEAN countries, including Cambodia and Thailand, that complements its stronger ties to maritime partners like Indonesia and the Philippines. The European Union (EU) has also signed a partnership agreement with Indonesia.

For China, the EU, and the US, these minerals are not only vital for clean tech but are explicitly linked to national security and defense applications.

Social, environmental, and market challenges for Southeast Asia's critical minerals

Despite this rapid growth, the ASEAN region faces considerable governance and sustainability challenges that threaten the "green" narrative of the energy transition advanced by multilateral bodies and donor countries (see chapter 2). A research project by Sadan et al. labelled the unregulated REE mining zones in northern Myanmar as "Just Transition Sacrifice Zones" due to the severe pollution of soil and water and the industry's ties to armed conflict. There is also a significant carbon paradox in Indonesia, where the expansion of the "clean" nickel industry relies heavily on captive coal-fired power plants, although recent commitments have been made to develop large-scale solar and wind projects to mitigate this footprint.

Between 2010 and 2025, the Transition Mineral Tracker developed by the Business and Human Rights Resource Centre (BHRRC) identified 79 allegations in Indonesia and 10 allegations in the Philippines, affecting workers, local communities, Indigenous Peoples, and human rights defenders. Workers face unsafe conditions, exposure to chemicals, long hours, low pay, and restrictions on unionization, with women disproportionately affected in informal and low-tier roles.

Communities and Indigenous Peoples face land dispossession, ecosystem degradation, water contamination, and threats or attacks when defending their rights. Environmental harms include deforestation, high CO₂ emissions, pollution, soil erosion, and biodiversity loss, with Indonesia experiencing the largest forest losses from nickel and bauxite mining. In addition, local economic benefits remain limited and unevenly distributed.

Supply chains also face market and political risks, ranging from shifts in battery technology and increasingly unpredictable

trade, to civil war in Myanmar, and political instability in Thailand and Cambodia, all of which challenge the sustainable development of transition minerals and a just energy transition in ASEAN.

Growing trade agreements, missing safeguards

The assessment of key trade agreements and Memoranda of Understanding (MoUs) on critical minerals reveals significant inconsistencies between the sustainability rhetoric of governments and actual practice (see chapter 3). For Cambodia, Indonesia, the Philippines, and Thailand, key trade agreements and MoUs were reviewed. A critical proviso is that while trade agreements create binding rights and obligations, many of these instruments are MoUs, which are not legally binding and lack enforcement mechanisms. Where public information was available, these documents were assessed against four sustainability criteria considered essential for supporting a just transition and delivering tangible benefits to local workers and communities. The criteria included: 1) the presence of local benefits clauses, 2) provisions prioritizing domestic needs, 3) references to international sustainability standards, and 4) mechanisms for fair pricing aimed at ensuring equitable value sharing between extractive companies, resource-rich countries, and downstream users.

The research shows that international cooperation on critical minerals has intensified, as reflected in the growing number of trade agreements and MoUs, particularly since the start of US President Trump's second term. Indonesia has the most established agreements, reflecting its dominant global position in nickel and cobalt production.

Across the analyzed agreements for Cambodia, Indonesia, the Philippines, and

Thailand, several core elements of a just transition are consistently missing. While many cite the promotion of local jobs and skills transfer as goals, few require “local value content” for tariff benefits. Concrete measures such as local hiring quotas or contributions to community development funds are missing entirely. In addition, none of the documents prioritize domestic needs for the use of critical minerals.

Fair pricing mechanisms are also absent, save for a vague reference to “price floors” in the US-Thailand MoU. These tools are key to averting a “race to the bottom” in which producers slash environmental and labor standards amid price volatility, leaving resource-rich nations exposed to market manipulation.

While most agreements make general references to sustainability, they rarely include explicit commitments to implementing international sustainability standards. None include binding commitments to uphold human rights standards, such as the process of obtaining the free, prior, and informed consent (FPIC) of Indigenous Peoples.

The AMDV explicitly mentions implementation of the ASEAN Principles on Sustainable Minerals Development, stakeholder engagement, and community empowerment among key goals. However, it remains a non-binding “shared framework” that depends on national-level enforcement.

Recommendations for ASEAN member states, selected resource-rich countries, and regulators

To create incentives for an alternative way forward—beyond the current extractivist model—Fair Finance Asia (FFA) offers the following recommendations for the resource-rich countries covered in this

study, ASEAN member states, and financial regulators^a (see Chapter 4):

Overarching recommendation

1. Endorse and commit to implementing the UN Principles to Guide Critical Energy Transition Minerals Towards Equity and Justice.

Human rights due diligence

2. Establish and enforce mandatory environmental and human rights due diligence (EHRDD) requirements for companies and financial sector activities aligned with international sustainability standards, such as the United Nations Guiding Principles on Business and Human Rights (UNGPs) and the IFC Performance Standards on Environmental and Social Sustainability.
3. Enshrine the FPIC of Indigenous Peoples and local communities with customary rights in national law, including the “right to say no” and a clear process by which communities can withdraw their consent.
4. Ensure meaningful community engagement that is inclusive, transparent, and accountable.
5. Implement accessible, culturally sensitive, and effective grievance and redress mechanisms.
6. Guarantee a safe and enabling environment for environmental, human rights, and anti-corruption defenders, recognizing their essential role in ensuring accountability in the governance of natural resources.

Mandatory environmental and social impact assessments

7. Make environmental and social impact assessments (ESIAs) mandatory for mining permits and mining expansion projects.
8. Require cumulative impact assessments (CIAs) for mining permits and mining expansion projects in regions with multiple

mines or infrastructure developments, especially where vulnerable populations face cumulative air, water, or soil pollution, or other specific challenges.

9. Develop and publish guidance documents based on international good practices and standards and allocate financial resources to ensure these documents reach local communities, including documents translated into local languages.
10. Ensure that ESIA mandates meaningful, informed, and inclusive participation of all potentially affected individuals and communities throughout the entire project life cycle, including planning, implementation, and evaluation.
11. Actively monitor the implementation of ESIAs in cooperation with affected rights-holders and establish enforcement mechanisms.
12. Encourage financial institutions to check that mining companies conduct ESIAs as part of their environmental and social risk management processes.

Fiscal policies and benefit-sharing mechanisms

13. Adopt robust fiscal frameworks to capture fair value from critical minerals across the entire value chain.
14. Require mining companies operating within their territory to publicly report, country-by-country on an annual basis, on their revenues; profits before and after tax; number of employees (full-time equivalent, FTE); payments to governments (including corporate income tax, withholding taxes, royalties, dividends, and license and concession fees); and subsidies and other financial support received from governments (including tax exemptions, deferred payments, etc.).
15. Introduce benefit-sharing mechanisms, such as a turnover tax, requiring mining companies to reinvest a defined share of revenues locally in sectors and projects that serve the public good, or to contribute

^a The recommendations are not intended to be applied uniformly by all actors but should be read selectively, according to each stakeholder's role, responsibilities, and level of influence.

to a dedicated public fund whose expenditures are decided jointly with civil society representatives.

16. Allocate revenues transparently to priority areas, including but not limited to public infrastructure, healthcare, education and skills training, and environmental protection.
17. Explicitly define benefit-sharing provisions in trade agreements and MoUs.

Local value addition

18. Promote downstream industrial development (e.g., processing, manufacturing) and explore ASEAN regional or coordinated approaches, including joint public procurement or long-term offtake agreements, to strengthen negotiating positions and foster investment in regional critical minerals value chains.
19. Condition price-based support mechanisms with sustainability goals, ensuring that support mechanisms incentivize adherence to robust environmental and social standards and circularity.
20. Define a clear value-addition strategy for mineral development based on a national development plan, economic feasibility, market outlook, and rigorous cost-benefit analysis.
21. In MoUs and trade agreements, encourage technology transfer and skills development, ensuring that foreign partners contribute to building domestic capabilities in critical minerals value chains.
22. Link preferential terms or incentives to value addition, for example, tax breaks, reduced royalties, or market access conditional on local investment.

Transparency and accountability

23. Implement the Extractive Industries Transparency Initiative (EITI) standards and require mining companies to be compliant with EITI reporting requirements.

24. Require mining companies operating within their territory to publicly report, country-by-country on an annual basis, on their revenues; profits before and after tax; number of employees (FTE); payments to governments (including corporate income tax, withholding taxes, royalties, dividends, and license and concession fees); and subsidies and other financial support received from governments (including tax exemptions, deferred payments, etc.).
25. Establish and enforce mandatory disclosure of environmental and human rights due diligence for companies and the financial sector, aligned with international sustainability standards.
26. Regarding the implementation of FPIC of Indigenous Peoples and local communities with customary rights, mandate companies to disclose all informational materials used to obtain consent, as well as the consent document itself, so that communities can demonstrate in case of legal proceedings what they were and were not informed of.

Sustainable finance taxonomies

27. Develop or strengthen existing sustainable finance taxonomies to:
 - ◆ Move beyond voluntary guidance;
 - ◆ Incorporate robust social and environmental technical screening criteria (TSC);
 - ◆ Explicitly align with international human rights and labor standards;
 - ◆ Set credible, time-bound decarbonization pathways for mining and processing; and
 - ◆ Require traceability and public disclosure on the end use of critical minerals.

INTRODUCTION

The accelerating impacts of climate change create an urgent need to shift energy systems toward renewable and low-carbon sources to reduce emissions, maintain climate stability, and limit damage to human health, ecosystems, and societies. However, clean energy technologies, such as wind turbines, solar panels, electric vehicles (EVs), and battery storage, require a comparatively high volume of minerals. Referred to as “transition minerals”, they form a subset of the broader group of “critical minerals”.

From 2021 to 2024, the global production of critical energy transition minerals increased significantly, including cobalt (+15%), graphite (+8.5%), lithium (+34%), nickel (+11%), and rare earth elements (REEs) (+10%).^b Demand for these minerals is projected to continue rising substantially, influenced by different policy scenarios.¹ Additionally, factors such as geopolitical instability, militarization, rapid expansion of data centers, artificial intelligence (AI), and other popular technologies are accelerating demand.

Although these minerals are essential for the energy transition, their extraction and processing are linked to environmental degradation, human rights violations, and unequal economic structures, particularly in resource-rich but marginalized regions of the Global South, where women often face disproportionate social and health impacts. At the same time, countries most vulnerable to climate change and least responsible for historical emissions often see their needs and opportunities for a just transition overlooked. Many Asian countries, including Indonesia, are

increasingly reliant on highly carbon-intensive resource extraction and activities.²

Against this backdrop, Fair Finance Asia (FFA), a network of over 90 civil society organizations (CSOs) in Asia working to ensure that financial institutions operating in Asia are transparent and accountable to environmental, social, and governance (ESG) criteria in their business activities and investment decisions, has published several research and briefing papers on the just energy transition and transition minerals. A 2024 report, produced in collaboration with Profundo, revealed that banks based in Japan and across the Association of Southeast Asian Nations (ASEAN) are financing Asian, European, and US EV manufacturers that have indirect supply chain links to three nickel mining sites facing allegations from surrounding communities.^c

Building on this body of work, the present research seeks to advance the agenda by examining the trade and investment dynamics shaping ASEAN's critical minerals supply chains and identifying policy measures that could incentivize an alternative path beyond the current extractivist model.

Chapter 1 provides an overview of five mineral-rich countries in ASEAN, including the transition minerals they produce and their significance in terms of reserves and production volumes. Chapter 2 offers a brief overview of the environmental and social issues frequently associated with mineral extraction in Southeast Asia. To analyze the international trade

^b Representing a compound annual growth rate (CAGR), which is the total cumulative growth over the period.

^c See: Fair Finance Asia (2024, December), *Unearthing the hidden costs: Social and environmental considerations in Asia's transition minerals mining and supply chains*.

dynamics around critical minerals, chapter 3 examines key trade agreements and Memoranda of Understanding (MoUs) on critical minerals involving these resource-rich countries, as well as the extent to which these agreements include

sustainability safeguards. Finally, chapter 4 discusses potential measures that policymakers in resource-rich countries and ASEAN could adopt to foster a just transition that incentivizes local value addition and benefit sharing.

What are “critical” minerals?

The concept of so-called “critical” minerals is largely defined by governments and refers to minerals that are considered economically or strategically essential, difficult to substitute, and whose absence would have significant consequences for key sectors or national security, while their supply chains are vulnerable to disruption.^{d,3} In this context, supply risk typically arises from a lack of domestic reserves, insufficient availability from strategic allies, or limited control over supply chains needed to secure timely access.⁴

As a subset of critical minerals, the importance of “transition” minerals is based on their role in enabling the global energy transition to low-carbon technologies.⁵ In some cases, energy applications still account for only a small share of total demand, as with manganese and nickel, although these shares are expected to grow.⁶ Materials such as lithium and rare earth elements (REEs), which have historically been used in smaller quantities, are expected to experience strong relative growth in demand in the coming years.⁷ Other sectors with expanding demand for critical minerals include information technology, defense, and healthcare.⁸

Growing demand, price volatility, supply chain disruptions, and geopolitical tensions have put these minerals on the political agendas of countries worldwide, spurring new partnership agreements (see chapter 3) and the accelerated approval of mining permits.⁹ At the same time, the term “critical minerals” is politically charged and has been criticized for legitimizing intensified extractivism in the Global South while neglecting social and environmental concerns.¹⁰ This study nonetheless uses the term in line with its widespread application in academic literature, trade agreements, and intergovernmental MoUs.

^d The EU Commission lists 34 minerals as critical, while the US Department of Energy (DoE) has a broader list of 50 minerals, including those considered critical for defense purposes. The selection by the International Energy Agency (IEA) is most relevant for this research, as it focuses on the energy transition minerals pertinent to renewable energy and e-mobility.



1

Critical minerals in selected ASEAN countries

The ASEAN region has emerged as a strategic hub for critical energy transition minerals, anchored by Indonesia's dominance in nickel and cobalt production, and the significant REE reserves in Myanmar. To capture greater value from these resources, several nations are pursuing "downstreaming" strategies, ranging from Indonesia's raw ore export bans to Thailand's development as a regional EV manufacturing hub, aiming to shift from being merely raw material suppliers to integrated value chain participants. Despite this growth, the sector faces substantial risks, including heavy reliance on Chinese investments and refining capacity, severe environmental and social impacts in mining areas, and the potential for technological shifts to nickel-free EV battery chemistries that could disrupt current industrial investments.

1.1. Overview

This research has focused on a group of five resource-rich ASEAN countries (Cambodia, Indonesia, Myanmar, the Philippines, and Thailand) and eight minerals of high importance to the EV value chain (bauxite/alumina, cobalt, copper, graphite, lithium, manganese, nickel, and REEs). The following sections provide brief profiles of the countries in relation to the production of these minerals and the future exploitation potential of their reserves. The destination of the mined resources is of interest, both geographically and in terms of the economic sectors and markets they serve. These findings allow conclusions about whether the producing countries stand to benefit from their natural resources themselves or predominantly serve as suppliers to world markets. Finally, the question of potential market changes resulting from shifts in battery chemistries

and subsequent changes in mineral flows will be considered, where relevant.

Data on mineral production and reserves are collected from multiple sources due to differing coverage. Volumes reported can vary between sources, especially for countries with limited available data such as Myanmar, and should therefore be treated as indicative rather than precise data. Where data is available, volumes refer to reported reserves. However, in some cases, only estimates exist.^e

1.2. Cambodia

The mineral landscape in Cambodia is characterized by a lack of detailed geological mapping and very limited mineral exploration. Resource development was severely affected by decades of conflict and instability, and long dominated by small-scale, informal mining activities.

^e Whereby "resources" refer to mineral commodities for which economic extraction is evaluated as feasible, either today or sometime in the future, while "reserves" refer to the part of the materials that can be economically and legally extracted today. Consequently, resource volumes are usually higher than reserve volumes.

International interest emerged in the early 2000s, driven by legal reforms and the introduction of licensing frameworks.¹¹

According to the country's Ministry of Mines and Energy, mineral deposits and occurrences include antimony, chromium, gold, iron, **manganese**, molybdenum,

tungsten, aluminum, **copper**, lead, zinc, and tin.¹² With considerable untapped potential, the mining sector's role in the country's economy is expected to expand in the coming years as the government seeks to diversify income beyond agriculture, garments, and tourism.¹³

Table 1 Critical mineral production, global shares, and reserves in Cambodia (2023–2024)

Bauxite	Cobalt	Copper	Graphite	Lithium	Manganese	Nickel	REEs
Production							
-	-	n/a	-	-	0.2% 40 Kt	-	-
Reserves (est.)							
1.2% 350,000 Kt	-	n/a	-	-	<0.1% 120 Kt	-	-

Note: n/a = not available/not quantified

Source: U.S. Geological Survey (USGS), "Commodity statistics and information"; Medina, A.F. (2025, June 27), "Mining and natural resources in Cambodia: Investment potential and sector outlook", ASEAN Briefing, online: <https://www.aseanbriefing.com/news/mining-and-natural-resources-in-cambodia-investment-potential-and-sector-outlook/>, viewed in November 2025; UN Comtrade (2025), "Trade data", online: <https://comtradeplus.un.org/>, viewed in November 2025.

