

CEUB
EDUCAÇÃO SUPERIOR
ISSN 2237-1036

REVISTA DE DIREITO INTERNACIONAL
BRAZILIAN JOURNAL OF INTERNATIONAL LAW

The EU Critical Raw Materials Act and Corporate Accountability in ASEAN Critical Minerals Value Chains

O Regulamento Europeu das Matérias-Primas Críticas e a responsabilização empresarial nas cadeias de valor de minerais críticos da ASEAN

Dung Kieu Phuong Ha

Phuc Gia Dao

VOLUME 23 • N. 2 • 2026

doi: 10.5102/rdi.v23i2.10719

The EU Critical Raw Materials Act and Corporate Accountability in ASEAN Critical Minerals Value Chains*

O Regulamento Europeu das Matérias-Primas Críticas e a responsabilização empresarial nas cadeias de valor de minerais críticos da ASEAN

Dung Kieu Phuong Ha**
Phuc Gia Dao***

Abstract

This article examines whether the European Union Critical Raw Materials Act (CRMA) strengthens corporate accountability in ASEAN critical minerals value chains or primarily externalises compliance costs to local suppliers. Using doctrinal and comparative legal analysis, it reads the CRMA alongside EU sustainability instruments and selected ASEAN legal frameworks on mining governance, environmental protection, transparency and traceability. The article argues that the CRMA does not directly harmonise ASEAN law. It combines obligations attached to Strategic Project status and EU market placement with indirect contractual and informational pressures on upstream ASEAN suppliers. These effects can improve accountability only where domestic institutions are able to verify data, enforce environmental safeguards and protect affected communities; otherwise, they may exclude smaller suppliers or shift compliance burdens down the chain. The article's originality lies in analysing how project recognition and product-information rules can support accountability, while distinguishing their legal requirements from broader proposals for transparent criticality assessments. It concludes that ASEAN should develop regional criticality criteria, mine-site and product-level traceability capacity, and mandatory environmental due diligence duties supported by cooperative EU-ASEAN strategic mineral partnerships.

Keywords: Corporate accountability; EU Critical Raw Materials Act (CRMA); Extraterritoriality; Critical minerals value chains; ASEAN; Traceability

Resumo

Este artigo examina se o Regulamento Europeu das Matérias-Primas Críticas (CRMA, na sigla em inglês) fortalece a responsabilização empresarial nas cadeias de valor de minerais críticos da ASEAN ou se transfere sobretudo os custos de conformidade aos fornecedores locais. Por meio de análise jurídi-

* Received on: 15/05/2026
Approved on: 26/10/2026

** Dung Kieu Phuong Ha. Lecturer, Faculty of International Law, Ho Chi Minh City University of Law, Vietnam. Master's degree in Law, University of Pécs, Hungary.

*** Phuc Gia Dao. Lecturer in Law, University of Economics and Law, Vietnam National University Ho Chi Minh City, Vietnam. Doctor of Laws (LL.D.), Nagoya University, Japan.

ca dogmática e comparada, o estudo examina o CRMA em conjunto com instrumentos de sustentabilidade da União Europeia e marcos jurídicos selecionados da ASEAN sobre governança da mineração, proteção ambiental, transparência e rastreabilidade. O artigo sustenta que o CRMA produz efeitos na região sem harmonizar diretamente o direito dos países da ASEAN. O regulamento combina obrigações vinculadas ao reconhecimento de projetos estratégicos e à colocação de materiais ou produtos no mercado da União Europeia com pressões contratuais e informacionais indiretas sobre os fornecedores a montante na ASEAN. Esses efeitos podem fortalecer a responsabilização empresarial quando as instituições nacionais conseguem verificar dados, fazer cumprir as salvaguardas ambientais e proteger as comunidades afetadas. Na ausência dessa capacidade, podem excluir fornecedores de menor porte ou transferir encargos de conformidade a outros elos da cadeia. A contribuição original do artigo consiste em examinar como o reconhecimento de projetos e as regras sobre informações relativas aos produtos podem favorecer a responsabilização empresarial. Para isso, distingue as exigências jurídicas desses mecanismos de propostas mais amplas voltadas à transparência na avaliação da criticidade das matérias-primas. O artigo conclui que a ASEAN deveria desenvolver critérios regionais de criticidade, capacidade de rastreamento nos locais de extração e no nível dos produtos, bem como deveres obrigatórios de diligência ambiental apoiados por parcerias estratégicas entre a União Europeia e a ASEAN no setor mineral.

Palavras-chave: responsabilização empresarial, Regulamento Europeu das Matérias-Primas Críticas (CRMA), extraterritorialidade, cadeias de valor de minerais críticos, ASEAN, rastreabilidade.