Gold and non-metallic minerals are the most notable mining activities. The exploitation of modest **manganese** resources has advanced through partnerships and exploration licenses granted to concessionaires.¹⁴ Exports reached around 40 kilotons (Kt) in 2024, the first year for which exports were reported, and all were sent to China.¹⁵ Moreover, large proven **bauxite** reserves have reportedly attracted a proposed operation with an annual output of 16 million metric tons (Mt).¹⁶

Production and further exploration of **copper** are also ongoing, but mining data is lacking. Exports under trade codes for copper articles, excluding waste and scrap, totaled only about 20 Kt in 2024, primarily destined for China.¹⁷ Cambodia's copper segment is viewed as one of China's destinations for outsourcing to peripheral regions, a strategy driven by the need to ensure sufficient mineral supplies while reducing pollution from

mining at home, as well as rising minimum wages and an appreciated currency. This interest is reflected in sizable Chinese investments in Cambodia's mining sector and infrastructure development.¹⁸

China plays a decisive role in the country's economy, due to a decade of state-backed investment and aid for energy and transport infrastructure, including substantial loans.¹⁹ Much of this involvement is framed within the narrative of the Belt and Road Initiative (BRI), which is not solely for commercial interests, but also has political and strategic agendas. In Cambodia, China has become the country's largest investor and main political ally during the last decade. This is illustrated by the high level of investment, aid and cooperation packages, and commitments to develop large infrastructure projects, including power plants, roads, and other major public works.²⁰

However, Chinese investment and aid in Cambodia have also provided substantial support to the country's export-oriented economy, with exports to Europe and the US remaining dominant.²¹ At the same time, these projects have often been alleged to have substantial environmental and social impacts due to poor planning and execution. This pertains to issues including minimal consultation or assessment of the human and environmental impacts, and China's "ask-no-questions" approach to aid and investment.²²

Cambodia has a National Policy on Mineral Resources that emphasizes sustainable extraction, the promotion of foreign and domestic investment, revenue generation, and environmental safeguards. A specific downstream strategy is not published, while the country's export policy states that exports of minerals are allowed when they receive a positive assessment of economic benefits, including consideration of benefits from domestic processing.²³ At the same time, Cambodia is leveraging Chinese and other foreign investment to build the necessary infrastructure for the development of the mining sector.²⁴

Transition mineral mining in Cambodia remains a niche activity, with no processing facilities linked to the EV sector in the country. Although the Cambodian mining sector faces barriers such as a lack of energy and transportation infrastructure, the country has, according to market research, the potential to become a mid-tier mining player. This is due to its largely untapped reserves and competitive advantage over neighboring countries,

greenfield potential for exploration and development, as well as the possibility of 100% foreign ownership, which the country permits as part of its foreign investment incentives.²⁵

1.3. Indonesia

Indonesia positions itself as a global leader in **nickel**, both in reserves and mine production, accounting for around 42% and 59%, respectively, in 2024 (Table 2). While the Democratic Republic of the Congo (DRC) remains the largest miner and producer of **cobalt**, Indonesia is the second-largest source globally, accounting for 10% of production and 5.8% of reserves. In Indonesia, cobalt is a low-purity byproduct of laterite nickel processing, unlike the higher purity cobalt produced in the DRC. This requires more intensive and costly refining methods, such as high-pressure acid leaching (HPAL), to reach battery-grade quality. The expansion of Indonesia's nickel processing capacity has directly contributed to its rise as a major cobalt producer.²⁶

The country also has considerable sources of **bauxite** and **copper**, accounting for around 7.1% and 9.7%, and 4.8% and 2.1% of global production and reserves, respectively (Table 2).

Although Indonesia is not listed among the top countries in **REE** reserves, it is mentioned as a source of monazite.²⁷ Monazite is the primary source of thorium and is recovered because of its high REE content. This suggests Indonesia possesses REE resources, even though its quantifiable reserves are not officially reported.

Table 2 Critical mineral production, global shares, and reserves in Indonesia (2024)							
Bauxite	Cobalt	Copper	Graphite	Lithium	Manganese	Nickel	REEs
Production							
7.1% 32 Kt	10% 28 Kt	4.8% 1,100 Kt	-	n/a	-	59% 2,200 Kt	n/a
Reserves (est.)							
9.7% 2,800 Kt	5.8% 640 Kt	2.1% 21,000 Kt	n/a	n/a	-	42% 55,000 Kt	n/a

Note: n/a = not available/not quantified

Source: USGS (2025), Mineral Commodity Summaries 2025.

Following the implementation of the government's 2020 export ban on unprocessed nickel ore, Indonesia emerged as the second-largest nickel user, with a rapidly growing downstream sector. The goal of the ban is to promote domestic value addition by encouraging investment in refining and downstream industries, such as stainless steel and battery manufacturing.²⁸ This rapid growth led to an oversupply of (semi-)processed nickel in the global market, resulting in a global price drop and forcing some miners outside Indonesia to shut down in 2024.²⁹ In June 2023, the government implemented an export ban on bauxite, and a similar ban on copper took effect in January 2025.³⁰ It is likely that bans on the export of other raw materials will be imposed in the near and medium term.³¹

Recently, the country has increased its efforts to exert stricter control over its extraction sector, including stricter permit enforcement. Starting in January 2026, Indonesia's Rencana Kerja dan Anggaran Biaya (RKAB), or Mining Work Plan and Budget, will adopt an annual approval process. This aims to enhance oversight of raw material supplies by the Indonesian Ministry of Energy and Mineral Resources (MEMR), stabilize coal and nickel ore prices, and increase state revenue. The RKAB issues operating permits and sets mining quotas, among other functions.³² Indonesia further plans to raise nickel mining royalties from 10% to a sliding

scale of 14% to 19% based on market prices to boost revenue. These royalties are used to fund state expenses and aim to favor downstream processing by applying higher rates to unprocessed ore than to refined products.³³ Additionally, the government seized part of Weda Bay, one of the country's largest nickel mining and processing industrial parks, in September 2025, due to the absence of forestry permits. Although the seized land serves as a rock quarry for construction materials and does not significantly affect operations, this signals government efforts to crack down on illegal exploitation.³⁴ The government also suspended 190 mining permits nationwide as part of this tighter control.³⁵

China is Indonesia's largest trading partner for critical minerals. In 2024, China accounted for approximately 93% of Indonesia's exports of nickel mattes, 94% of cobalt mattes, 50% of unwrought (refined) aluminum, and 26% of unwrought (refined) copper.³⁶ Other important trading partners of Indonesia for these minerals include India, Japan, Malaysia, Russia, Singapore, Thailand, and Vietnam.

The Indonesian government is actively striving for the country to become one of the top producers of EVs.³⁷ It continues the previous President Jokowi's downstreaming policies, while increasing efforts to develop domestic EV battery and vehicle manufacturing

capacities. Planned measures include streamlining permits, expanding fiscal incentives, and establishing industrial parks focused on EV supply chains, to create skilled employment and facilitate technology transfer.³⁸ At the same time, the government is pursuing a diverse geopolitical strategy by reducing dependence on China through increased cooperation with European, Japanese, South Korean, and US companies.³⁹

A landmark development was the opening of the Hyundai-LG Energy Solution (both South Korean) battery cell plant in July 2024, producing 10 GWh annually and supplying Indonesia-assembled Hyundai and Kia EVs. Additional large-scale projects are underway, including a \$6 billion nickel-to-battery investment led by China's Contemporary Amperex Technology Co. (CATL), the world's largest EV battery manufacturer, and several HPAL facilities producing battery-grade nickel and cobalt sulphate. By mid-2025, nine nickel-to-battery facilities in Indonesia were either operational or in development, with plans to expand into precursor, cathode, and comprehensive battery pack manufacturing.⁴⁰

EV manufacturing is expanding in parallel. Since 2022, five automakers have begun EV production in Indonesia, led by Hyundai (South Korea), followed by Chinese firms such as Chery, DFSK, GAC Aion, and Wuling, as well as Vietnam's VinFast. Chinese BYD has committed to opening a major plant by 2026. Japanese automakers are also pivoting from the production and sales of internal combustion engine (ICE) vehicles to EVs, with Honda, Mitsubishi, and Toyota planning or launching local EV and hybrid production in Indonesia. Together, these developments position Indonesia as a growing regional hub for EV and battery manufacturing.⁴¹

While Indonesia's EV ecosystem is progressing and domestic EV sales are growing, it faces strong regional

competition for EV investments from India, Thailand, and Vietnam. The country lags in charging infrastructure development and has a low EV market share of 5%, partly due to relatively high costs compared to conventional cars.⁴²

Additionally, Indonesia's emphasis on nickel could face medium-term challenges as global markets shift to nickel-free chemistries such as lithium-iron-phosphate (LFP) and emerging sodium-ion batteries, which reduce demand for nickel and cobalt in mass market EVs. Although Indonesia has limited lithium resources, it strives to stay competitive in LFP production by promoting investments in cell manufacturing facilities and improving its battery material recycling and processing infrastructure.⁴³

Indonesia's expansion of EV manufacturing relies on intensive resource extraction, which carries significant environmental and social risks. Protests in areas such as Halmahera and Sulawesi underscore concerns about the impacts of nickel mining and processing.⁴⁴ To safeguard its reputation and ensure long-term sustainability, Indonesia must align its EV strategy with stronger measures for sustainability, including reforestation, responsible mining practices, and more robust ESG standards. Improving these measures would also boost the attractiveness of Indonesian EV batteries in markets that value environmental and social performance.

1.4. Myanmar

Myanmar produces several transition minerals, including **copper, manganese, nickel**, and **REEs** (Table 3). REEs are particularly important in the local context, given the country's significant role in the global supply of these minerals and their essential use in permanent magnets for various applications, including EVs and wind turbines. However, Myanmar's energy and mineral potential face substantial risks

from political instability, concerns over human rights breaches, and the absence of robust ESG frameworks.⁴⁵

Due to the lack of transparent geological survey data and consistent information on mineral reserves, assessment of Myanmar's

potential future role in transition mineral supply chains is hindered. A 2017 International Finance Corporation (IFC) report gives some indications of potential mineral reserves; however, these remain speculative.⁴⁶

Table 3 Critical mineral production, global shares, and reserves in Myanmar (2023–24)

Bauxite	Cobalt	Copper	Graphite	Lithium	Manganese	Nickel	REEs
Production							
-	-	0.0% 2.2 Kt	-	-	1.2% 234 Kt	0.2% 8 Kt	14.8% 57 Kt
Reserves (est.)							
-	-	1.6% 15,830 Kt	-	-	0.5% 9,000 Kt	<1% 1,340 Kt	n/a n/a

Note: Reserve estimates in italics should be treated as rough approximates due to limited data availability for Myanmar; n/a = not available/not quantified

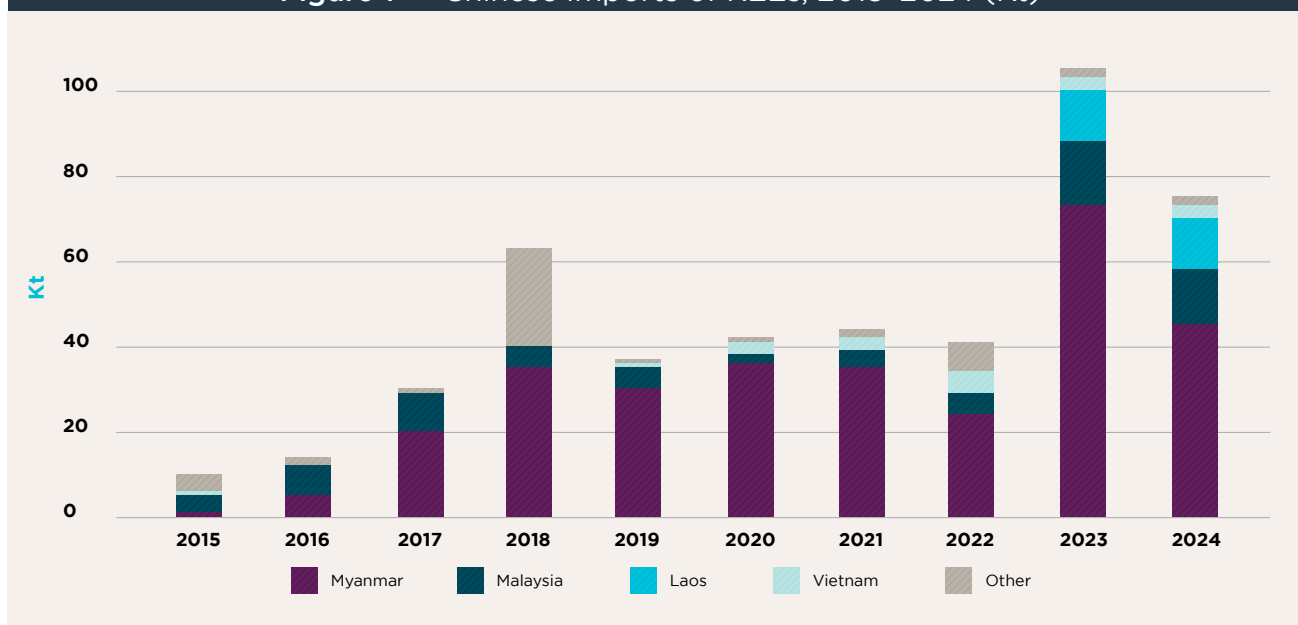
Source: USGS, "Commodity statistics and information"; Idoine, N.E., E.R. Raycraft, S.F. Hobbs et al. (2025), *World Mineral Production 2019 to 2023*, British Geological Society (BGS); *World Mining Data (2025)*, *Production of Mineral Raw Materials of individual Countries by Minerals* [Excel]; International Finance Corporation (IFC) (2017), *Baseline Assessment Report – Economic Development and Land Use: Strategic Environmental Assessment of the Hydropower Sector*, pp. 51–52.

Since the 2021 military coup, **REE** mining has rapidly expanded in Myanmar's Kachin State, located at the border with China. During these years, the number of mining sites reportedly doubled to 370 by early 2025.⁴⁷ In October 2024, the Kachin Independence Army (KIA) gained control of key REE mines near the Chinese border, which are mostly unregulated. The KIA is directly managing the lucrative exports and imposing export taxes.⁴⁸ However, while mines are operated by various groups, Chinese expertise for extraction is required, and Chinese companies are sending chemicals to Myanmar for use in the leaching and basic processing of mineral ores.⁴⁹

The largely unregulated mining activities in Kachin State have been linked to significant impacts on forests, soil, rivers, human health, and the well-being of women,⁵⁰ with pollution extending into neighboring Thailand.⁵¹ A research project by Sadan et al. referred to the northern borderlands of Myanmar as a "Just Transition Sacrifice Zone".⁵²

While REE mining, with its harmful social and environmental impacts in the surrounding areas, is outsourced, China controls the refining process. Over the years, China has imposed stronger environmental standards on domestic REE mining sites. To reinforce its dominance while addressing internal environmental costs, China employs a strategy of importing raw materials to feed its vast refining infrastructure and leveraging its near monopoly of the complex separation and refining procedures in REE processing.⁵³ Myanmar has been the primary supplier of REEs to China since 2017, with officially reported traded volumes experiencing a brief dip in 2022 but increasing significantly thereafter (Figure 1). The value of these flows reached USD 1.4 billion in 2023 and USD 808 million in 2024. In turn, trade data suggests that China is the only trading partner for Myanmar's REEs.⁵⁴

Figure 1 Chinese imports of REEs, 2015–2024 (Kt)



Note: Official trade reports may not capture all cross-border trade between Myanmar and China.

Source: UN Comtrade (n.d.), "Trade data – 2805 and 2846", online: <https://comtradeplus.un.org/>, viewed in November 2025.

China is also the destination for almost all of Myanmar's **manganese** ore exports. However, these supplies accounted for only about 2% of China's total imports under this trade code in 2024.⁵⁵ Manganese production has seen little impact from the civil unrest in recent years.⁵⁶

Myanmar is considered to have strong growth potential in **copper** production owing to its copper deposits. However, unlike REEs and manganese, the country's copper production has decreased drastically since the coup, from around 200 Kt in 2020 to 100 Kt in 2021 and to just 2 Kt in 2023.⁵⁷ At the Letpadaung Copper Mine, one of the large mines operated by a partnership between Wanbao Mining (a subsidiary of Chinese state-owned Norinco) and Myanmar Economic Holdings Limited (MEHL), local protests, construction delays, and environmental concerns have already impacted operations since its launch in 2010. Since 2021, worker strikes and broader political instability have further disrupted production.⁵⁸ It is unlikely that production at major mining sites will recover in the short term⁵⁹ due to ongoing

civil conflict in the country and shifting control of resource-rich regions, which partly came under the influence of ethnic armed groups.⁶⁰

ASEAN's critical mineral strategy envisions potential for beneficiation through integrated value chains, industrial upgrading, and green job creation in the region, while promoting environmental, social, and economic sustainability.⁶¹ However, current conditions in Myanmar leave it primarily an unregulated supplier of transition minerals to global renewable energy markets rather than a country benefiting from its natural resources. China dominates Myanmar's REE exports. Amid international sanctions and isolation following the 2021 military coup in Myanmar, China is allegedly taking advantage of the deteriorating situation in the country by buying at discounted prices largely from local armed organizations without any benefits being shared with the local populations.⁶² As such, this is not a classic case of a "debt trap", but it does illustrate exploitative practices by major powers. Despite an ambitious plan to increase renewable energy generation

not only from hydropower but also solar and wind,⁶³ Myanmar's energy and mineral developments remain heavily tied to armed actors, opaque companies, and foreign demand for its minerals, with little existing framework for domestic benefit sharing, benefits for local communities, or clean energy innovation using those resources.⁶⁴

1.5. The Philippines

The Philippines is a significant **nickel** producer, accounting for 8.9% and 3.7% of global production and reserves, respectively (Table 4). The country is also listed as a source of cobalt. Like Indonesia, **cobalt** is produced as a byproduct of nickel extraction. Approximately 99% of

nickel-containing exports^f consists of nickel ores, with the primary export markets being China and Indonesia.⁶⁵ According to various sources, the country also holds reserves of **bauxite, copper, manganese, and REEs**.⁶⁶

Following Indonesia's example, the Philippines announced a ban on ore exports as part of a new fiscal policy in early 2025; however, this ban was removed in June 2025. The new regulation focuses on revenue collection, transparency, and regulatory clarity, while suspending politically and economically sensitive decisions on ore export restrictions and domestic processing.⁶⁷ High power costs, infrastructure constraints, and market downturns are cited as reasons for not implementing the ban.

Table 4 Critical mineral production, global shares, and reserves in the Philippines (2024)

Bauxite	Cobalt	Copper	Graphite	Lithium	Manganese	Nickel	REEs
Production							
-	1.3% 3.8 Kt	-	-	-	-	8.9% 330 Kt	11 Kt*
Reserves (est.)							
-	2.4% 260 Kt	-	n/a	n/a	-	3.7% 4,800 Kt	n/a

Note: * In 2024, the Taganito HPAL nickel commercial plant in the Philippines recovered about 11,000 tons of scandium oxalate; n/a = not available/not quantified.

Source: USGS, Mineral Commodity Summaries 2025.

Nickel mines in the Philippines are partially foreign owned, with a 40% equity cap (60% should be domestic), with Sumitomo Metal Mining (SMM, Japan) and Nickel Asia Corporation (Philippines) holding significant stakes. Separately, SMM holds a substantial stake in Nickel Asia (about 26%).⁶⁸ Midstream processing facilities are emerging in the Philippines, but remain limited, relying on plants such as Coral Bay Nickel Corporation, owned by SMM (Japan) and Taganito HPAL, owned by

SMM (75%), Mitsui (15%), and Nickel Asia Corporation (10%), which process laterite ore into mixed sulfides with a nickel content of 55–60%.⁶⁹ These intermediates are then exported, mainly to Japan, for conversion into battery-grade nickel sulfate or nickel metal, allowing other countries, particularly China, Indonesia, and Japan, to capture most of the added value.⁷⁰ Cobalt, produced domestically as a byproduct of nickel mining, faces the same constraint: the Philippines lacks facilities to

^f HS codes 2604 (Nickel ores and concentrates) and 75 (Nickel and articles thereof).

refine the ore into battery-grade materials. As a result, the country cannot fully benefit from growing demand for EVs and energy-storage batteries.⁷¹

Regarding battery production, President Marcos inaugurated the Philippines' first LFP battery manufacturing facility at Filinvest Innovation Park in New Clark City, Tarlac, in 2024.⁷² The facility is owned by the Australian-Chinese joint venture StB Giga Factory. Additionally, in November 2024, the president announced that construction had begun on a major solar and battery storage plant.⁷³

The Philippine government has created a strong policy framework to accelerate EV adoption, led by the 2022 Electric Vehicle Industry Development Act and the Comprehensive Roadmap for the EV Industry, which outlines targets for charging, manufacturing, skills development, and research and development (R&D). In addition, the Green Energy Auction Program supports the country's renewable energy goals. Released in March 2025, it aims for 1,100 MW of new solar capacity combined with energy storage. These policies have spurred demand in the domestic EV and battery material markets. Furthermore, broader tariff exemptions aim to incentivize domestic assembly and manufacturing.⁷⁴ However, the country faces considerable challenges, including significant infrastructure gaps in EV charging and energy storage, which limit the growth of its EV and battery materials markets.⁷⁵ Additionally, the Philippines' emphasis on nickel may face medium-term challenges as global markets shift to nickel-free chemistries such as LFP and

emerging sodium-ion batteries, which reduce the need for nickel and cobalt in mainstream EVs.

According to market analyses, the Philippines should consider assuming the role of a battery material supplier and centre for commercial and light-duty EV assembly within the regional EV value chain, complementing Indonesia's battery hub and Thailand's manufacturing base.⁷⁶ Moreover, the country could leverage its existing lead-acid battery recycling infrastructure to develop a market for EV battery recycling.⁷⁷

However, the extraction of minerals needed for renewable technologies continues to reproduce long-standing patterns of exploitation and causes environmental and social damage in the Philippines.⁷⁸ These issues highlight that technological solutions alone cannot resolve the climate crisis. Without reforms in governance, corporate oversight, and the fair distribution of mining benefits, the global pursuit of critical minerals risks exacerbating the very injustices it seeks to address.⁷⁹

1.6. Thailand

Thailand has various mineral resources, including tin, lead, zinc, iron, **bauxite**, **manganese**, **copper**, tungsten, coltan, and **REEs**. The government estimates that around 19% of the country's total area has "high potential" for mineral exploitation; however, detailed data on extractable reserves are largely lacking.⁸⁰ Mining production so far remains at low levels (Table 5).⁸¹

Table 5 Critical mineral production, global shares, and reserves in Thailand (2023–24)

Bauxite	Cobalt	Copper	Graphite	Lithium	Manganese	Nickel	REEs
Production							
-	-	-	-	-	3.1% 0.6 Kt	-	3.3% 13 Kt*
Reserves (est.)							
n/a	-	n/a	-	n/a 14,800 Kt	n/a	-	n/a 4.5 Kt**

* Thailand imports REE concentrates and intermediates for processing.

** REEs in tin and heavy mineral operations are not counted in REE reserves; n/a = not available/not quantified.

Source: USGS, “Commodity statistics and information”; Statistics Group (2024, December), *Mineral Statistics of Thailand 2019 – 2023*, Department of Primary Industry and Mines, pp. 48, 79–80; AFP (2024, January 19), “Thailand discovers nearly 15 million tons of lithium”, online: <https://energy.economictimes.indiatimes.com/news/power/thailand-discovers-nearly-15-million-tonnes-of-lithium/106987934>, viewed in November 2025.

The extent of the country's **manganese** reserves remains unclear. Thailand had one active manganese mine in 2023, compared to three in 2022 and one in 2021. Reported manganese production was 0.6 Kt in 2023, down from 4.8 Kt in 2019 and 1.4 Kt in 2020. During the same period, imports of manganese ore and exports of metallurgical-grade manganese also decreased significantly: from 135 Kt and 144 Kt in 2019 to 21 Kt and 17 Kt in 2023.⁸² Possible reasons include the implementation of the Mineral Act, 2560 B.E. (2017) and limited permissions for mining operations;⁸³ the comparatively low grade and small size of mining activities; and a shift to other, more promising mineral value chains.

In early 2024, the Thai government announced the discovery of 14.8 Mt of **lithium** deposits. This volume would place Thailand among the top five countries for lithium resources. However, it remains unclear how much is viable for commercial exploitation.⁸⁴ According to one source, “[...] it is not a bad time to be finding lithium in Thailand, where the cost of extraction is expected to be cheap and the execution times fast when compared with western jurisdictions.”⁸⁵

Thailand's own **REE** reserves are minor and not economically viable. A survey by the Department of Mineral Resources has so far identified 4.5 Kt.⁸⁶ Some REEs are recovered as accessory minerals from existing tin and heavy mineral operations, which do not count as primary REE reserves.⁸⁷ However, while Thailand lacks large-scale REE mines, it has emerged as a key player in the global REE supply chain. Production of 13 Kt of rare earth oxide equivalents in 2024—up from 3.6 Kt in 2023—made Thailand the sixth-largest REE producer globally. This position is attributed to an import-dependent model, in which Thailand imports rare earth concentrates and chemical intermediates for processing and value addition, in recent years from China, Malaysia, Vietnam, and others.⁸⁸

Australian mining company Flagship Minerals (formerly Pan Asia Metals (PAM)) is seeking two **lithium** opportunities to serve the EV industry, with plans to commence lithium chemical production in 2026 for use in LFP batteries, which are gaining in popularity. Another company has been granted special prospecting licenses to investigate lithium mining. Thailand aims to convert about 30% of its annual vehicle production to EVs by 2030.⁸⁹

The mineral processing industry in Thailand is driven by the country's aim to become a regional hub for EV production, following its historical role in assembling conventional automobiles.⁹⁰ The EV sector is, in fact, rapidly expanding in Thailand. Among others, Neo Magnequench (a subsidiary of Neo Performance Materials from Canada), which produces REE magnetic materials for the EV and electronics industries,⁹¹ recently reported a 261% increase year-over-year (y-o-y) in REE production capacity in Thailand from imported raw materials.⁹² Meanwhile, Chinese EV manufacturer BYD opened a USD 486 million vehicle plant in Thailand in July 2024, which is linked to the supply chain for REEs and magnets.⁹³

According to an analysis of the Thai market situation, the Thai government's Bio-Circular-Green and EV hub strategic policies support the use of domestic rare earth resources. Foreign investment is on the rise, with investors from China, Japan, Canada, and Europe seeking to establish manufacturing facilities in Thailand,⁹⁴ and an MoU signed with the US in October 2025 on critical minerals (see section 3.6.3).⁹⁵ As of 2024, the Board of Investment expected EV and EV-related investments to exceed 200 billion THB (USD 5.5 billion).⁹⁶ China's aim to make BRI cooperation "greener" has

shifted focus to EVs, solar, and batteries, including in Thailand, creating competitive pressure on European and Japanese carmakers. Meanwhile, local Thai suppliers that have long focused on conventional fossil fuel vehicles face the challenge of rapidly adapting to changing supply chain dynamics and the expectations of Chinese EV manufacturers. These developments pose a challenge for policymakers to harness the benefits of attracting investments in EV manufacturing and other emerging industries, while minimizing risks for local suppliers and ensuring a just transition for the country.⁹⁷

Thailand is expanding renewables and electric mobility, including a policy to achieve a 30@30 EV target, where 30% of vehicles produced in Thailand are to be electric by 2030. However, key challenges remain, including a heavy reliance on fossil fuels, infrastructure gaps, and the need for reskilling the workforce. These require substantial investments in renewable energy, electric mobility, battery storage, and decentralized energy systems. According to a UNDP report, Thailand is using financial tools such as green bonds and sustainability-linked bonds, and leveraging international cooperation, including carbon credit transfers, to mobilize capital for clean technologies.⁹⁸



2

Social and environmental issues associated with critical minerals

Critical energy transition minerals, including cobalt, copper, graphite, lithium, manganese, nickel, and REEs, are essential to the technologies powering the shift to renewable energy and to the digital transformation. Yet their extraction remains associated with widespread human rights abuses and severe environmental degradation, often at the expense of workers and local communities. Poor and unsafe working conditions are common at mining sites, while surrounding communities bear the brunt of water and air pollution and forced evictions linked to extraction and processing activities.

2.1. Introduction

As shown in Chapter 1, Southeast Asia is a significant source of energy transition minerals. As documented by various studies, growing demand for transition minerals poses serious social and environmental threats. This chapter provides a summary of the main issues observed in Southeast Asia.

Between 2010 and 2025, the Transition Mineral Tracker developed by the Business and Human Rights Resource Centre (BHRRC) documented 79 allegations in Indonesia, 10 allegations in the Philippines and 10 allegations in Myanmar. Affected groups include primarily local communities, human rights defenders, and workers.

The allegations encompass a broad range of issues, including poor working conditions, occupational safety and health concerns, violations of collective bargaining rights, and water and air pollution, among many others. These are grouped into three categories: impacts on workers, Indigenous and local communities, and the environment.

2.2. Impacts on workers

According to Sembada Bersama Indonesia, a labor activist organization, and reported by TuK Indonesia, 104 workplace accidents occurred across Indonesia's nickel smelters between 2019 and 2025, resulting in 107 fatalities and 155 injuries.⁹⁹ Workers are frequently exposed to serious chemical and physical health hazards, including exposure to dust and fumes, extreme heat and noise, as well as poor working conditions, such as inadequate food, unsanitary workspaces, and limited access to clean water.¹⁰⁰

Workers also face challenges related to freedom of association and collective bargaining. A 2025 study by Profundo and CNV International found that union busting, i.e., preventing workers from establishing or joining a union or weakening existing unions, is widespread in Indonesia.¹⁰¹ This, in turn, restricts workers' ability to engage in collective bargaining and to protest poor working conditions. Unfair wages and long working hours are also common problems in the mining of transition minerals in Southeast Asia.¹⁰² Workers are frequently hired through subcontracting, which often

results in inadequate pay, limited benefits, and unsafe working conditions.¹⁰³

While women represent a minor share of the official mining workforce, they are significant participants in the informal, artisanal, and small-scale mining industries. Typically, women earn low wages and are frequently employed by contractors in low-tier, casual, or informal daily wage positions.¹⁰⁴ Gender-based inequalities are exacerbated by adverse impacts on women's health and livelihoods, unjust labor conditions—including the lack of equal pay—and gender-based violence.¹⁰⁵ In cobalt mining regions, for example, women bear disproportionate health burdens related to increased risks of sexually transmitted infections (STIs), miscarriages, and premature births.¹⁰⁶ Additionally, when acting as rights defenders, women face heightened vulnerability to targeted attacks.¹⁰⁷

2.3. Impacts on Indigenous Peoples and local communities

Mining can have significant impacts on local communities, primarily through ecosystem degradation, such as water pollution or reduced access to water, which in turn causes serious health problems.¹⁰⁸ The 2025 study by Profundo and CNV International documents cases of land disputes and forced evictions, often with low, inadequate compensation around nickel production in Indonesia, illustrating how mining-induced dispossession undermines local livelihoods.¹⁰⁹

Evidence from several global monitoring initiatives shows that these harms are frequently accompanied by violence against those who resist mining projects. The BHRRC recorded 148 attacks on human rights defenders linked to transition mineral mining between 2010 and 2021 globally.¹¹⁰ Global Witness identifies the Philippines as *“the worst place in Asia for land and environmental defenders”*.¹¹¹

Indigenous Peoples face the risk of losing access to their ancestral lands, cultural heritage, and traditional ways of life, and high risks of retaliation when they defend their rights.¹¹² around 41% of attacks against Indigenous Peoples registered by the BHRRC relate to mining.¹¹³ In the Philippines, Amnesty International has documented cases where Indigenous Peoples' rights defenders vanished after abductions allegedly involving police forces, and had their leaders falsely labelled as terrorists by the Anti-Terrorism Council (“red-tagged”), allowing intrusive surveillance and the freezing of their assets.¹¹⁴

Growing demand for transition minerals increasingly threatens the traditional livelihoods of Indigenous communities in Southeast Asia, whose ancestral lands are targeted for mineral extraction, leading to the destruction of farming and fishing areas and the eventual displacement of whole communities.¹¹⁵ The Transition Mineral Tracker of the BHRRC finds that Indigenous Peoples continue to be disproportionately affected by critical mineral extraction,¹¹⁶ and face escalating risks as more mining projects move onto Indigenous territories in Southeast Asia with weak implementation and enforcement of Indigenous rights. Procedural rights are frequently violated.¹¹⁷ Amnesty International has documented several irregularities in free, prior, and informed consent (FPIC) processes for mining projects in the Philippines.¹¹⁸ Climate Rights International (CRI) has reported land grabbing, lack of compensation, unfair land sales, and failure to obtain FPIC from local communities in Indonesian mining areas.¹¹⁹ Even communities that resisted selling their lands often experienced intimidation, threats, and faced retaliation by police and company representatives,¹²⁰ indicating systemic disregard for community consent.

Finally, mining reinforces inequality through the uneven distribution of

extraction benefits. To counter this, Indigenous Peoples groups have demanded a well-documented and written agreement Free and Prior Informed Consent (FPIC) validated with the entire community and the earnestly implemented with the provision of mutually agreed resources.¹²¹ Local communities bear the environmental and social costs but often receive an inadequate share of the economic benefits. Negotiations between local communities and large mining companies often occur under highly unequal bargaining conditions,¹²² as illustrated by findings from FFA and Profundo that the Rio Tuba Nickel Mining Corporation (Philippines) owes the local Bataraza community USD 4 million in royalties in exchange for the exclusive right to operate the mine on their land.¹²³ An IUCN case study similarly concludes that any economic benefits from mining are temporary for local people, whereas ecological damage and livelihood losses are long-lasting.¹²⁴ Overall, there is limited evidence that the current expansion of transition mineral mining in Southeast Asia delivers fair development outcomes for local communities.¹²⁵ In the Philippines, for example, mining contributes less than 1% to national GDP,¹²⁶ and Global Witness reports that affected local communities have actually become poorer since mining operations began.¹²⁷

2.4. Environmental degradation

The mining and processing of transition minerals cause serious environmental damage along their supply chains, including dust generation, air pollution, contamination of surface and groundwater, including drinking water, land contamination, soil erosion, deforestation, and disturbance and displacement of wildlife and their habitats.¹²⁸

Analysis by the World Resources Institute (WRI) shows that globally, mining activities were directly responsible for 1.4 million hectares of forest loss between 2001 and 2020, with 87% of the mining-related forest cover loss and 89% of associated emissions concentrated in 11 countries: Australia, Brazil, Canada, Ghana, Guyana, Indonesia, Myanmar, Peru, Russia, Suriname, and the US. Indonesia experienced the highest mining-induced tree cover loss, accounting for an estimated 370,000 hectares during the analyzed period, much of it historically linked to coal mining.¹²⁹ However, in recent years, nickel extraction has increasingly occurred in endemic rainforests and critical biodiversity areas, many of which serve as crucial High Carbon Stock (HCS) forests. According to conservative estimates, Indonesian nickel mines have cleared more than 75,000 hectares.¹³⁰

Similarly, in its role as the world's sixth-largest bauxite producer, Indonesian bauxite mining has resulted in the loss of 1,500 hectares of forest in West Kalimantan and has caused detrimental health impacts, especially for children, due to polluted rivers and streams and deteriorating air quality from coal-fired power plants serving the bauxite mines.¹³¹ All these numbers on direct forest impacts do not account for the often significantly larger indirect tree cover loss associated with mining, including production and transportation infrastructure, as well as new settlements.¹³²

Transition mineral production is also highly carbon-intensive, with approximately 10% of global CO₂ emissions estimated to stem from the production of minerals and metals,¹³³ driven by energy-intensive mining, refining, and smelting processes that typically rely on fossil fuel-based electricity, especially from coal.¹³⁴



3

Mapping of critical minerals trade agreements and MoUs

International interest and cooperation on critical minerals have intensified, as reflected in the growing number of trade agreements and MoUs between Cambodia, Indonesia, the Philippines, Thailand, and other economies. Most agreements focus on market access, tariff reductions, investment facilitation, and technical cooperation, with just transition-related commitments often implied rather than explicitly addressed.