1 Introduction

The green and digital transitions are mineral-intensive. Different technologies require different materials: lithium, cobalt and nickel are used in many battery chemistries, while rare-earth elements are important for high-performance permanent magnets.[1] Expanding extraction and processing can nevertheless generate serious environmental harm and human-rights risks. States and companies must therefore secure reliable access to critical raw materials (CRMs) without transferring the social and environmental costs of mineral development to workers, local communities and ecosystems. Corporate accountability provides mechanisms through which companies can be required to explain their conduct and address its adverse impacts.[2] Because extraction, processing and manufacturing cross national borders, regulations adopted in major consuming markets can also influence corporate practices in resource-producing countries.[3] Against this background, the European Union adopted Regulation (EU) 2024/1252 of 11 April 2024, known as the Critical Raw Materials Act (CRMA), to address supply security and sustainability. The Regulation distinguishes critical raw materials by reference to economic importance and supply risk, and strategic raw materials by reference to technological importance, projected demand and constraints on expanding production (Articles 3–4; Annexes I–II). Its 2030 benchmarks concern EU extraction, processing and recycling capacities for strategic raw materials, together with diversification of external supply (Article 5(1)). Strategic Project criteria, circularity measures and phased product-information requirements connect these objectives with corporate conduct.[4] External partnerships remain important because domestic capacity cannot meet all EU demand.[5] The Commission's June 2025

[1] IEA. The Role of Critical Minerals in Clean Energy Transitions. *World Energy Outlook*, 2021. Available at: https://www.iea.org/reports/the-role-of-critical-minerals-in-clean-energy-transitions. Accessed: 29 Apr. 2026.

[2] MORGERA, Elisa. *Corporate Accountability in International Environmental Law*. 2. ed. Oxford: Oxford University Press, 2020. Available at: https://doi.org/10.1093/oso/9780198738046.001.0001. Accessed: 10 May 2026.

[3] MORGERA, Elisa. *Corporate Accountability in International Environmental Law*. 2. ed. Oxford: Oxford University Press, 2020. Available at: https://doi.org/10.1093/oso/9780198738046.001.0001. Accessed: 10 May 2026.

[4] HOOL, Alessandra; HELBIG, Christoph; WIERINK, Gijsbert. Challenges and Opportunities of the European Critical Raw Materials Act. *Mineral Economics,* v. 37, n. 3, p. 661–668, 2024. Available at: https://doi.org/10.1007/s13563-023-00394-y. Accessed: 10 May 2026.

[5] VLASKAMP, Martijn C. Looking for Resource Sovereignty in a Fragmenting Global Order: The EU's Response to Critical Raw Materials Challenges. In: COSTA, Oriol; LECHA, Eduard Soler I; VLASKAMP, Martijn C. (eds.). *EU Foreign Policy in a Fragmenting International Order*. The European Union in International Affairs. Cham: Springer Nature Switzerland, 2025. p. 147–176. Available at: https://doi.org/10.1007/978-3-031-64060-5. Accessed: 10 May 2026.; BUYSSE, K; ESSERS, D. Critical Raw Materials : From Dependency to Open Strategic Autonomy?. *NBB Economic Review*, n. 13, p. 1–34, 2023; HOOL, Alessandra; HELBIG, Christoph; WIERINK, Gijsbert. Challenges and Opportunities of the Eu-

list of Strategic Projects outside the Union included none located in ASEAN.[6] This dated observation does not establish ASEAN's exclusion from future recognition. Rather, the region's mineral endowments, processing capacity and downstream manufacturing make it a relevant setting in which to examine the CRMA's wider effects.

Corporate accountability in mineral value chains concerns the institutional conditions under which enterprises must explain their conduct and may be required to correct or remedy its adverse effects. It extends beyond legal liability, which denotes the consequences attached to conduct under an applicable rule of law. In chains linking extraction and processing with manufacturing and recovery, traceability enables materials and products to be followed across successive stages, while due diligence concerns the identification and management of adverse impacts. These processes can supply information for evaluating corporate conduct, but their contribution to accountability depends on whether that information supports scrutiny and substantive compliance.[7] This distinction is particularly consequential where sustainability-related product-transparency requirements redistribute compliance burdens across countries and firms with unequal capacities to meet them.[8] The cross-border reach of sustainability regulation further raises questions about the distribution of regulatory authority and access to remedy. Debate over the original CSDDD has drawn attention to European regulatory dominance and the possible concentration of litigation in EU courts.[9] Substantive duties may nevertheless coexist with jurisdictional and procedural barriers to effective judicial remedies.[10] These concerns are relevant to the CRMA, whose effects on foreign value chains arise through distinct legal and commercial relationships. Obligations attached to Strategic Project recognition or EU market placement must be distinguished from indirect extraterritorial effects transmitted through contracts and organisational practices. The latter describe the influence of EU requirements on suppliers abroad, without presupposing changes to ASEAN domestic law. The resulting analytical question concerns how these different forms of regulatory influence connect with verification, enforcement and remedy in producer countries.