3.1. Methodology

Based on desk research and public information as of December 2025, this chapter outlines key existing trade agreements, Memoranda of Understanding (MoUs), and cooperation frameworks on critical minerals between Cambodia, Indonesia, the Philippines, Thailand, and other countries and regions. This study does not aim to provide a comprehensive list but focuses on analyzing key agreements related to critical minerals.

The filtering process of these agreements is based on several specific criteria:

- **Geographic focus:** The review focuses exclusively on agreements involving the focus resource-rich ASEAN countries central to the study: Cambodia (section 3.3), Indonesia (section 3.4), the Philippines (section 3.5), and Thailand (section 3.6). Of note, Myanmar is excluded from this mapping due to its political instability and the largely unregulated nature of its mining sector.
- **Thematic relevance:** The review focuses on trade agreements, MoUs, and cooperation frameworks specifically addressing critical minerals supply chains.
- **Public availability:** The filtering is based on public information available as of December 2025. The sources explicitly note that, for many agreements, the full text was not publicly accessible, limiting the evaluation to published summaries, factsheets, or media announcements.
- **Strategic significance:** The chapter focuses on partnerships with major global economies such as Australia, China, the EU, Japan, South Korea, and the US, reflecting the intense international competition to secure supply chains.

Differences between trade agreements and treaties, MoUs, and cooperation frameworks

Trade agreements and treaties: These are usually broad, formal agreements that establish legally binding rights and obligations for the participating parties. Their purpose is usually broad economic integration, including market access and tariff reductions. Their scope often covers entire sectors (e.g., automotive or agri-food), and their enforcement is rigorous, as breaches can trigger formal arbitration or legal remedies.¹³⁵

MoUs: These are partnership agreements that often set out operational arrangements under an international agreement. Their purpose is to express political commitment or mutual intention, often focusing on a narrower scope such as technical knowledge sharing, joint research, or expertise exchange. They are not supported by formal legal enforcement mechanisms. In practice, it means that violations generally result only in diplomatic friction or reputational costs rather than legal penalties.¹³⁶

Cooperation frameworks: These often serve as a high-level “strategic partnerships” to define the overall direction of a bilateral relationship. Their purpose is to establish long-term alignment across multiple fields (e.g., energy, defense, and digital transformation), providing a scope that facilitates the later creation of more specific, functional agreements or MoUs.

These agreements and MoUs have been evaluated across four key dimensions, for which sustainability safeguards are considered crucial to ensuring they support a just transition and deliver local

benefits to workers and communities within these countries (Table 6).



Women workers in Morowali, Central Sulawesi, working in Indonesia's expanding nickel industry, driven by growing demand for electric vehicle batteries. Photo by: Garry Lotulong.

Note: Due to the limitations of public-source analysis, particularly undisclosed, missing, or inaccessible information, the evaluation could be biased.

Table 6 Sustainability safeguards assessed

Criteria	Definition
Local benefits clauses	Contractual, regulatory, or financing provisions that require a project developer to deliver specified economic, social, and sometimes environmental benefits to local communities or the host country/region affected by a project. Local benefit clauses can cover topics such as local employment and training, local procurement, thresholds for domestic processing or refining, and financial contributions to community development funds.
Provisions ensuring domestic needs are prioritized	Measures that give priority to a country's own industrial, energy, defense, or strategic requirements over exports or foreign use of critical minerals.
References to international sustainability standards	Commitment to respect international sustainability standards, including, at minimum, the International Labour Organization (ILO) Declaration on Fundamental Principles and Rights at Work, the United Nations Guiding Principles on Business and Human Rights (UNGPs), and the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP).
Mechanisms for fair pricing	Mechanisms that can take the form of policies, regulatory tools, contractual arrangements, or market interventions designed to ensure that prices reflect transparent market fundamentals and equitable value distribution, while avoiding excessive volatility, market manipulation, or exploitative practices. They aim to ensure equitable value sharing among extractive companies, resource-rich countries, and downstream users, and to provide stability for producers and consumers. An example is the Fair Cobalt Alliance's "Cobalt Credits" mechanism for artisanal and small-scale cobalt mining in the DRC. Downstream buyers pay a premium to support safer, more responsible cobalt production, rather than relying solely on the spot commodity price. ¹³⁷ The Fair Cobalt Alliance is a multi-stakeholder platform with members including downstream buyers and NGOs.

3.2. ASEAN Minerals Development Vision and Minerals Cooperation Action Plan(s)

3.2.1. Key findings

Through the ASEAN Minerals Development Vision (AMDV) and the ASEAN Minerals Cooperation Action Plan (AMCAP)-IV 2026–2030,¹³⁸ ASEAN has clearly affirmed its intention to position minerals, including critical minerals, as a key economic pillar by expanding regional and global cooperation, fostering responsible practices and technological innovation, and building human capacity to attract

responsible investment. ASEAN specifically seeks to satisfy growing regional and global demand for transition minerals while ensuring a secure supply for ASEAN's own industrial needs.

ASEAN has made strong commitments to critical minerals, adopting the AMDV¹³⁹ and AMCAP-IV¹⁴⁰ to position the region as a sustainable investment hub. Its strategy emphasizes value chain integration from upstream extraction to downstream processing, responsible practices and production, technological innovation, capacity building, and a regional database to attract responsible investment. ASEAN specifically seeks to meet growing regional

and global demand for transition minerals while securing supplies for its own industrial needs.

However, the AMDV and AMCAP-IV are non-binding “shared frameworks”. They guide political intent, but their successful implementation depends on adoption of uniform national regulation across ASEAN member states supported by legal, mandatory enforcement mechanisms to hold companies or governments accountable for the implementation of ESG safeguards. Member states should also deploy incentives to attract investments for building integrated value-chain infrastructure. The financial sector could play a pivotal role, provided that financial institutions apply stringent sustainability standards in their lending and investments. Multilateral development banks (MDBs) such as the Asian Development Bank (ADB) can offer de-risking solutions and technical support to mobilize capital, while commercial banks can deploy sustainable financing mechanisms such as green bonds or outcomes-based financing.

3.2.2. ASEAN Minerals Development Vision (AMDV)

The AMDV, published in September 2025, serves as a strategic regional roadmap for transforming the ASEAN region into a leading global destination for investment in responsible minerals, including critical minerals.¹⁴¹ The vision should act as guidance for all successive five-year ASEAN Minerals Cooperation Action Plans. It is built upon two core strategies:

- *“Develop the minerals sector as a key pillar of the ASEAN Economic Community (AEC) that supports an integrated value chain, by boosting technical and commercial competitiveness and enhancing investment and trade, and*

- Promote sound governance and leadership in minerals development to position the sector as a key driver of sustainability through strong environmental, social and economic performance, and responsible supply of minerals.”¹⁴²*

Key actions under this vision include attracting global investment, empowering small-scale mining, facilitating diverse financing models, and leveraging digital transformation to ensure the region meets both regional and global demand for critical minerals.

The AMDV explicitly outlines the role of the financial sector in achieving this regional vision, which has several implications for both MDBs and commercial banks. In particular, the vision encourages the use of green bonds, blended finance, and public-private partnerships (PPPs) to secure resources for responsible projects.¹⁴³ This signals a regional expectation for MDBs to provide de-risking solutions and for commercial banks to develop specialized sustainable finance products.

Social and sustainability safeguards

The AMDV includes explicit intent to engage stakeholders and empower communities and Indigenous Peoples. It identifies the empowerment of small-scale mining as a way to improve lives in host communities and contribute to local economies. However, the vision does not include specific targets.

One of the primary objectives of the AMDV is to ensure that investments develop an integrated value chain capable of meeting ASEAN's demand for minerals, while simultaneously creating growth opportunities for ASEAN-based minerals companies and contributing to the broader economic development of all member states.¹⁴⁴ The AMDV prioritizes attracting “global investment” and promoting international trade,¹⁴⁵ and does not mention “domestic-first” mechanisms,

which may create tension between serving regional needs and fulfilling export commitments to external partners.

The vision commits to “leading practices in technology and sustainability”¹⁴⁶ and implementing the ASEAN Principles on Sustainable Minerals Development (see box for more information). It also mentions aligning the sector with global sustainability and governance standards.¹⁴⁷ Furthermore, it emphasizes the importance of building *“positive relationships with local communities and indigenous peoples through inclusivity, respect for interests, cultures and customs, by responding*

*to concerns and requests, supporting capacity-building, facilitating social and economic development and promoting local content.”*¹⁴⁸ However, the vision does not explicitly cite international sustainability standards such as the ILO Declaration on Fundamental Principles and Rights at Work or UNDRIP.

The AMDV remains a general document that does not provide details on potential market interventions, such as price floor mechanisms to avoid excessive volatility, or tools to ensure equitable value distribution between extractive companies and resource-rich countries.

ASEAN Principles for Sustainable Minerals Development (APSMĐ)

The APSMD promotes responsible mining across the value chain, focusing on environmental protection, social responsibility, and governance to position ASEAN as a “sustainable” minerals investment destination. The principles serve as a foundation for future strategies, including the AMDV 2045 and Action Plan 2026–2030.

The 10 principles provide a shared regional framework for ASEAN countries, communities, and investors to advance sustainability in mineral exploration, extraction, and processing.¹⁴⁹ They advocate for the integration of mineral development with international sustainability standards like the UN Sustainable Development Goals (SDGs) and the Paris Agreement. The principles prioritize transparency and advocate for stakeholder engagement, including communities, to inform decision-making. In addition, they address the protection of the environment and the health and safety of workers, contractors, and communities, to foster public trust and create a stable economic environment for investments. Finally, the principles advocate for outcomes-based regulatory approaches and responsible production practices, such as circularity, to ensure that the minerals sector contributes to inclusive socio-economic development across the region.

The APSMD document indicates that key performance indicators (KPIs) will be developed to monitor progress on the implementation of the principles.¹⁵⁰

3.2.3. ASEAN Minerals Cooperation Action Plan IV (AMCAP-IV) 2026–2030

AMCAP-IV 2026–2030¹⁵¹ is the latest five-year regional strategy adopted by ASEAN member states in October 2025 at the ASEAN Ministerial Meeting on Minerals (AMMin). It aims to operationalize the AMDV (see section 3.2.2) and is guided by the ASEAN Economic Community (AEC) Strategic Plan 2026–2030,⁹ which includes two objectives specific to minerals:

- *“Pursue sustainable development of extractive industries.*
- *Expand upstream to downstream minerals and metals cooperation.”¹⁵²*

AMCAP-IV 2026–2030 organizes actions into four key areas:

- **Trade and investment:** increasing regional competitiveness and promoting ASEAN as a sustainable investment destination
- **Sustainable minerals development:** implementing the APSMD to improve governance and socio-environmental outcomes
- **Capacity building:** strengthening institutional and technical expertise in governance and green mining technologies
- **Minerals information and database:** enhancing the ASEAN Minerals Information System (AMIS) to provide high-quality, transparent data to investors and the public

In particular, through the AMIS, the goal is to *“provide geological data and packages, minerals-industry specific data, and policy [...] that will help drive investment along the minerals value chain in the ASEAN*

region” and *“provide information about the ASEAN minerals industry, minerals development in the region, research, capacity building, environmental and community aspects of minerals activity to aid decision-making by investors, governments, NGOs and communities”*.¹⁵³

The plan indicates that a monitoring and evaluation (M&E) system will record the progress of AMCAP-IV implementation and the results of its strategies and actions. This system should also ensure reporting and evaluation of a stakeholder engagement framework to track engagement with investors, CSOs and development partners.¹⁵⁴

3.3. Cambodia

3.3.1. Key findings

The United States is the primary country with a formal bilateral partnership with Cambodia, specifically to secure access to critical minerals. In October 2025, during the ASEAN Summit, the US signed a reciprocal trade agreement with Cambodia that aims to facilitate US investments to explore, mine, process, and export critical minerals and energy resources on national treatment terms.¹⁵⁵ This opens a largely unexplored mining sector to US firms and embeds the US economically in a country that has long been politically close to China (see section 1.2).

3.3.2. United States

On October 26, 2025, Cambodia and the US signed an Agreement on Reciprocal Trade at the 47th ASEAN Summit in Kuala Lumpur, aiming to strengthen commercial and strategic ties between the two countries, including investment flows into Cambodia's mineral sector.¹⁵⁶

⁹ The AEC Strategic Plan 2026–2030 guides regional cooperation through 2030, focusing on trade, investment, sustainability, digital transformation, and resilience against crises.

Scope of the agreement

Cambodia agreed to allow and facilitate US investment in exploration, mining, extraction, refining, processing, transport, distribution, and export of critical minerals and energy resources on terms “no less favorable” than those provided to Cambodian investors. In that context, Cambodia should also facilitate US investments to “supply power, telecommunication, transportation, and infrastructure services.”¹⁵⁷

The deal goes beyond traditional tariff discussions to explicitly expand commercial opportunities in critical minerals by enabling US institutional partners, such as the Export-Import Bank of the United States (EXIM) and the U.S. International Development Finance Corporation (DFC), to consider supporting investments in Cambodian critical minerals sectors alongside private US partners.

Social and sustainability safeguards

The agreement includes a commitment for Cambodia to protect internationally recognized labor rights, namely the “*ILO Declaration on Fundamental Principles and Rights at Work and its Follow-Up (1998), as amended in 2022; a prohibition on the worst forms of child labor; and acceptable conditions of work with respect to minimum wages and hours of work.*” The agreement also explicitly mentions that:

- “Cambodia shall adopt and effectively implement a prohibition on the importation of goods mined, produced, or manufactured wholly or in part by forced or compulsory labor, as defined by the relevant International Labour Organization (ILO) instruments ratified by the country
- Cambodia shall adopt and maintain environmental protections and effectively enforce its environmental laws.”

The agreement includes a clause stipulating Cambodia’s obligation to protect and effectively enforce internationally recognized labor rights (e.g., ILO core standards) through laws, institutions and legal sanctions, and a commitment from the country to engage with the US to address labor rights issues. However, no clear monitoring measures or enforcement mechanisms, such as independent third-party audits, binding dispute settlement, or specific penalties for non-compliance with labor rights, are described. As flagged by Tharo Khun, a prominent Cambodian labor advocate, reinstating programs with robust enforcement mechanisms—and tying tariff benefits to clear, measurable benchmarks—is essential to demonstrate that labor rights are non-negotiable in trade agreements.¹⁵⁸

The agreement provides no priority or additional benefits to local investors, nor does it include clauses to consult, engage and protect workers, trade unions, CSOs, or local communities. It primarily facilitates foreign investment and the export of critical minerals but does not explicitly prioritize Cambodia’s domestic consumption or supply needs. It also states that Cambodia should facilitate job creation in the US and that the US may terminate the agreement if Cambodia enters into a new bilateral free trade agreement (FTA) with a country that poses a “*material threat to economic or national US security*”.

It further instructs Cambodia to “[...] refrain from providing preferential subsidies to its goods-producing state-owned enterprises.” It does not include mechanisms to ensure fair pricing of critical minerals or mineral-related products.

3.4. Indonesia

3.4.1. Key findings

Several countries have established formal partnerships with Indonesia to secure access to critical minerals, invest in downstream processing, and bolster supply chain resilience, especially for EVs and clean technologies. These agreements typically focus on cooperation regarding nickel, cobalt, lithium, REEs, and battery-related industries, often encompassing joint research, industrial development, and investment initiatives.

Across agreements, binding social and sustainability safeguards are limited. Most documents mention responsible mining, environmental concerns, or capacity building in general terms, but specific obligations are largely missing. Notably, prioritizing the domestic market, fair pricing mechanisms, and clear references to international sustainability standards are usually absent or only implied. Local benefit-sharing clauses are limited, with some general local/regional value content requirements for preferred tariffs under FTAs, and largely vague commitments to local skills development, sharing expertise, and promoting investments.

Civil society assessments warn that these partnerships may entrench extractive economies, hinder Indonesia's industrialization, and neglect the protection of community, worker, and Indigenous rights. They raise concerns about transparency, environmental risks, and geopolitical priorities that favor the supply security of importing countries over Indonesia's sustainable development.¹⁵⁹

3.4.2. Australia

In November 2023, Australia's Minister Husic and Indonesia's Acting Coordinating Minister Thohir signed an MoU to establish

an EV collaboration mechanism, building on a previous agreement between Prime Minister Anthony Albanese and President Joko Widodo to cooperate on the EV sector.¹⁶⁰ The Northern Territory Government of Australia and the Republic of Indonesia also signed an MoU to collaborate on critical mineral supply chains for a period of five years.¹⁶¹

Scope of the agreement

The MoU on critical minerals includes the following aspects:¹⁶²

- Encouraging investments in critical minerals;
- Conducting joint research, exploration, and development of processing and refining;
- Collaborating on the adoption and promotion of responsible mining practices; and
- Promoting a skills development program through education and training.

Under the EV MoU, the countries commit to mapping EV supply chains, improving environmental and social governance, conducting joint scientific and research studies, and promoting new business connections.¹⁶³

Social and sustainability safeguards

Few details are published on both MoUs. While the MoU on critical minerals mentions the promotion of responsible mining practices and skills development programs,¹⁶⁴ it lacks formal clauses prioritizing domestic needs, fair pricing mechanisms, or a binding commitment to international sustainability standards. The partnership helps both countries diversify supply chains,¹⁶⁵ but enforceable sustainability safeguards require further development.

3.4.3. China

China is Indonesia's largest economic and strategic partner and dominates much of Indonesia's critical mineral extraction, downstream processing, and refining, largely through significant investments and strategic industrial cooperation.¹⁶⁶ In November 2024, Indonesia's new president's first visit was to China, aimed at strengthening cooperation on minerals.¹⁶⁷ The trade relationship between China and Indonesia is supported by several bilateral and regional agreements, including the China-ASEAN Free Trade Agreement (CAFTA), established in 2010. This agreement has reduced tariffs between China and ASEAN member states, including Indonesia, fostering deeper economic integration and improving market access for businesses. Additionally, the Regional Comprehensive Economic Partnership (RCEP) has reduced trade barriers and promotes cooperation in areas such as e-commerce and intellectual property.

The Belt and Road Initiative (BRI) is a comprehensive framework focused on infrastructure and trade development. Projects under the BRI, such as the Jakarta-Bandung High-Speed Rail, are designed to improve logistics and connectivity, thereby facilitating bilateral trade. Furthermore, the Indonesia-China Economic and Trade Cooperation Forum serves as a platform for governments and businesses to discuss trade policies and investment opportunities, encouraging collaboration.¹⁶⁸

Scope of the agreements

In past decades, the agreements have focused mainly on coal and nickel mining, downstream processing, battery component manufacturing, and renewable energy materials.¹⁶⁹ More recent agreements centre around collaboration in the production of "new energy vehicles",

lithium batteries, and photovoltaics.¹⁷⁰ To support these activities, China focuses on enhancing the region's transportation and logistics infrastructure.

Social and sustainability safeguards

No formal provisions prioritize Indonesian domestic mineral consumption or ensure local benefit sharing. Chinese companies' ESG frameworks are referenced in unofficial documents, but enforcement details are absent.¹⁷¹ Explicit commitments to fair pricing mechanisms are likewise absent.

The full text of the partnerships could not be found in public sources.

3.4.4. European Union

On September 23, 2025, EU President von der Leyen and Indonesian President Prabowo concluded negotiations on the EU-Indonesia Comprehensive Economic Partnership Agreement (EU-ID CEPA), following a political agreement in July 2025 and nearly a decade of negotiations.¹⁷² Once the agreement takes effect, tariffs on over 98% of tariff lines will be removed. Furthermore, the Energy and Raw Materials section describes measures for privileged market access and investments for European businesses in the Indonesian market, including provisions that prohibit discrimination against EU companies and "unjustified" barriers.¹⁷³

Scope of the agreement

- The EU-ID CEPA will cover strategic sectors such as agri-food, chemicals, machinery, and automotive industries for the EU, and palm oil, textiles, and footwear for Indonesia.¹⁷⁴
- The EU-ID CEPA aims to enhance investment by European businesses in Indonesia and improve EU access to essential critical minerals, which are strategically important to the EU.

As such, the CEPA with Indonesia supports EU supply diversification, thereby reducing EU dependence on China.¹⁷⁵

Social and sustainability safeguards

The European Commission published a factsheet on the sustainability aspects of the CEPA. It says the agreement includes a framework for sustainable growth and development, including:

- *“Strong and enforceable commitments on the environment, climate, workers’ rights, and women’s empowerment*
- *Commitments to the Paris Climate Agreement and fundamental ILO conventions enforceable through trade remedies as a last resort*
- *Opening trade in green goods and services*
- *An active role for civil society to monitor implementation*
- *Creating a platform for dialogue and cooperation on regulatory and other sustainability measures.”¹⁷⁶*

Although provisions for protecting the climate and the environment, workers’ rights, women’s rights, and civil society involvement are included, the published information lacks specific considerations of local community and Indigenous rights, as well as of ensuring a just transition.

More specifically, local benefit clauses are not explicitly included, but the EU-Indonesia CEPA features rules of origin (ROO) that require products to undergo substantial processing in either the EU or Indonesia to qualify for tariff preferences, using product-specific rules, changes in tariff classification, or value-added criteria. These indirectly support Indonesian production by ensuring that tariff preferences are granted to goods produced in Indonesia and the EU.¹⁷⁷ However, CEPA’s raw materials chapter curbs Indonesia’s export bans (per the

World Trade Organization (WTO) nickel dispute), favoring joint ventures for EU access.¹⁷⁸ Moreover, there are no provisions ensuring domestic needs are prioritized or mechanisms for fair pricing.

There are binding commitments to international sustainability standards, including the Paris Climate Agreement, the Convention on Biological Diversity, the core ILO Fundamental Principles and Rights at Work, and the UN and ILO conventions advancing women’s economic empowerment and gender equality. Although these commitments are binding, *“[...] trade remedies are foreseen as a matter of last resort.”¹⁷⁹*

Civil society groups have voiced concerns that CEPA could undermine Indonesia’s sovereignty over its resources, weaken environmental, social, and labor protections, fail to secure FPIC for Indigenous Peoples, and promote extractive models without enforcing binding sustainability standards.

NGO Fern’s Perrine Fournier states in response to the concluded agreement:

“The deal reinforces an extractive model which has already caused immense harm to Indonesia’s forests. It contains no tangible, foreseen benefits for those who have historically lost out when trade is liberalised – namely, Indigenous communities, smallholders and workers. Instead, it strengthens the already vice-like grip corporations hold over Indonesia’s forests.”¹⁸⁰

An October 2025 report by “Handel Anders!” (Trade Differently!), a coalition of trade unions, social and farmer organizations, and involved citizens, reiterates that, under the EU-Indonesia CEPA, multinational companies will mainly benefit while the environment, human rights, workers, and local communities will pay the costs.¹⁸¹

The report further explains that CEPA and a parallel WTO dispute over nickel ore exports are undermining Indonesia's industrialization policy.¹⁸² In 2014, Indonesia introduced a ban on the export of nickel ore, aiming to diversify its role as a raw material supplier by requiring domestic processing to add value and fuel national industrial development. In response, the EU filed a complaint against Indonesia at the WTO, which it won in 2022.¹⁸³

The EU is using CEPA to force Indonesia to remove these protective measures (export bans, tariffs, and quotas) to secure access to critical raw materials for European industry. Through both CEPA and the WTO, the EU is pushing to maintain Indonesia's role as a raw material supplier, even though this conflicts with the country's efforts to industrialize. This dynamic perpetuates an unequal economic relationship.¹⁸⁴

3.4.5. France

In May 2025, Indonesia's President Prabowo Subianto and France's President Emmanuel Macron signed an MoU on cooperation in critical minerals as part of a broader strategic partnership between the two countries.¹⁸⁵

According to Reuters, the MoU concerns cooperation between French mining company Eramet, which will provide technical expertise, and Indonesian sovereign wealth funds Danantara and the Indonesia Investment Authority, which will manage long-term financing. They jointly stated that the agreement will *"[...] explore the establishment of a strategic investment platform in the nickel sector, spanning upstream to downstream operations"*.¹⁸⁶

Scope of the MoU

The MoU specifically concerns collaboration with Eramet on a strategic

investment platform in the nickel sector. Other MoUs on critical minerals do not specify the scope.

Social and sustainability safeguards

The joint statement recognizes the importance of critical minerals for a sustainable energy transition, as *"[...] they [the Indonesian and French Presidents] reaffirmed their commitment to strengthening the downstreaming industry, enhancing sustainable mining practices and developing a policy framework that promotes environmental, social, and governance principles in critical minerals mining and processing."*¹⁸⁷

However, the published information lacks specific commitments. No explicit pledges were found regarding local benefit clauses, domestic prioritization beyond strengthening Indonesia's downstream industrial capabilities, fair pricing mechanisms, or references to international sustainability standards, although these aspects may be addressed in longer-term negotiations.

The full text of the partnership could not be found in public sources.

Table 7 summarizes the sustainability safeguards included in the agreement.

3.4.6. Japan

Recent Indonesia-Japan agreements on critical minerals strengthen a long-standing economic partnership established by the Indonesia-Japan Economic Partnership Agreement (IJEPA) in 2008.¹⁸⁸ These agreements highlight cooperation on critical minerals necessary for EV batteries and clean technologies.¹⁸⁹

Scope of the agreements

The agreements focus on critical minerals, EV batteries, and the development of an

EV ecosystem.¹⁹⁰ The Energy and Mineral Resource section of the IJEPA contains provisions on cooperation, import and export restrictions, and the encouragement and promotion of investments.¹⁹¹

Social and sustainability safeguards

The IJEPA provides safeguards for environmental aspects:

"1. Each Party, in pursuit of sustainable development and taking into account its obligations under those international agreements concerning environment to which it is a party, confirms the importance of avoiding or minimizing, in an economically efficient manner, harmful environmental impacts of all activities related to energy and mineral resources in its Area.

2. Each Party shall:

(a) take account of environmental considerations, in accordance with its laws and regulations, throughout the process of formulation and implementation of its policy on energy and mineral resources;

(b) encourage favorable conditions for the transfer and dissemination of technologies that contribute to the protection of environment, consistent with the adequate and effective protection of intellectual property rights; and

*(c) promote public awareness of environmental impacts of activities related to energy and mineral resources and of the scope for and the costs associated with the prevention or abatement of such impacts."*¹⁹²

With regard to community development, the agreement states:

"Each Party welcomes any contribution by investors of the other Party to the development of its community when such

investors make investments in the energy and mineral resource sector in its Area."

The agreement further indicates that responsibility for implementation lies with the Sub-Committee on Energy and Mineral Resources.

Regarding local benefit clauses, the IJEPA mandates a minimum local value content (LVC), requiring products to undergo substantial processing in either Japan or Indonesia to qualify for tariff preferences, as determined by product-specific rules, changes in tariff classification, or value-added criteria. This indirectly supports Indonesian production by ensuring that tariff preferences are granted to goods produced in Indonesia and Japan.¹⁹³

However, no explicit clauses on domestic prioritization were found, beyond welcoming contributions to the development of local communities alongside investments, nor any fair pricing mechanisms or references to international sustainability standards.

3.4.7. South Korea

In February 2022, Indonesia and South Korea signed an MoU on critical minerals development following discussions at the 12th Indonesia-Korea Energy Forum that strengthened cooperation on critical minerals.¹⁹⁴ Another, broader, agreement was concluded in July 2023.¹⁹⁵

Scope of the agreements

The agreements aim to facilitate information sharing, human resource development, and project collaboration among private-sector actors, according to the Indonesian Minister of Energy and Mineral Resources, Arifin Tasrif.¹⁹⁶ Furthermore, in July 2023, the media reported that the two countries agreed to cooperate across multiple industries, including the battery and EV sectors and

mineral supply chains, specifically nickel, and to support each other in achieving zero-emission goals through joint projects.¹⁹⁷

Social and sustainability safeguards

With regard to corporate social responsibility (CSR), the Indonesia-South Korea FTA states:

“Each Party reaffirms the importance of encouraging enterprises operating within its territory to voluntarily incorporate into their internal policies those internationally recognized standards, guidelines, and principles of corporate social responsibility that have been endorsed or are supported by that Party.”¹⁹⁸

Besides this non-binding provision, no explicit safeguards were found for local benefit sharing, domestic prioritization, or fair pricing mechanisms, except for a qualifying and regional value content requirement for preferred tariffs, which indirectly supports Indonesian production and regional integration by ensuring that tariff preferences are granted to goods produced in Indonesia and Japan.¹⁹⁹

3.4.8. United Kingdom

In November 2024, the UK Foreign, Commonwealth & Development Office (FCDO) signed an MoU with Indonesia's Ministry of Energy and Mineral Resources to establish a partnership on critical minerals.²⁰⁰

Scope of the MoU

Cooperation will center primarily on nickel, cobalt, lithium, graphite, and REEs, both raw materials and processed forms. The framework provides flexibility for the participants to jointly prioritize cooperation on additional critical minerals as they are deemed relevant. Regarding areas of cooperation, the participants will collaborate across a range of activities, including mineral resources, geological

work, mining, processing, manufacturing, recycling, modern mining technologies, post-mining activities, and environmental rehabilitation.

In addition, the MoU describes the various forms in which collaboration may take place:²⁰¹

- **Policy support:** Coordination and dialogue on policy, including supply chain resilience, regulation, and ESG-promoting frameworks for mining and processing.
- **Commercial and institutional collaboration:** Facilitating partnerships between business and government to build and invest in responsible green critical mineral supply chains, including integrated processing, manufacturing, and recycling, to foster local prosperity.
- **Sharing of expertise:** Joint capacity building, studies, and knowledge exchange.
- **Other areas of cooperation:** For example, clean energy solutions and responsible practices, as mutually decided.

Social and sustainability safeguards

The MoU recognizes that “[...] cooperation on resilient, sustainable, and transparent critical minerals supply chains is essential” and aims to facilitate “[...] sharing of technical knowledge, advice, skills, and expertise on sustainable critical minerals, and to mitigate the potential of environmental and social risks linked to mining activities.” However, the published information lacks specific commitments.

According to media articles, Britain's development minister Anneliese Dodds said that the UK's partnership with Indonesia “[...] aims to generate local employment while safeguarding the environment from the harmful effects of mining”,²⁰² and that it has the potential to increase investment, create jobs, and

improve local welfare.²⁰³ However, support for local welfare is not specified and is noted only as a potential effect of the collaboration. The official MoU contains no provisions ensuring that domestic needs are prioritized, nor any mechanisms for fair pricing specified in the official MoU, and it makes no references to international sustainability standards.

In April 2025, the British government confirmed its support for a visit by the UN High Commissioner for Human Rights to West Papua, a visit President Joko Widodo had promised in 2018, but that Indonesia has still not facilitated. Such a visit is crucial for assessing the human rights situation. According to the United Liberation Movement for West Papua (ULMWP), the UK-Indonesia MoU risks UK complicity in ecocide and increased militarization in West Papua.²⁰⁴ In June 2026, the UK Government confirmed that the EU Deforestation Regulation (EUDR) will apply in Northern Ireland from 30 December 2026 and indicated it intends to align Great Britain's regime with key elements of the EUDR.²⁰⁵

3.4.9. United States

In July 2025, US President Trump announced a trade agreement with Indonesia.²⁰⁶ The agreement focuses on trade, investment, and joint development of mineral supply chains.²⁰⁷

Scope of the agreement

- **Reduced tariffs in all sectors:** Indonesia agreed to remove tariff barriers on over 99% of US products exported to Indonesia, including critical minerals, in return for a reduced import tariff of 19%.²⁰⁸ According to the media, there is potential for further tariff reduction for Indonesia for certain strategic commodities.²⁰⁹
 - Similar to the EU, this agreement aligns with US efforts to reduce dependence on China and, more broadly, growing exports of US products.
 - For Indonesia, investment in the processing and diversification of the mineral processing industry is potentially beneficial.²¹⁰
 - According to Global Trade Alert, the agreement has been partially implemented.²¹¹
- ### Social and sustainability safeguards
- The agreement, as published by the US Government in July 2025, states that Indonesia has committed to implementing a “*forced labor import ban*” and removing restrictions on workers and unions exercising their rights to collective bargaining and freedom of association.²¹² This applies only to Indonesia. The published information lacks other safeguards. The following aspects are missing:
- **Local benefit clauses:** According to media articles, there is potential for provisions on joint investment, with the Indonesian sovereign fund Danantara included as a project partner to preserve national control and promote local development, and a focus on midstream and downstream investment and transferring technical expertise. However, support for local welfare is not specified and is only noted as a *potential* effect of the collaboration.²¹³
 - There are no explicit provisions that prioritize domestic needs. Critical media argue that liberalizing mineral exports could undermine Indonesia's efforts to promote local downstream industries, which have been central to its mineral policy.²¹⁴
 - No references to international sustainability standards were found.
 - There are no explicit mechanisms for fair pricing in the agreement.

The full text of the partnership could not be found in public sources.