The article asks how the CRMA may reshape corporate accountability in ASEAN critical minerals value chains, and under what conditions it can improve accountability rather than principally increase compliance costs. Its thesis is that recognition criteria and product-information duties can generate accountability pressures, whose effectiveness depends on domestic verification, enforcement and remedial capacity. Methodologically, it combines doctrinal analysis with a functional comparison of selected ASEAN jurisdictions, examining legislation available as of 22 October 2026. It does not claim an exhaustive regional survey or empirically established causal effects. Indonesia,[11] Myanmar,[12]

ropean Critical Raw Materials Act. *Mineral Economics,* v. 37, n. 3, p. 661–668, 2024. Available at: https://doi.org/10.1007/s13563-023-00394-y. Accessed: 10 May 2026.

6 EUROPEAN COMMISSION. Selected Strategic Projects under CRMA. Available at: https://single-market-economy.ec.europa.eu/sectors/raw-materials/areas-specific-interest/critical-raw-materials/strategic-projects-under-crma/selected-projects_en. Accessed: 6 Apr. 2026.

7 NOLAN, Justine. Hardening soft law: are the emerging corporate social disclosure laws capable of generating substantive compliance with human rights? Revista de Direito Internacional, Brasília, v. 15, n. 2, p. 64–83, 2018. Available at: https://doi.org/10.5102/rdi.v15i2.5355. Accessed: 22 Oct. 2026.

8 DAO, Gia Phuc. From rules of origin to sustainability: evolution of product transparency in international trade. Revista de Direito Internacional, Brasília, v. 22, n. 3, p. 67–91, 2025. Published online: 11 May 2026. Available at: https://doi.org/10.5102/rdi.v22i3.10442. Accessed: 22 Oct. 2026.

9 MONEBHURRUN, Nitish. Should Non-European Union Member States be Cautious about the E.U Corporate Sustainability Due Diligence Directive? Revista de Direito Internacional, Brasília, v. 21, n. 2, p. 12–14, 2024. Available at: https://doi.org/10.5102/rdi.v21i2.9844. Accessed: 22 Oct. 2026.

10 GUERRA, Marcel Vitor de Magalhães e. The normative framework of extraterritorial jurisdiction in international law: from the Lotus paradigm to transnational climate accountability. Revista de Direito Internacional, Brasília, v. 23, n. 1, p. 50–68, 2026. Available at: https://doi.org/10.5102/rdi.v23i1.10578. Accessed: 22 Oct. 2026.

11 Indonesia was the world's largest mined-nickel producer in 2025: USGS estimates production of 2.6 million tonnes out of a global total of 3.9 million tonnes, or approximately 67%. See: UNITED STATES GEOLOGICAL SURVEY. Mineral Commodity Summaries 2026: Nickel. Reston, VA: U.S. Geological Survey, 2026. Available at: https://pubs.usgs.gov/periodicals/mcs2026/mcs2026-nickel.pdf. Accessed: 22 Oct. 2026.

12 The USGS country account for 2020–2021 described Myanmar as the world's third-ranked producer of rare earths, accounting for 13% of production. These figures provide historical context rather than a current production estimate. See: MOON, Ji Won. The Mineral Industry of Burma in 2020–2021. In: *USGS 2020–2021 Minerals Yearbook*. U.S. Department of the Interior, U.S. Geological Survey, 2024.

the Philippines,[13] Thailand[14] and Vietnam[15] are selected for their extraction, reserve or processing roles; Malaysia for rare-earth processing and manufacturing;[16] and Singapore for downstream activities and circular-economy regulation.[17] Brunei,[18] Cambodia,[19] Lao PDR[20] and Timor-Leste[21] provide contextual comparisons. A brief discussion of Brazilian investment in Europe tests the distinction between territorial obligations and effects transmitted through foreign value chains.