While the upcoming trade agreement between the US and Indonesia could boost Indonesia's economic growth, it also raises concerns about irresponsible extraction practices. Indonesia for Global Justice argues that the agreement threatens Indonesia's economic sovereignty by perpetuating a dependency in which the country serves as a low-cost supplier of critical minerals to US industrial and military interests. Furthermore, the deal is condemned for accelerating environmental destruction and agrarian conflicts while offering unequal trade concessions that favor foreign (US) investors over Indonesian local industries.²¹⁵

3.5. The Philippines

3.5.1. Key findings

The Philippines is currently the world's largest exporter of nickel ore,²¹⁶ underpinning its pivotal role in global mineral supply chains. It also holds significant reserves of cobalt and other critical minerals (see section 1.5), making it an increasingly attractive investment destination. This growing interest is supported by ongoing government reforms, such as the Department of Environment and Natural Resources' Administrative Orders, which streamline permitting²¹⁷ and contribute to a more favorable investment ecosystem for expanding exploration and processing opportunities. These developments are attracting attention from countries such as the US and Japan, which aim to diversify their critical minerals supply chains and strengthen economic ties.

3.5.2. Canada

On December 5, 2024, Canada and the Philippines announced exploratory discussions on a potential bilateral FTA.²¹⁸ On November 5, 2025, the Canadian

Government issued a "Notice of Intent to enter into negotiations toward a Canada-Philippines free trade agreement",²¹⁹ indicating that negotiations would begin within three months. Although the Notice of Intent does not explicitly mention critical minerals, Canada's trade minister had previously mentioned sectors of potential interest, including critical minerals, alongside digitalization, AI, energy solutions, mineral processing, and other areas where Canadian businesses already operate.²²⁰

3.5.3. Japan

The Philippines has expressed interest in joining the US-Japan Critical Minerals Agreement, which aims to facilitate trade, ensure fair competition, and strengthen supply chains for minerals essential to batteries and clean technologies.²²¹ The ultimate goal for the Philippines is to attract US and Japanese investments to develop their domestic processing capacity instead of limiting their role to exporting raw materials.

3.5.4. South Korea

In October 2024, the Republic of the Philippines and the Republic of Korea agreed on a "strategic partnership" aimed at deepening their cooperation in various high-tech fields, including critical minerals.²²²

Scope of the MoU

With this partnership, the two countries aim to formulate concrete action plans and implement initiatives in various fields, including energy, critical minerals, AI, 5G, and the defense sector.²²³

This is particularly relevant for South Korea, which is heavily dependent on imported critical minerals for key economic sectors, including high-tech manufacturing, EVs, and robotics. The two countries have also announced their

intention to further expand trade and investment relations under the Philippines-Korea Free Trade Agreement (PH-KR FTA), signed in September 2023. More specifically, under this partnership, the two countries will “[...]pursue strategic opportunities for complementation in manufacturing and critical raw materials processing, innovation, digital transformation, connectivity, space economy, space technology utilization, climate change mitigation and adaptation, and a just transition to clean energy.”²²⁴ The partnership mentions, among others:

- “[...] increasing research and development in low-carbon transport solutions, including EV production, development of space infrastructure, facilitation of technology convergence in the creative sector, cooperation in areas related to renewable energy, universal and affordable 5G access, and the Fourth Industrial Revolution”;^h
- “[...] strengthened cooperation in the supply chain of critical raw materials”, including fostering innovation and responsible processing of critical raw materials.

Social and sustainability safeguards

The strategic partnership recognizes the importance of ensuring economic security, job creation, and building responsible and resilient supply chains for critical raw materials, including their responsible processing. However, the declaration lacks explicit local benefit clauses that ensure direct economic gains for local communities or industries in the Philippines. It also does not contain clear provisions prioritizing domestic needs over export or foreign interests. While the text references international frameworks, such as cooperation under Article 6.2 of the Paris Agreement, and mentions the

importance of protecting workers' rights and welfare, emerging employment sectors and overall labor relations, it does not specifically cite internationally recognized human rights standards (e.g., OECD Guidelines or the UNGPs). There are also no explicit mechanisms for the fair pricing of critical minerals or raw materials supply chains outlined in the declaration.

Another MoU between the two countries was signed in May 2025, covering renewable energy, EVs, and the value-added processing of critical minerals for battery production, but no further details on the inclusion of sustainability safeguards were found.²²⁵

3.5.5. Sweden

Although the Philippines and Sweden have not concluded a trade agreement, the two governments have been strengthening their cooperation on responsible mining and the development of critical minerals. In October 2025, high-level discussions took place between the Philippine Department of Environment and Natural Resources (DENR) and Business Sweden (a public-private organization jointly owned by the Swedish state and the Swedish business sector) focused on trade and investment promotion and covering responsible mining, research collaboration, technology transfer, and responsible practices.²²⁶

3.5.6. United States

In November 2023, the Philippines and the US launched a partnership to implement a US-funded assistance program, worth roughly PHP 280 million (about USD 5 million), aimed at developing the Philippine critical minerals sector. The partnership was structured through an MoU signed with five Philippine agencies and two industry associations, namely the

^h The Fourth Industrial Revolution (4IR) refers to the current phase of technological transformation in which digital, physical, and biological systems are increasingly integrated, fundamentally changing how economies, industries, and societies operate.

Chamber of Mines of the Philippines and the Philippine Nickel Industry Association (PNIA).²²⁷

Scope of the MoU

The partnership focuses on streamlining permitting processes, advancing policy reforms, enhancing minimum governance standards, and facilitating investments in minerals processing and other downstream industries to position the Philippines as a player in clean energy value chains.

Social and sustainability safeguards

The partnership states as an objective to facilitate “[...] *increased production of processed minerals and expand downstream mineral industries in the Philippines, such as the production of electric vehicle components and information and communications technologies equipment, while improving governance standards in the mining industry.*”²²⁸ While the US aims to support the Philippines in becoming a hub for mineral processing, the partnership does not specify how domestic needs will be prioritized, nor does it outline mechanisms for fair pricing. In addition, although the partnership explicitly highlights the improvement of governance standards and the preservation of the environment as key features, based on available information, it could not be confirmed whether the MoU incorporates international human rights standards to safeguard the rights of workers, local communities, and Indigenous Peoples, as the full text could not be found in public sources.

It is also worth noting that in 2022, the US Trade and Development Agency (USTDA) allocated a USD 1 million grant to Eramen Minerals, a Philippine mining company, to evaluate the technical and economic viability of developing a nickel processing facility at the company's mine site in Zambales Province.²²⁹ The study was due to be completed in May 2024, but no

public information was found regarding its progress.

In July 2025, President Trump and President Marcos Jr. announced a new trade deal in Washington, under which US imports from the Philippines face a 19% tariff, while US exports enter the Philippine market tariff free on many lines.²³⁰ In the Philippines, the agreement's asymmetry has triggered concern among lawmakers and industry leaders.²³¹

3.6. Thailand

3.6.1. Key findings

Thailand has recently strengthened its strategic position in global critical minerals markets. Although its REE reserves are minor and not economically viable, the country has established itself as one of the world's largest REE producers,²³² significantly increasing its relevance in international supply chains. In addition, Thailand has emerged as a potential major player following the discovery of 14.8 Mt of lithium (see section 1.6). Hence, Thailand has been identified as a potential new partner for the US in efforts to diversify and secure critical minerals. Beyond extraction, Thailand has articulated ambitions to develop a domestic REE industry aligned with its broader industrial policy objectives. These developments are closely linked to Thailand's strategy to position itself as a regional hub for EV manufacturing, where access to critical minerals is a key enabler.²³³

3.6.2. Japan

The Japan Bank for International Cooperation (JBIC) signed an MoU with the Export Import Bank of Thailand (EXIM Thailand) to promote trade and investment, including in clean energy, decarbonization, and Mekong region connectivity.²³⁴ While this MoU does not specifically mention critical minerals, expanding financial cooperation could

help underpin investments in mineral supply chains or mining/processing projects later on.

3.6.3. United States

On October 26, 2025, the US and the Kingdom of Thailand signed a “Memorandum of Understanding concerning cooperation to diversify global critical minerals supply chains and promote investments”.²³⁵ The US could benefit by facilitating exports to serve its defense, automotive, and high-tech industries. On the same date, the two countries jointly announced a Framework for an Agreement on Reciprocal Trade.²³⁶

The key terms of the agreement are:

- Thailand will eliminate tariffs on 99% of US goods;
- The US will maintain a 19% reciprocal tariff;
- The US and Thailand will work together to address Thailand's non-tariff barriers that affect bilateral trade; and
- The countries will finalize commitments related to labor rights, environmental protection, intellectual property, and digital trade.

Scope of the MoU on critical minerals

The MoU between the US and Thailand focuses on strengthening cooperation across critical minerals supply chains. Its primary objectives are:

- *“to strengthen cooperation between the two countries on critical minerals supply chains development and expansion;*
- *to promote trade and investment between the two countries in critical mineral resource exploration, extraction, processing and refining, and recycling and recovery;*

- *to encourage investment that supports domestic value addition and processing industries rather than solely exporting raw materials; and*
- *to support the transition to open, efficient, secure, and transparent critical minerals and rare earths markets to improve the strength, security, and prosperity of critical minerals and rare earths supply chains in the United States and Thailand.”²³⁷*

Social and sustainability safeguards

The MoU explicitly mentions technology transfer, capacity building, and training of domestic personnel, while emphasizing domestic value addition and processing. It also explicitly mentions that *“cooperation should prioritize development of domestic processing industries and value chains”*.²³⁸ However, as the MoU has no legal force, it expresses a political intention rather than legally enforceable requirements.

References to international sustainability standards are more general. The MoU mentions adherence to high international standards for extraction, processing, and recycling, but does not cite international sustainability standards. The joint statement for an agreement on reciprocal trade indicates that *“[t]he United States and Thailand will finalize commitments related to protecting internationally recognized labor rights, including by working to amend its law to ensure that workers' rights to freedom of association and collective bargaining are fully protected; and strengthen enforcement of its labor laws, including by addressing violations in sectors with a high-risk for forced labor and child labor.”* Additionally, the statement mentions a commitment from Thailand to *“[...] maintain high levels of environmental protection and to effectively enforce its environmental laws.”²³⁹*

Regarding mechanisms for fair pricing, the MoU does not include any detailed or

enforceable ones. However, it mentions that the *“participants will coordinate to protect their respective domestic critical minerals and rare earths markets on the basis of market-oriented policy and fair-trade practices, by establishing high standard marketplaces in which those who meet those high standards can trade preferentially and within a pricing framework including price floors or similar measures.”*²⁴⁰

Civil society advocates and members of Thailand's parliament have raised concerns²⁴¹ about the MoU, citing a lack of public consultation and environmental and social safeguards to protect communities and biodiversity.²⁴² Critics also argue that the agreement could grant excessive US influence over Thailand's national resources, leaving the country vulnerable amid the US-China trade rivalry. Additionally, there are concerns that the MoU might enable the US to facilitate both legal and illegal mineral imports from Thailand's neighbors, such as Myanmar, without adequately addressing the harmful effects on local communities and ecosystems in those countries.²⁴³

3.7. Summary of key findings

As summarized in Table 7, the research reveals intensifying global competition to secure Southeast Asia's critical mineral supply chains. While Indonesia dominates the landscape due to its massive nickel and cobalt reserves (see section 1.3), Cambodia, the Philippines, and Thailand are increasingly being integrated in a complex web of trade agreements and MoUs. However, while trade agreements create binding rights and obligations under international law, many of these recent partnerships are MoUs, which are not legally binding.

The US has been particularly active in signing mineral partnership agreements across the focus countries. This network of agreements gives the US a degree of

economic and diplomatic influence on the Southeast Asian mainland—in Cambodia and Thailand—alongside its long-standing and deepening security ties with maritime partners such as the Philippines and Indonesia. For the US, these minerals serve a dual strategic purpose: they are positioned as essential to clean energy supply chains while also being explicitly linked, in US policy documents, to national security and defense applications.²⁴⁴

However, this rush for minerals risks creating unbalanced relationships for resource-rich countries. Civil society groups warn that these agreements can perpetuate an extractivist model where Southeast Asian nations serve as low-cost suppliers of raw materials for foreign industrial and military interests, often at the cost of further ecosystem destruction, deforestation, and pollution (see chapter 2).

The assessment of trade agreements and MoUs of selected countries reveals inconsistencies between the rhetoric of “sustainable development” and their actual content. While some reference international standards like the Paris Agreement or the ILO Declaration on Fundamental Principles and Rights at Work, none explicitly mention FPIC for Indigenous Peoples whose lands are targeted for extraction. US agreements with countries like the Philippines or Thailand often omit explicit nods to international human rights and labor standards, and they lack details on enforcement mechanisms. No agreement includes binding provisions for meaningful consultations with CSOs and local communities—a consistent gap across the board.

Across analyzed agreements for Cambodia, Indonesia, the Philippines, and Thailand, key elements of a “just transition” are routinely absent. While many cite promoting local jobs and skills transfer as goals, few require local value content for

tariff benefits. Concrete measures such as local hiring quotas or contributions to community development funds are entirely missing. Only the Indonesia-UK agreement explicitly aims to improve local welfare. In addition, none of the documents prioritizes domestic needs for critical minerals use.

Fair pricing mechanisms are also absent, save for a vague reference to “price floors” in the US-Thailand MoU. These tools are key to avert a race to the bottom in which producers slash environmental and labor standards amid price volatility, leaving

resource-rich nations exposed to market manipulation.

Regionally, ASEAN aims to become a strategic hub via AMDV and AMCAP-IV 2026–2030, positioning minerals, including critical minerals, as an economic pillar. The AMDV explicitly commits to stakeholder engagement, empowering communities and Indigenous Peoples, and sustainable practices per the APSMD. Yet, these remain non-binding frameworks, and their success hinges on national roll out, including regulations, monitoring, and enforcement, across member states.

Table 7 Summary of the assessment of selected trade agreements, MoUs, and cooperation frameworks

Resource-rich ASEAN focus country	Trade partner/agreement	Sustainability safeguards			
		Local benefits clauses	Provisions ensuring domestic needs are prioritized	References to international sustainability standards	Mechanisms for fair pricing
Cambodia	US (2025 Trade Agreement)	Not included	Not included	Partially covered: Prohibition of importation of goods using forced labor, commitment to ILO Declaration on Fundamental Principles and Rights at Work, and effective enforcement of environmental laws	Not included
Indonesia	EU (CEPA)	Covered through ROO requiring “substantial processing” in Indonesia or the EU. However, CEPA’s raw materials chapter curbs Indonesia’s export bans.	Not included	Partially covered: Binding commitments to Paris Climate Agreement and ILO conventions	Not included

Resource-rich ASEAN focus country	Trade partner/ agreement	Sustainability safeguards			
		Local benefits clauses	Provisions ensuring domestic needs are prioritized	References to international sustainability standards	Mechanisms for fair pricing
Indonesia	UK (2024 MoU)	Partially covered: Aims to <i>"generate local employment"</i> , sharing of skills, and improve local welfare, but support is not specified	Not included	Partially covered: <i>"mitigate the potential of environmental and social risks linked to mining activities"</i>	Not included
Indonesia	France (2025 MoU)	Partially covered: Reaffirmed commitment to <i>"strengthening the downstreaming industry"</i>	Not included	Partially covered: <i>"enhancing sustainable mining practices and [...] promotes environmental, social, and governance principles in critical minerals mining and processing"</i>	Not included
Indonesia	US (2025 Trade Agreement)*	Partially covered: Potential for joint investment with sovereign fund to <i>"promote local development"</i> and skill transfer	Not included	Partially covered: Commitment to a <i>"forced labor import ban"</i>	Not included
Indonesia	Australia (2023 MoU)*	Partially covered: Includes promoting a <i>"skills development program"</i>	Not included	Partially covered: Promotion of responsible mining practices	Not included
Indonesia	China (CAFTA / RCEP / BRI)*	Not included	Not included	Not included	Not included

Resource-rich ASEAN focus country	Trade partner/ agreement	Sustainability safeguards			
		Local benefits clauses	Provisions ensuring domestic needs are prioritized	References to international sustainability standards	Mechanisms for fair pricing
Indonesia	Japan (2008 IJEPA)	Covered through a mandated <i>"minimum local value content"</i> in Japan or Indonesia and welcomes <i>"contribution [...] to the development of its community"</i>	Not included	Partially covered: General reference to environmental impacts but lacks explicit references to human rights and labor rights standards	Not included
Indonesia	South Korea (2022-23 MoU / 2020 FTA)	Not included: Only indirect support via <i>"regional value content"</i> requirements for tariffs, but not local	Not included	Partially covered: Reaffirms importance of <i>"voluntarily"</i> incorporating internationally recognized CSR standards	Not included
Philippines	South Korea (2024 Partnership)	Partially covered: Recognizes importance of <i>"job creation"</i> , but lacks explicit benefit clauses	Not included	Partially covered: References Article 6.2 of the Paris Agreement but lacks explicit reference to human rights and labor rights standards	Not included
Philippines	US (2023 MoU)*	Partially covered: Aims to <i>"expand downstream mineral industries"</i> but does not specify how	Not included	Not included	Not included

Resource-rich ASEAN focus country	Trade partner/ agreement	Sustainability safeguards			
		Local benefits clauses	Provisions ensuring domestic needs are prioritized	References to international sustainability standards	Mechanisms for fair pricing
Thailand	US (2025 MoU/ Framework)	Covered: Explicitly mentions technology transfer, capacity building, and training of domestic personnel as well as prioritization of domestic processing industries and value chains as key objectives	Not included	Partially covered: Mentions adherence to “ <i>high international standards</i> ” and protection of workers’ freedom of association and collective bargaining, but lacks explicit references to human rights and labor rights standards	Partially covered: Mentions “ <i>market-oriented policy and fair-trade practice</i> ”, including “ <i>price floors or similar measures</i> ” but does not include detailed or enforceable pricing mechanisms
Multi	CPTPP (2018)	Not included	Not included	Partially covered: Refers to ILO Declaration and “ <i>encourages</i> ” voluntary adoption of CSR principles	Not included
ASEAN	AMDV (2025)/ AMCAP-IV (2026–2030)	Covered: Intent to empower small-scale mining, to help small-scale miners improve their environmental, social, safety, and health performance and contribute to local economies Promote positive engagement with a broad range of stakeholders and empowerment of communities	Not included	Partially covered: Aligns with SDGs and Paris Agreement, reference to APSMD, but does not explicitly cite ILO Declaration or UNDRIP	Not included



4

Beyond extractivism: how to incentivize an alternative way forward

To address environmental and social challenges associated with critical minerals extraction, governments and regulators could adopt several measures to promote a just transition model that minimizes the environmental impacts of mining operations, ensures that benefits are equally shared within local communities by promoting local value addition, implementing mandatory transparency and accountability measures based on international standards, and adopting sustainable finance taxonomies.

4.1. Measures that can be implemented by ASEAN member states, resource-rich countries, and regulators

4.1.1. Human rights due diligence

Human rights due diligence (HRDD) and impact assessments, in line with international standards and norms, are vital to ensuring a just and equitable energy transition.²⁴⁵ Due diligence entails identifying, preventing, mitigating, and accounting for both actual and potential adverse impacts, integrating these findings into decision-making, monitoring responses, and communicating how impacts are addressed.²⁴⁶ This process is continuous, proactive and reactive, enabling businesses to embed responsible conduct in their operations and supply chains.²⁴⁷

Given the context of mining projects, particular attention needs to be paid to the impacts of mining operations on the local communities and Indigenous Peoples. To ensure transparency, accountability, and respect for human rights in supply chains,

it is essential that regulations enshrine the FPIC of Indigenous Peoples and local communities with customary rights in national law, including the “*right to say no*” or to withdraw their consent.²⁴⁸ Where communities were not properly informed at the time of consent, they must have a defined right to reclaim benefits or reverse commitments made under that consent. This would “[...] *minimize impacts and create benefits for indigenous peoples, thereby creating conditions that allow for indigenous peoples’ free, prior and informed consent and decision-making regarding mining development.*”²⁴⁹ In the Philippines, the Indigenous Peoples’ Rights Act of 1997, for instance, provides the legal framework for recognizing and protecting the rights of Indigenous cultural communities and Indigenous Peoples.²⁵⁰

Community engagement for all local communities is also a critical part of ensuring transparency, accountability, and respect for human rights in mining projects where there are potential significant adverse impacts on local communities.²⁵¹

Community engagement should provide clear, straightforward information so

that those affected by the project can participate safely and without fear of retaliation, using established channels for information access and consultation.²⁵² To that end, the following steps should be taken:

- The information should be simple, locally accessible, and provided early.
- Consultation steps, including agendas, attendees, feedback and changes, should be publicly recorded and available.
- Participation in these engagement steps should be safe for all participants, such as human rights defenders, women, persons with disabilities, and marginalized groups.
- Consultation processes should be integrated at all stages of the project, allowing communities to provide input and update their expectations.
- When harm happens, remedies must be straightforward and easily accessible.
- Communities should have the ability to use project-level grievance mechanisms and, if issues remain unresolved, escalate them to authorities and other accountability channels, with transparent response times and detailed case reports.²⁵³

HRDD processes should also ensure that environmental human rights defenders (EHRDs) are considered, given their vital role in the protection of human rights and the environment, but who face many threats (see chapter 2), such as harassment, criminalization, and restrictions on participation, information, and access to justice.²⁵⁴

Recommendations for governments of resource-rich countries and ASEAN

- Establish and enforce mandatory environmental and human rights due diligence (EHRDD) requirements

for companies and financial sector activities, aligned with international sustainability standards, such as the UNGPs and the IFC Performance Standards on Environmental and Social Sustainability.

- Enshrine the FPIC of Indigenous Peoples and local communities with customary rights in national law, including the “right to say no” and a clear process by which communities can withdraw their consent.
- Ensure meaningful community engagement that is inclusive, transparent, and accountable.
- Implement accessible, culturally sensitive, and effective grievance and redress mechanisms.
- Guarantee a safe and enabling environment for environmental, human rights, and anti-corruption defenders, recognizing their essential role in ensuring accountability in the governance of natural resources.

4.1.2. Mandatory environmental and social impact assessments

The UN Guiding Principles on Critical Energy Transition Minerals outline that “*the integrity of the planet, its environment and biodiversity must be safeguarded*” in critical minerals mining projects, through environmental and social impact assessments (ESIAs).²⁵⁵ ESIAs should take a comprehensive approach to environmental risks, including biodiversity, climate change, and transboundary impacts. They should also consider how these risks connect to human rights and promote fair benefit sharing.²⁵⁶ Additionally, they must actively involve affected communities in participatory processes to identify, assess, and manage social impacts.²⁵⁷

In regions such as Southeast Asia, where multiple mining developments are

concentrated in specific geographical areas, and incremental impacts arise from existing or planned mining operations, the risks to the environment and local communities are even higher. In such cases, a cumulative impact assessment (CIA) might be needed to identify the complex interactions of risks and impacts from such mining operations.

This approach aligns with IFC Performance Standard 1: Assessment and Management of Environmental and Social Risks and Impacts (2012):²⁵⁸ *“Assessment and Management of Environmental and Social Risks and Impacts recognizes that because of the increasing significance of systemwide risk factors such as climate change, water availability, decline of species biodiversity, degradation of ecosystem services, and modification of socioeconomic and population dynamics, among others, cumulative impact assessment and management (CIA) is an essential framework for risk management.”*²⁵⁹

A cumulative impact assessment (CIA) is a risk assessment process conducted by the project proponents (i.e., mining and processing companies) or its consultants (i.e., expert bodies specializing in impact assessments) and supervised by the government and regulatory bodies. It considers multiple projects on a spatial and temporal basis to understand the combined, incremental, and cumulative effects, as well as direct and indirect impacts of past, present, and future developments on communities and ecosystems (i.e., valued environmental and social components, or VECs). It involves conducting a desk review that allows the developer, in collaboration with affected communities and other stakeholders, to assess whether its actions could have an impact on the viability or sustainability of the chosen VECs.²⁶⁰

In the mining sector, CIAs focus on the long-term and indirect impacts of

multiple mining projects on ecosystems and communities on a regional scale. This includes impacts such as cumulative water stress, biodiversity loss, displacement of communities, and the unviability of traditional local livelihoods. Not only are mining developments considered, but other operations as well, such as the development of access roads, transmission lines, and other land uses in the region. CIAs are essential in regions where multiple projects are in close proximity, allowing for an understanding of their interaction and the combined detrimental impacts on the environment.

In Australia, CIAs are increasingly required as part of almost every project-specific environmental assessment. The Minerals Council of Australia, the industry representative body of Australia's mining sector, has published an industry guide specific to the mining sector.²⁶¹ In Canada, the Impact Assessment Act outlines the process for assessing the cumulative impacts of major projects within a region.²⁶² In the US, CIAs are required for major federal projects under the National Environmental Policy Act.²⁶³ CIAs are mandatory components of environmental impact assessments in several countries, including Bhutan, Brazil, EU member states, Kenya, and Panama.²⁶⁴ In Southeast Asia, MDBs such as the IFC and ADB increasingly consider the cumulative impacts of financed projects.²⁶⁵

The IFC recommends the following six steps for a CIA:

- Determining spatial and temporal boundaries;
- Identifying VECs in consultation with affected communities and stakeholders, as well as identifying all developments and external natural and social stressors affecting the VECs;
- Determining present conditions of VECs;
- Assessing cumulative impacts;

- Evaluating their significance over VECs' predicted future conditions; and
- Designing and implementing adequate strategies to manage cumulative impacts and appropriate monitoring and supervision mechanisms.

In addition to this six-step approach, it is crucial to engage stakeholders, such as affected communities, as early as possible in the decision-making process and to document the core reasoning behind every decision, while supporting it with technical evidence whenever possible.²⁶⁶ The inclusion of all potentially affected people and communities to ensure their meaningful and informed participation is critical. This involves actively engaging all individuals and communities affected by mining activities at every stage, including planning, implementation, and evaluation. Ensuring meaningful and informed participation requires shifting stakeholders' view of themselves as passive participants to active rights-holders and agents in development processes. To be effective, such participation should be mandated by legislation and integrated in corporate policies.²⁶⁷

A CIA is a prerequisite for the protection of Indigenous livelihoods, culture, and rights, as informed consent is only possible when there is sufficient information on the past, present, and future impacts of a project's land use.²⁶⁸ This issue is especially relevant in mining regions, as additional impacts occur for Indigenous communities, such as loss of access to or destruction of their cultural sites and customary harvest places.²⁶⁹

Whereas several projects have been undertaken through strategic environmental assessment by MDBs in Southeast Asia, such as hydropower planning in Southeast Asia initiated by the ADB,²⁷⁰ their regulatory frameworks fail to incorporate CIA frameworks for critical minerals mining, as mining operations in the region defy conventional regulatory

oversight. For instance, an analysis of recent satellite images has revealed over 2,400 mines operating throughout the area, many of which are deemed illegal and unregulated, operating beyond official government control mechanisms.²⁷¹ Therefore, illegal and unregulated mining is another challenge for conducting CIAs in the region, which needs critical attention to mitigate and prevent environmental and social disasters associated with the mining operations.

Recommendations for governments and/or regulators

- Given the greater cumulative environmental and social impacts of mining operations in Southeast Asia, it is critical that governments and regulatory bodies adopt legislation that enforces the conduct of ESIA. To that end, governments should:
- Make ESIA a mandatory requirement for mining permits and mining expansion projects.
- Require CIAs for mining permits and mining expansion projects in regions with multiple mines or infrastructure developments, especially where vulnerable populations face cumulative air, water, or soil pollution, or other specific challenges.
- Develop and publish guidance documents based on international good practices and standards and allocate financial resources to ensure these documents reach local communities, including documents translated into local languages.
- Ensure that ESIA mandates meaningful, informed, and inclusive participation of all potentially affected individuals and communities throughout the entire life cycle of the project, including planning, implementation, and evaluation.

- Actively monitor the implementation of ESIs in cooperation with affected rights-holders and establish enforcement mechanisms.
- Encourage financial institutions to check that mining companies conduct ESIs as part of their environmental and social risk management processes.

4.1.3. Responsible fiscal policies and benefit-sharing mechanisms

Moving beyond extractivism requires resource-rich countries to implement equitable governance frameworks that

capture fair value from critical minerals extraction, promote the development of the downstream value chain while ensuring benefits reach the local population and affected communities, and support economic stability and social well-being. This is reflected in Principle 4 of the UN Secretary-General's Guiding Principles on Critical Energy Transition Minerals (see box), which states that *"Development must be fostered through benefit sharing, value addition and economic diversification."*

UN Secretary-General's Guiding Principles on Critical Energy Transition Minerals

On April 26, 2024, UN Secretary-General António Guterres launched the Panel on Critical Energy Transition Minerals. As critical mineral extraction accelerates, rising demand is intensifying environmental and social challenges in local communities and countries rich in these resources. The panel aimed to address issues related to equity, transparency, investment, sustainability, and human rights, and to develop a set of common and voluntary principles that would guide the transition and accelerate the transition to renewables.²⁷²

The seven Guiding Principles are:

- Principle 1. Human rights must be at the core of all mineral value chains.
- Principle 2. The integrity of the planet, its environment and biodiversity must be safeguarded.
- Principle 3. Justice and equity must underpin mineral value chains.
- Principle 4. Development must be fostered through benefit sharing, value addition and economic diversification.
- Principle 5. Investments, finance and trade must be responsible and fair.
- Principle 6. Transparency, accountability and anti-corruption measures are necessary to ensure good governance.
- Principle 7. Multilateral and international cooperation must underpin global action and promote peace and security.²⁷³

Critical minerals have significant potential to generate economic benefits for resource-rich countries through

job creation in both the sector and surrounding economies, while providing substantial revenues that can serve

the collective good if invested in social protection, public infrastructure, local community development, or the development of new downstream industries such as EV manufacturing.

However, achieving these outcomes demands carefully designed benefit-sharing mechanisms that ensure resource-rich nations capture fair returns throughout the entire value chain—a commitment notably missing or only vaguely addressed in the rush of trade agreements and MoUs currently being signed with countries like the Philippines and Indonesia, as discussed in chapter 3.

One approach highlighted by the Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development (IGF) is the introduction of a turnover tax.²⁷⁴ Under this mechanism, mining companies would be required to reinvest a defined portion of their turnover locally, targeting public infrastructure (e.g., roads, sanitation) or social utility sectors such as education, healthcare, environmental protection, and social welfare. If companies fail to meet these local investment obligations, the national tax authority would be entitled to collect the equivalent amount in a dedicated fund,

as a “development turnover tax” to be spent in the specified sectors.

The effectiveness of such a mechanism is closely tied to governments’ capacity to ensure transparency in tax collection and allocation, establish robust enforcement mechanisms, and ensure the participation of communities and affected stakeholders, including Indigenous Peoples with customary rights, in spending decisions. The distribution of tax revenues must be equitable and transparent.

Some examples of public expenditures with this tax could be:

- Air quality monitoring and transparency and pollution prevention and control;
- Urban planning measures in mining towns to reduce dust and traffic exposure;
- Primary healthcare facilities and maternal health services;
- Schools and vocational training centers, which also offer retraining programs for post-mining employment opportunities; and
- Biodiversity protection and climate-resilience measures.



An aerial view of the waters near nickel mining areas in Morowali, Central Sulawesi, where nickel extraction has been rapidly expanding. Photo by: Garry Lotulong.

Example of a benefit-sharing mechanism in Burkina Faso

In June 2015, following intensive campaigning by CSOs like Oxfam and the Resource Justice Network (formerly Publish What You Pay), Burkina Faso's transitional authority adopted a new mining code that requires mining companies to contribute 1% of gross revenues to a community development fund, creating the Local Mining Fund for Development (FMDL, its French acronym). The fund aims to ensure that mining revenues are allocated to education, health, and social services. This was a historic step for Burkina Faso, one of Africa's leading gold exporters and among the world's poorest countries.²⁷⁵

In a 2022 report, Oxfam explained that the fund distributed nearly USD 174 million across Burkina Faso's 301 districts, although governance challenges remained. Oxfam and its partners explained that they have piloted Committees of Citizen Oversight (CCOs) in select localities to encourage citizen participation in the administration of the FMDL and improve contributions to local development priorities. More specifically, CCOs are responsible for engaging with local elected officials to promote accountability in the provision of health, education, and sanitation services funded through mining revenues. CCOs also actively encourage citizens, including women and youth, to participate in their development priorities.²⁷⁶

Example of a benefit-sharing mechanism: Norway's sovereign wealth fund

Norway's sovereign wealth fund, the Government Pension Fund Global, was created to turn the country's petroleum revenues into responsible, long-term national wealth. Norway began producing offshore oil after discoveries in 1969, and policymakers decided that only the real return should be spent and that the fund's benefits are to be used during economic downturns and crises.²⁷⁷ The Government Petroleum Fund was established in 1990, with the first transfer in 1996,²⁷⁸ and was designed as an intergenerational savings vehicle to ensure today's resource wealth supports both current needs and future generations.²⁷⁹

The fund is managed by Norges Bank Investment Management under a framework set by the Ministry of Finance and parliament. It invests mainly outside Norway in global equities, bonds, and real estate to spread risk and avoid overheating the Norwegian economy.²⁸⁰ The fund is transparent about its investment universe, exclusion and voting decisions, and advanced responsible investment guidelines.²⁸¹ However, it has faced criticism from NGOs over its 2025 climate voting record at major oil and gas companies.²⁸²

Recommendations for resource-rich countries

- Adopt robust fiscal frameworks to capture fair value from critical minerals across the entire value chain.
- Require mining companies operating within their territory to publicly report, country-by-country on an annual basis, on their revenues; profits before and after tax; number of employees (FTE); payments to governments (including corporate income tax, withholding taxes, royalties, dividends, and license and concession fees); and subsidies and other financial support received from governments (including tax exemptions and deferred payments).
- Introduce benefit-sharing mechanisms, such as a turnover tax, requiring mining companies to reinvest a defined share of revenues locally in sectors and projects that serve the public good, or to contribute to a dedicated public fund whose expenditures are decided jointly with civil society representatives.
- Allocate revenues transparently to priority areas, including but not limited to public infrastructure, healthcare, education and skills training, and environmental protection.
- Explicitly define benefit-sharing provisions in trade agreements and MoUs.

4.1.4. Measures to promote local value addition

Measures mandating or incentivizing domestic processing of minerals

Resource-rich countries can use various policy tools to ensure that critical minerals

contribute to local economic development rather than being exported in raw form. One effective tool is imposing export restrictions on unprocessed minerals, which compels companies to invest in domestic processing infrastructure. For instance, the Indonesian government progressively banned the export of nickel ore, requiring nickel to be processed domestically before export. A similar export ban was adopted for bauxite in June 2023.²⁸³ However, studies have shown that while the nickel export ban has been successful in stimulating local employment, the bauxite ban has not achieved the same outcome.²⁸⁴ The Philippine example (see section 1.5) shows that export bans on critical minerals do not always prove successful.