2 The EU CRMA and corporate accountability in critical minerals value chains

2.1 From voluntary CSR to binding accountability in EU critical minerals governance

Corporate accountability has evolved from fragmented consumer campaigns and voluntary corporate social responsibility into a broader legal movement requiring transnational corporations to account for their global impacts.[22] Accountability requires a relationship in which corporate conduct can be assessed against standards and consequences can follow.[23] Due diligence, disclosure and access to remedy perform different functions within that relationship. Early EU policy treated corporate responsibility mainly as a voluntary matter. The European Business Network for Social Cohesion, later renamed CSR Europe, was established in 1996, and the Commission's 2001 Green Paper framed CSR as the voluntary integration of social and environmental concerns into business operations.[24] The 2006 Communication reinforced a "best practices" approach without legal sanctions.[25] At this stage, accountability rested pri-

[13] The USGS country account for 2020–2021 identified the Philippines as a leading producer of nickel (second-ranked) and cobalt (fifth-ranked). These rankings refer to that historical reporting period. See: MOON, Ji Won. The Mineral Industry of the Philippines in 2020–2021. In: *USGS 2020–2021 Minerals Yearbook*. U.S. Department of the Interior, U.S. Geological Survey, 2024.

[14] The USGS country account for 2020–2021 described Thailand as the fifth-ranked rare-earth producer, accounting for 1.5% of global production. These figures refer to that historical reporting period. See: MOON, Ji Won. The Mineral Industry of Thailand in 2020–2021. In: *USGS 2020–2021 Minerals Yearbook*. U.S. Department of the Interior, U.S. Geological Survey, 2024.

[15] The USGS country account for 2020–2021 described Vietnam as the second-ranked tungsten producer, accounting for 5.7% of global output and 2.7% of reserves; these are historical figures. See: MOON, Ji Won. The Mineral Industry of Vietnam in 2020–2021. In: *USGS 2020–2021 Minerals Yearbook*. U.S. Department of the Interior, U.S. Geological Survey, 2024. For rare earths, the newer USGS 2026 summary estimates Vietnam's reserves at 3.5 million tonnes of rare-earth-oxide equivalent. See: UNITED STATES GEOLOGICAL SURVEY. Mineral Commodity Summaries 2026: Rare Earths. Reston, VA: U.S. Geological Survey, 2026. Available at: https://pubs.usgs.gov/periodicals/mcs2026/mcs2026-rare-earths.pdf. Accessed: 22 Oct. 2026.

[16] For the 2020–2021 reporting period: Malaysia extracted primarily metallic ores as well as crude petroleum and natural gas and produced a considerable amount of rare-earth oxide (REO) compounds, however mostly from imported rare-earth mineral concentrates. See: CHUNG, Jaewon. The Mineral Industry of Malaysia 2020–2021. In: *USGS 2020–2021 Minerals Yearbook*. U.S. Department of the Interior, U.S. Geological Survey, 2024.

[17] GOCLAWSKA, Joanna Asha; MOON, Ji Won. The Mineral Industry of Singapore in 2020–2021. In: *USGS 2020–2021 Minerals Yearbook*. US Department of the Interior, US Geological Survey, 2024.

[18] For the 2020–2021 reporting period: Hydrocarbons were the leading segment of the country's economy; Other mineral commodities produced in Brunei included cement, sand and gravel, and varieties of stone. See: MOON, Ji Won. The Mineral Industry of Brunei 2020–2021. In: *USGS 2020–2021 Minerals Yearbook*. U.S. Department of the Interior, U.S. Geological Survey, 2024.

[19] For the 2020–2021 reporting period: Cambodia's main mineral commodities included cement, salt, sand and gravel (construction), silica, and stone. See: MOON, Ji Won. The Mineral Industry of Cambodia in 2020–2021. In: *USGS 2020–2021 Minerals Yearbook*. U.S. Department of the Interior, U.S. Geological Survey, 2024.

[20] For the 2020–2021 reporting period: Laos was the second-ranked producer of refined bismuth in the world (accounted for 5.3% of world production). However, such mineral commodities as salts, ores, and mineral fuels accounted for 42% of Laos' total goods exports. See: MOON, Ji Won. The Mineral Industry of Laos 2020–2021. In: *USGS 2020–2021 Minerals Yearbook*. U.S. Department of the Interior, U.S. Geological Survey, 2024.

[21] For the 2020–2021 reporting period: The economy of Timor-Leste was largely dependent on the production of natural gas and crude petroleum, including condensates. See: CHUNG, Jaewon. The Mineral Industry of Timor-Leste 2020–2021. In: *USGS 2020–2021 Minerals Yearbook*. U.S. Department of the Interior, U.S. Geological Survey, 2024.

[22] BROAD, Robin; CAVANAGH, John. The Corporate Accountability Movement: Lessons & Opportunities. *Fletcher Forum of World Affairs,* v. 23, n. 2, p. 151–170. 1999.

[23] BEU, Danielle; BUCKLEY, M. Ronald. The Hypothesized Relationship Between Accountability and Ethical Behavior. *Journal of Business Ethics,* v. 34, n. 1, p. 57–73. 2001. Available at: https://doi.org/10.1023/A:1011957832141. Accessed: 10 May 2026.

[24] EUROPEAN UNION. COM/2001/0366: Green Paper - Promoting a European Framework for Corporate Social Responsibility (2001). Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52001DC0366. Accessed: 29 Apr. 2026.

[25] EUROPEAN COMMISSION. Implementing the partnership for growth and jobs: making Europe a pole of excellence on corporate social responsibility. COM(2006) 136 final. Brussels, 22 Mar. 2006. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52006DC0136. Accessed: 22 Oct. 2026.

marily on market discipline and reputational incentives rather than enforceable obligations. The Environmental Liability Directive (2004/35/EC of 21 April 2004) introduced a stronger liability logic through the polluter-pays principle, making operators responsible for preventing and remedying certain forms of environmental damage. The Mining Waste Directive (2006/21/EC of 15 March 2006) added a mining-specific layer by requiring waste-management plans and financial guarantees for site restoration. These instruments moved EU mining governance beyond voluntary CSR, but they still focused mainly on site-level environmental harm rather than the full transnational value chain.

The 2011–2014 Renewed EU Strategy defined CSR by reference to enterprises' impacts on society.[26] The Non-Financial Reporting Directive (2014/95/EU of 22 October 2014) introduced disclosure duties for large public-interest entities.[27] The Conflict Minerals Regulation (EU) 2017/821 of 17 May 2017 imposes due-diligence duties on Union importers of specified tin, tantalum, tungsten and gold minerals and metals, subject to its scope and thresholds. Many downstream manufacturers remain outside its direct obligations,[28] making importers' leverage over non-EU smelters and refiners important.[29] The SFDR (Regulation (EU) 2019/2088 of 27 November 2019) and Taxonomy Regulation (EU) 2020/852 of 18 June 2020 connect sustainability information with financial decisions,[30] while the CSRD (Directive (EU) 2022/2464 of 14 December 2022) establishes sustainability reporting based on double materiality. This development has not been linear. Directive (EU) 2026/470 of 24 February 2026 narrowed both the CSRD and the CSDDD (Directive (EU) 2024/1760 of 13 June 2024, previously amended by Directive (EU) 2025/794 of 14 April 2025). Under amended CSDDD Article 2, the principal EU-company threshold exceeds 5,000 employees and EUR 1.5 billion in net worldwide turnover; the corresponding non-EU threshold exceeds EUR 1.5 billion in EU turnover. Group and other specific scope rules also apply. Article 37 provides for national implementing measures to apply from 26 July 2029, with Article 16 reporting beginning for financial years starting on or after 1 January 2030. The amendments deleted the climate-transition-plan duty in Article 22 and the harmonised liability conditions in Article 29(1), while preserving national-law liability and full compensation where liability is established. Accordingly, the CRMA should not be analysed on the assumption that the original 2024 due-diligence architecture remains unchanged.

2.2 Corporate accountability under the EU CRMA

The CRMA builds on this evolution but adds a sector-specific logic. Unlike earlier instruments that focused on liability, reporting or conflict minerals, the CRMA combines industrial policy, strategic supply benchmarks,[31] circularity,[32] environmental footprinting and product-information requirements in a single framework.[33] Its distinctive contribution is to connect supply-chain resilience with project-level sustainability evidence and material- or product-specific disclosure. The legal mechanisms nevertheless differ. Promoters of recognised Strategic Projects, including projects outside

[26] EUROPEAN COMMISSION. A renewed EU strategy 2011–14 for Corporate Social Responsibility. COM(2011) 681 final. Brussels, 25 Oct. 2011. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52011DC0681. Accessed: 22 Oct. 2026.

[27] CUOMO, Francesca; GAIA, Silvia; GIRARDONE, Claudia; PISERA, Stefano. The Effects of the EU Non-Financial Reporting Directive on Corporate Social Responsibility. *The European Journal of Finance*, v. 30, n. 7, p. 726–752, May 2024. Available at: https://doi.org/10.1080/1351847X.2022.2113812. Accessed: 10 May 2026.

[28] MACCHI, Chiara. A Glass Half Full: Critical Assessment of EU Regulation 2017/821 on Conflict Minerals. *Journal of Human Rights Practice*, v. 13, n. 2, p. 270–290, July 2021. Available at: https://doi.org/10.1093/jhuman/huab027. Accessed: 10 May 2026.