Beyond export controls, governments can set targets for domestic processing and downstream industry development, signaling to investors that local value addition is a national priority. Licensing and permitting can be conditioned on commitments to value addition, whether through domestic processing facilities or, where more appropriate, through regional partnerships that account for infrastructure constraints, market size, and the volume of raw materials available to make processing facilities economically viable.

To align these industrial ambitions with social and environmental responsibility, licenses should also require compliance with robust ESG standards, including labor rights protection, community consultation, and FPIC for Indigenous Peoples. Such measures ensure that economic gains do not come at the expense of social or environmental harm.

Example of a regional strategy: European Critical Raw Materials Act

The European Critical Raw Materials Act (CRMA), published as Regulation (EU) 2024/1252, entered into force in May 2024 with the aim of strengthening the EU's critical raw materials capacities across all stages of the value chain and reducing dependencies. The Act sets the following benchmarks along the strategic raw materials value chain and for diversifying the EU's supplies:²⁸⁵

- At least 10% of the EU's annual consumption for extraction;
- At least 40% of the EU's annual consumption for processing;
- At least 25% of the EU's annual consumption for recycling; and
- No more than 65% of the EU's annual consumption from a single third country.

Public policy can further encourage local processing through targeted investments and strategic partnerships. Governments, often in collaboration with MDBs, can directly support

infrastructure development or catalyze private-sector investment by offering de-risking instruments such as guarantees, concessional loans, or results-based financing.

Example of MDB investment in critical minerals: IFC and the Appian Fund

In October 2025, Appian Capital Advisory, a UK investment advisory and private capital firm focused on the metals and mining sector, announced the creation of a USD 1 billion investment fund to finance critical minerals projects in emerging markets, with a particular focus on Africa and Latin America. The fund, established in partnership with the International Finance Corporation (IFC), aims to support projects essential to the global energy transition. It will finance mining projects at all stages, from construction to expansion.²⁸⁶ According to the IFC website, it has already committed an initial USD 100 million. The fund will have an opt-out right for IFC policy considerations, including alignment with the IFC Performance Standards (PS), meaning IFC can refuse to invest in a project that does not comply with the PS, even if private investors are willing.²⁸⁷

However, it is important to note that while the PS requires companies to engage with communities, including Indigenous Peoples, and mitigate harms, it does not guarantee direct financial or long-term economic benefits. It is unclear whether such aspects have been negotiated and included in financing agreements with the Appian Fund.

To ensure these investments promote responsible practices throughout the critical minerals value chain, it is essential that both financial institutions and

companies adopt strict environmental and social standards, including meaningful consultation with CSOs throughout the project cycle. Contractual clauses on

benefit-sharing mechanisms and their governance should also be included in financing agreements.

These measures cannot succeed without investment in human capital development. Governments can fund training programs in metallurgy, refining, and manufacturing to build a skilled domestic workforce capable of supporting downstream industries. Policies may also require companies to hire a minimum proportion of local workers, fostering job creation and capacity building. For instance, in 2022, Senegal enacted a Local Content Law for mining that requires extractive companies to prioritize Senegalese firms in procurement and invest in training programs for national talent.²⁸⁸

Together, these measures can create a coherent framework for maximizing local value addition. They can also be integrated in trade agreements or MoUs between governments, or between governments and the private sector, provided legal considerations such as WTO rules are respected. When carefully designed, these policies not only generate economic benefits but also enhance the credibility and sustainability of the country's critical mineral supply chains, attracting long-term investment while ensuring the safeguarding of social and environmental outcomes.

Price floor

The mining sector is highly capital-intensive and requires long-term investments to develop mines, processing facilities, and related infrastructure. Price volatility and market instability can deter such investments, particularly in the early stages of value-chain development. To mitigate these risks, governments may introduce a price floor that guarantees producers of critical minerals a minimum effective price, with public authorities

covering the gap when market prices fall below the threshold.

When carefully designed, a price floor can serve as a tool to support public good objectives, such as the just energy transition, industrial resilience, or security of supply. By stabilizing revenues, it can improve project bankability and reduce financing costs for investments in downstream activities such as refining and processing. In this sense, price floors may help prevent a “race to the bottom” in competitive markets where downward price pressure can incentivize cost-cutting at the expense of implementing robust environmental and human rights standards.

For instance, in Australia, the government has considered introducing price-support mechanisms for critical minerals, including REEs, in response to persistently low world prices that undermine the commercial viability of domestic processing capacity.²⁸⁹ Despite the country's significant geological resources, most processing and refining activities remain concentrated in China, which continues to dominate global supply. Price-based support mechanisms are therefore viewed as a way to enable value addition in producing countries and regions that apply higher environmental and social standards.

Beyond national schemes, similar mechanisms could be implemented at the regional level through joint or coordinated purchasing arrangements. In practice, this could involve public authorities or public-backed entities aggregating demand for critical minerals and entering into long-term offtake agreements within predefined price corridors and with comprehensive sustainability requirements. Applied to critical minerals, these approaches could reduce price volatility, strengthen the negotiating position of buyers, and support investment in local processing and refining capacity.

The RESourceEU Action Plan

In December 2025, the European Commission (EC) adopted the RESourceEU Action Plan to accelerate and amplify its efforts to secure the EU's supply of critical raw materials, including REEs, cobalt, and lithium.²⁹⁰ The initiative aims to provide financing and concrete tools to protect industry from geopolitical and price shocks, promote projects on critical raw materials in Europe and beyond, and partner with other countries to diversify supply chains. According to the EC's press release, RESourceEU will "[...] facilitate the efforts of the companies to aggregate demand, jointly purchase strategic raw materials and secure offtake agreements", and that "work is underway with Member States on a coordinated EU approach to stockpiling critical raw materials, with a pilot scheme set to become operational in early 2026."²⁹¹

To reduce its dependence on the supply of critical raw materials from non-EU countries, the EC also announced that it will mobilize up to EUR 3 billion in 2026 to support projects capable of delivering alternative supplies in the short term, including through de-risking instruments provided in part by the European Investment Bank.

While this plan is part of various proactive measures to secure critical raw materials, EU trade policy has drawn criticism from civil society and sustainability experts. Concerns include a continued focus on extractivism and securing new supplies rather than addressing the EU's overconsumption of resources and the need to reduce demand, potential weaknesses in ESG safeguards,²⁹² and a reliance on voluntary sustainability schemes to evaluate projects.²⁹³

Recommendations for governments of resource-rich countries and ASEAN

- Endorse and commit to implementing the UN Principles to Guide Critical Energy Transition Minerals Towards Equity and Justice.
- Promote downstream industrial development (e.g., processing, manufacturing) and explore ASEAN regional or coordinated approaches, including joint public procurement or long-term offtake agreements, to strengthen negotiating positions and foster investment in regional critical minerals value chains.
- Condition price-based support mechanisms with sustainability goals, ensuring that support mechanisms incentivize adherence to robust environmental and social standards and circularity.
- Define a clear value addition strategy for mineral development based on a national development plan, economic feasibility, market outlook, and rigorous cost-benefit analysis.
- In MoUs and trade agreements, encourage technology transfer and skills development, ensuring that foreign partners contribute to building domestic capabilities in critical minerals value chains.

- Link preferential terms or incentives to value addition, such as tax breaks, reduced royalties, or market access conditional on local investment.

4.1.5. Mandatory transparency and accountability requirements across the critical minerals value chain

A report by the United Nations Interregional Crime and Justice Research Institute (UNICRI) identified the lack of transparency across supply chains as one of the four key patterns of criminality in the critical minerals sector in Southeast Asia.²⁹⁴

The UN Secretary-General's Panel on Critical Energy Transition Minerals' Guiding Principles recommend developing *"[...] traceability, transparency and accountability framework along the entire mineral value chain – from mining to recycling – to strengthen due diligence, facilitate corporate accountability and build a global market for critical energy transition minerals."*²⁹⁵ This includes a framework for disclosures and comprehensive, independently verified due diligence on the mineral sector's ESG performance; tools for collecting, verifying and communicating data to support regulators and market actors to incentivize good performance; and multi-stakeholder dialogue at the national, regional, and global levels to facilitate scrutiny of disclosures, strengthen accountability, and ensure that the information is accessible to all stakeholders.²⁹⁶

To achieve responsible supply chains for critical minerals, it is essential that key government policies and regulations promote transparency and accountability, including the collection and reporting of granular, standardized data to enable benchmarking and track progress within the sector. They must also undertake due diligence and publicly report on risks and mitigation actions, such as the disclosure

of transparent, accessible information, including on environmental and social impacts. Finally, they should support the development of standards and regulations in line with international standards.²⁹⁷

Some relevant international standards frameworks for responsible supply chains in critical minerals that aim to strengthen governance, transparency, and accountability, and could be used by regulators to establish mandatory disclosure requirements, are:²⁹⁸

- GRI 14: Mining Sector,²⁹⁹ addressing the need for consistent, granular, and complete reporting on the mining sector's wide-ranging impacts.
- OECD Due Diligence Guidance for Responsible Supply Chains,³⁰⁰ intended to develop clear, dispute-free supply chains and responsible corporate involvement.
- Extractive Industries Transparency Initiative (EITI) standard for the oil, gas, and mining sectors,³⁰¹ requiring participating countries to provide mandatory disclosure of extractive sector information, such as *"[...] public environmental, social and gender impact assessments, monitoring reports, permits and licenses that are mandated by law or contract, are publicly accessible."*³⁰²
- G20 Critical Minerals Framework,³⁰³ which proposes six interrelated strategic pillars for action, aiming to expand opportunities for developing countries, enhance supply security for all, and embed sustainability at every step of the value chain.

Several national and regional laws have mandatory disclosure requirements, such as conducting risk assessments and publicly disclosing ESIs. In the EU, the CRMA, EU Batteries Regulation, and Corporate Sustainability Due Diligence Directive (CSDDD) introduce due diligence obligations for companies. For instance,

the EU Batteries Regulation requires due diligence policies in line with the “[...] internationally recognized due diligence standards and principles, such as those in the United Nations Guiding Principles on Business and Human Rights, the Ten Principles of the United Nations Global Compact, the United Nations Environment Programme (UNEP) Guidelines for Social Life Cycle Assessment of Products, the International Labour Organisation (ILO) Tripartite Declaration of Principles concerning Multinational Enterprises and Social Policy, the Organisation for Economic Cooperation and Development (OECD) Guidelines for Multinational Enterprises and the OECD Due Diligence Guidance for Responsible Business Conduct.”³⁰⁴ The regulation covers a range of social and environmental issues, including “[...] human rights, human health and safety of persons as well as occupational health and safety, and labour rights, on the one hand, and on the environment, in particular on water use, soil protection, air pollution, climate change and biodiversity, as well as protection of community life, on the other.”³⁰⁵

The International Energy Agency's (IEA) Critical Minerals Policy Tracker provides a snapshot of policies that promote responsible practices, including transparency norms and due diligence obligations. In Southeast Asia, the policy tracker shows, for instance, that the Philippine Mineral Reporting Code requires companies to publish a report confirming compliance with legal, environmental, and social requirements, as well as the results of exploration, royalties, and geological setting, among other details.³⁰⁶ Presidential Regulation No. 26/2010 regarding transparency of national/local extractive industries in Indonesia is the implementation of the Extractive Industries and Transparency Initiative (EITI) standard, mentioned above, which aims to “[...] promote good governance, transparency, sustainable development, and active

*participation of a multi stakeholder group from government, industry, and civil society groups in the management of extractive industries.”*³⁰⁷

Recommendations for governments of resource-rich countries and ASEAN

- Implement the EITI standards and require mining companies to be compliant with EITI reporting requirements.
- Require mining companies operating within their territory to publicly report on their revenues, country-by-country and on an annual basis; profits before and after tax; number of employees (FTE); payments to governments (including corporate income tax, withholding taxes, royalties, dividends, and license and concession fees); and subsidies and other financial support received from governments (including tax exemptions and deferred payments).
- Establish and enforce mandatory disclosure of EHRDD for companies and the financial sector, aligned with international sustainability standards.
- With regard to the implementation of FPIC of Indigenous Peoples and local communities with customary rights, mandate companies to disclose all information materials used to obtain consent, as well as the consent document itself, so that communities can demonstrate in case of legal proceedings what they were and were not informed of.

4.1.6. Sustainable finance taxonomies

Sustainable finance taxonomies are increasingly used by regulators as policy tools to direct capital flows to economic activities that align with environmental and social objectives. Asia has become particularly active in this space, with a

growing number of national and regional taxonomy initiatives. Countries such as China, Kazakhstan, Malaysia, Mongolia, the Philippines, Singapore, South Korea, Sri Lanka, and Thailand, have advanced taxonomy initiatives at various stages of maturity. At the regional level, the ASEAN Taxonomy for Sustainable Finance, with its fourth version published in November 2025, aims to establish a common reference framework for member states.³⁰⁸

So far, most existing taxonomies have focused on sectors such as energy, transport, agriculture, and manufacturing; however, no global taxonomy currently includes a fully developed, dedicated “mining and quarrying” sector with robust technical screening criteria (TSC). As a result, the treatment of critical minerals is often missing or remains fragmented. For example, the ASEAN Taxonomy focuses on environmental objectives and sectoral activities and does not single out “critical minerals” as a stand-alone policy theme. As a result, critical minerals are addressed implicitly through activity-level criteria (e.g., low-carbon manufacturing, clean energy technologies in the context of battery manufacturing).

In theory, taxonomies could help distinguish between mining and processing activities that contribute to a low-carbon transition and those that risk locking in environmental and social harm. However, most Asian sustainable finance taxonomies currently share several structural features that limit their effectiveness, particularly in addressing ESG issues related to critical mineral extraction and processing.

First, most taxonomies are voluntary in nature. They are designed primarily as guidance tools for financial institutions rather than as binding regulatory instruments. While voluntary frameworks can facilitate early adoption and experimentation, they also reduce accountability and open the door to greenwashing practices by allowing

investors to self-label activities as “taxonomy-aligned” or “green” without strong enforcement mechanisms.

Second, social issues are generally weakly integrated. While many taxonomies include references to “social considerations” or “minimum safeguards,” they typically do not incorporate TSC for social performance. TSC are activity-specific, qualitative, or quantitative rules that define what an activity must achieve to be considered aligned with a taxonomy. In the social dimension, their absence means that compliance is often assessed through high-level statements rather than measurable standards. For instance, in the ASEAN Taxonomy, social TSC are missing, despite being crucial for all sectors covered by the taxonomy to guarantee the implementation of strong social safeguards. The taxonomy refers to respect of essential criteria, including social aspects; however, the social aspects mentioned in the third version of the taxonomy do not reference or benchmark essential international standards like the UNGPs, the ILO Declaration on Fundamental Principles and Rights at Work, or the FPIC for Indigenous Peoples.³⁰⁹ Without explicit alignment with these frameworks, the taxonomy provides limited assurance that investments will respect labor rights, community rights, or the rights of Indigenous Peoples, even when activities are labeled as “transition” or “aligned.”

In addition, Asian taxonomies do not explicitly exclude fossil fuels from critical minerals expansion. This is particularly problematic in countries where energy-intensive mining and mineral processing rely heavily on coal-fired power generation, as in several Southeast Asian countries. Continuing to rely on fossil fuel-based energy is incompatible with the Paris Agreement and undermines the climate credibility of “transition-aligned” critical minerals projects.

For instance, in the context of battery manufacturing, a robust taxonomy would require the use of production processes that follow a clearly defined pathway to fossil-free energy. A robust taxonomy

should also encourage the adoption of the circular economy and include minimum recycled content thresholds for batteries.

Example: Indonesian Taxonomy

The second version of the Indonesian Taxonomy focuses on responsible activities to be financed in the energy and critical minerals sectors to decarbonize the Indonesian economy. The taxonomy notably labels critical minerals mining (e.g., nickel for EV batteries) as a transition activity if certain sustainability criteria are met, such as post-mining land rehabilitation, but it does not require the development and audit of decarbonization plans, which strongly undermines its credibility.³¹⁰

Another criticism is that the early retirement of coal-fired power plants that supply energy “for transition purposes”, such as the production of EVs, is categorized as green if the “coal phase-out” happens by 2040 and the plant is not more than 35 years old. The inclusion of energy from coal-fired power plants, which contribute to the most harmful greenhouse gas (GHG) emissions, follows the coal phase-out activity in the ASEAN Taxonomy for Sustainable Finance, but contrasts with other taxonomies and science-based approaches.³¹¹

In addition, the think tank Institute for Essential Services Reform (IESR) highlights that mining and mineral extraction activities that support energy transition industries, such as copper, nickel, and tin, are also included in the “transition” category, while a clear description has not accompanied this labeling to ensure that all mining and quarrying activities consistently support the energy transition.³¹²

Recommendations

Sustainable finance taxonomies in Asia have the potential to become powerful tools for shaping responsible investment in critical minerals. However, most existing taxonomies remain limited in their ability to ensure that critical minerals activities are environmentally sound, socially responsible, and science-based. To address these shortcomings, taxonomies should:

- Move beyond voluntary guidance;
- Incorporate robust social and environmental TSC;
- Explicitly align with international human rights and labor standards;
- Set credible, time-bound decarbonization pathways for mining and processing; and
- Require traceability and public disclosure on the end use of critical minerals.

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