[29] MACCHI, Chiara. A Glass Half Full: Critical Assessment of EU Regulation 2017/821 on Conflict Minerals. *Journal of Human Rights Practice*, v. 13, n. 2, p. 270–290, July 2021. Available at: https://doi.org/10.1093/jhuman/huab027. Accessed: 10 May 2026.

[30] OCH, Marleen. The EU Taxonomy Regulation and the Prevention of Greenwashing. In: ALEXANDER, Kern; GARGANTINI, Matteo; SIRI, Michele (eds.). The Cambridge Handbook of EU Sustainable Finance: Regulation, Supervision and Governance. Cambridge: Cambridge University Press, 2025. p. 357–380. Available at: https://doi.org/10.1017/9781009483971.017. Accessed: 22 Oct. 2026.

[31] VESA, Seita; HUHTA, Kaisa; SOININEN, Niko. Critical Raw Materials and the Law: Confronting Legal Disruption in the Transition to Sustainability. *Law, Innovation and Technology*, v. 17, n. 2, p. 497–528, 2025. Available at: https://doi.org/10.1080/17579961.2025.2593780. Accessed: 10 May 2026.

[32] HOOL, Alessandra; HELBIG, Christoph; WIERINK, Gijsbert. Challenges and Opportunities of the European Critical Raw Materials Act. *Mineral Economics,* v. 37, n. 3, p. 661–668, 2024. Available at: https://doi.org/10.1007/s13563-023-00394-y. Accessed: 10 May 2026.

[33] VESA, Seita; HUHTA, Kaisa; SOININEN, Niko. Critical Raw Materials and the Law: Confronting Legal Disruption in the Transition to Sustainability. *Law, Innovation and Technology*, v. 17, n. 2, p. 497–528, 2025. Available at: https://doi.org/10.1080/17579961.2025.2593780. Accessed: 10 May 2026.

the Union, are subject to obligations attached to that status. Persons placing covered materials or products on the EU market must comply with the relevant requirements when they become applicable. Other firms in ASEAN may encounter indirect pressures through contracts, buyer specifications and requests for supply-chain information. These mechanisms can influence corporate conduct abroad without harmonising ASEAN mining or environmental law.

Corporate accountability to be recognized as a "Strategic Project"

Strategic Projects are a central mechanism through which the CRMA connects supply security with corporate accountability. Article 6, read with Annex III, establishes criteria for recognising projects as strategic, with differentiated assessment criteria for projects located inside the Union and those located in third countries. All projects must make a meaningful contribution to the security of the Union's supply of strategic raw materials, demonstrate technical feasibility and sufficiently reliable expected production volumes, and meet sustainability criteria covering environmental protection, socially responsible practices, respect for human rights, labour rights and indigenous peoples, and transparent business conduct aimed at preventing corruption and bribery (Article 6(1)(a)–(c)). For projects located in the Union, the assessment also requires cross-border benefits beyond the Member State concerned, including for downstream sectors (Article 6(1)(d)). Annex III recognises the contribution of innovative materials capable of substituting strategic raw materials while achieving an equal or lower environmental footprint (Annex III, point 1(c)). For projects in third countries that are emerging markets or developing economies, the CRMA additionally requires mutual benefit for the Union and the host country through value addition in that country (Article 6(1)(e)). The assessment therefore considers contributions to local or regional value chains, private investment and wider economic or social benefits, rather than the supply of extracted resources alone.[34]

Project promoters must submit a dossier under Article 7, including a business plan, classification under the United Nations Framework Classification for Resources, and an implementation timetable. Under Article 2(17), a project promoter is an undertaking or consortium of undertakings developing a raw material project. They must also provide a public-acceptance plan, an estimate of quality job creation and workforce needs, and a work plan for upskilling, reskilling and inclusive representation. Public-acceptance measures may include recurrent communication with communities and social partners and, where appropriate, mitigation and compensation mechanisms. For extraction projects in third countries or overseas countries and territories, Article 7 further requires a plan to improve affected sites after exploitation, with a view to restoring their prior environmental state while taking account of technical and economic feasibility. The Commission must also obtain the relevant third country's explicit approval before approving the application (Article 7(1) and (8)). These requirements incorporate community engagement and rehabilitation commitments into the recognition process. Administrative streamlining applies to projects inside the Union. Article 9 establishes single points of contact for permit-granting processes, while Article 12 addresses environmental assessments and authorisations. Third-country projects do not benefit from the same EU-internal permitting architecture. Their promoters are instead subject to the applicable recognition and reporting requirements, which can influence project design, financing and buyer expectations without replacing host-state permitting law.

Corporate accountability in "Strategic Project" operations

Article 8 of the CRMA makes the Strategic Project designation subject to continuing reporting and information obligations. Every two years after recognition, the project promoter must report to the Commission on implementation, reasons for relevant delays and a plan to overcome them, and progress in financing, including public financial support. The Commission may request additional information to check continued fulfilment of the recognition criteria, while promoters must notify changes affecting those criteria. Recognition may be withdrawn under Article 7(11) where the criteria are no longer met or materially incorrect application information affected compliance. This reporting cycle supports oversight of projects intended to contribute to the EU's 2030 benchmarks.[35] For projects in third countries, the

[34] HOOL, Alessandra; HELBIG, Christoph; WIERINK, Gijsbert. Challenges and Opportunities of the European Critical Raw Materials Act. *Mineral Economics,* v. 37, n. 3, p. 661–668, 2024. Available at: https://doi.org/10.1007/s13563-023-00394-y. Accessed: 10 May 2026.

[35] HOOL, Alessandra; HELBIG, Christoph; WIERINK, Gijsbert.

same mechanisms can help monitor the sustainability and, where applicable, mutual-benefit commitments underlying recognition. Reporting and the possibility of withdrawal provide accountability mechanisms, but do not themselves establish that the promised benefits have materialised. The Regulation also requires public disclosure. Under Article 8(5), a project promoter must establish and regularly update its corporate website or a dedicated project website with information relevant to the local population, including the project's environmental, social and economic impacts and benefits. The relevant information must be accessible free of charge, without requiring personal information, and in a language or languages easily understood by the local population. Article 8(3)(b) separately requires notification to the Commission of lasting changes in control of the undertakings involved. These requirements can support scrutiny by affected communities and make the project's commitments more visible. Their practical value, however, depends on the quality and accessibility of the information and on opportunities to challenge non-compliance; the website obligation does not guarantee real-time monitoring or effective remedy.

Corporate accountability for sustainable critical raw material supply chains

Chapter 5 of the CRMA develops sustainability measures for critical raw material supply chains through circularity, certification, environmental-footprint declarations, conformity and market-surveillance rules.[36] Articles 27, 28 and 29 are particularly significant because they address recovery from extractive waste and the recyclability and recycled content of permanent magnets. These provisions connect mine-site waste management with downstream product information, but their scope, addressees and application dates differ. Article 27 requires operators subject to waste-management-plan obligations under Directive 2006/21/EC to submit a preliminary economic assessment of the potential recovery of critical raw materials from extractive waste. Operators are exempt where they demonstrate with a high degree of certainty that their waste contains no technically recoverable critical raw materials. Existing operators must submit the study by 24 November 2026; operators of new facilities submit it with their waste management plans. Separately, Member States must establish a public database of relevant closed and abandoned extractive waste facilities, including information on operators, former operators and, where applicable, legal successors. The database supports the identification of recovery opportunities; listing a successor does not itself create a new liability for historical waste or a duty to exploit its remaining resources (Article 27(1)–(4) and (6)–(8)). Article 28 extends the framework to persons placing covered products on the EU market through requirements concerning permanent magnets, including information on their presence, type, composition and removal. Article 29 provides for disclosure on a free-access website of the share of specified materials recovered from post-consumer waste in qualifying permanent magnets. These product obligations are subject to the scope limitations and staged application dates discussed below. Verifiable recycled-content information may reduce misleading sustainability claims, but implementation also depends on the availability of secondary materials and reliable verification systems.[37]

Finally, Article 31 establishes a conditional framework for environmental-footprint declarations. Under Article 31(6), the disclosure obligation applies to critical raw material types for which the Commission has adopted calculation and verification rules pursuant to Article 31(1), following the required necessity, proportionality and impact assessments. It does not apply to critical raw materials incorporated in intermediate or final products. Where the obligation applies, the declaration must include, under Article 31(7), information on the country and region of extraction, processing, refining and recycling, as applicable, and customers must have access to it before being bound by a sales contract under Article 31(11). These provisions can make environmental data a market-access and competitiveness factor for the materials concerned. Suppliers outside the EU may consequently face pressure to quantify environmental impacts, although the adoption of detailed rules must also take account of third-country suppliers'

Challenges and Opportunities of the European Critical Raw Materials Act. *Mineral Economics,* v. 37, n. 3, p. 661–668, 2024. Available at: https://doi.org/10.1007/s13563-023-00394-y. Accessed: 10 May 2026.

[36] PIMENOW, Sergiusz; PIMENOWA, Olena; REMBISZ, Włodzimierz. Circular Economy Pathways for Critical Raw Materials: European Union Policy Instruments, Secondary Supply, and Sustainable Development Outcomes. *Sustainability*, v. 18, n. 2, article 562, 2026. Available at: https://doi.org/10.3390/su18020562. Accessed: 10 May 2026.

[37] BUYSSE, K; ESSERS, D. Critical Raw Materials : From Dependency to Open Strategic Autonomy?. *NBB Economic Review*, n. 13, p. 1–34, 2023.

capacity to comply and avoid unnecessary obstacles to trade.

3 ASEAN corporate accountability baselines and the CRMA's external effects

3.1 Regional and domestic frameworks on corporate accountability in ASEAN critical minerals value chains

Although mining and quarrying accounted for approximately 6.6% of ASEAN's regional GDP in 2022,[38] the region represented roughly 26% of global exports in critical-minerals-related sectors during 2020-2023.[39] ASEAN is therefore not only an extraction region but also an important manufacturing and processing node in global green-transition supply chains. At the same time, mining and mineral processing continue to generate significant environmental and social conflicts, including impacts on water, soil, waste management, workers and local communities.[40] ASEAN mining cooperation has developed through the ASEAN Minerals Cooperation Action Plan (AMCAP), supported by the ASEAN Ministerial Meeting on Minerals and the ASEAN Minerals Trust Fund. AMCAP-IV 2026-2030 prioritises trade and investment facilitation, sustainable critical minerals development, capacity-building and an ASEAN Minerals Information Database.[41] The 2025 ASEAN Principles for Sustainable Minerals Development provide further benchmarks for responsible mineral activities.[42] However, these instruments remain primarily cooperative and programmatic. Participation in the UN Global Compact is voluntary; its participant database therefore cannot establish sector-wide coverage or demonstrate effective enforcement.[43]

Human rights

The ASEAN Guidelines for CSR on Labour, adopted by ASEAN Labour Ministers in 2016, are an important regional soft-law instrument linking corporate responsibility with international labour standards.[44] They promote accountability, transparency, ethical behaviour, respect for human rights and stakeholder engagement through tripartite dialogue.[45] However, they do not establish binding corporate duties backed by regional enforcement or sanctions. Their effectiveness therefore depends on domestic implementation and corporate uptake, which vary considerably across ASEAN.

In the field of labour rights, the Philippines is the only ASEAN member state to have ratified the Safety and Health in Mines Convention, 1995 (No. 176).[46] Section 64 of the Mining Act 1995 (Republic Act No. 7942) prohibits employment below the age of 16 in mining operations and below 18 underground. These provisions must be read alongside Republic Act No. 9231 (2003), amending Republic Act No. 7610, and Department of Labor and Employment Order No. 149 (2016), which prohibit persons below 18 from undertaking hazardous work, including mining and quarrying.[47] Section

[38] ASEAN SECRETARIAT. *ASEAN Statistical Yearbook 2023*. Jakarta: ASEAN Secretariat, December 2023. Available at: https://asean.org/wp-content/uploads/2023/12/ASEAN-Statistical-Yearbook-2023.pdf. Accessed: 11 May 2026.

[39] ASEAN SECRETARIAT; UNITED NATIONS TRADE AND DEVELOPMENT. *ASEAN Investment Report 2025*: *Foreign Direct Investment and Supply Chain Development*. Jakarta: ASEAN Secretariat, October 2025. Available at: https://asean.org/wp-content/uploads/2025/10/ASEAN-Investment-Report-2025.pdf. Accessed: 22 Oct. 2026.

[40] PICHLER, Melanie; BRAD, Alina. Political Ecology and Socio-Ecological Conflicts in Southeast Asia. *Austrian Journal of South-East Asian Studies*, v. 9, n. 1, p. 1–10, June 30, 2016. Available at: https://doi.org/10.14764/10.ASEAS-2016.1-1. Accessed: 10 May 2026.

[41] ASEAN. ASEAN Minerals Cooperation Action Plan (AMCAP-IV) 2026–2030. Available at: https://asean.org/book/asean-minerals-cooperation-action-plan-amcap-iv-2026-2030/. Accessed: 10 Apr. 2026.

[42] ASEAN. ASEAN Principles for Sustainable Minerals Development. 2025. Available at: https://asean.org/book/asean-principles-for-sustainable-minerals-development/. Accessed: 22 Oct. 2026.

[43] UNITED NATIONS GLOBAL COMPACT. Our Participants. Available at: https://unglobalcompact.org/what-is-gc/participants. Accessed: 22 Oct. 2026.

[44] ASEAN. ASEAN Guidelines for Corporate Social Responsibility (CSR) on Labour. Available at: https://asean.org/book/asean-guidelines-for-corporate-social-responsibility-csr-on-labour/. Accessed: 10 Apr. 2026.

[45] ASEAN. ASEAN Guidelines for Corporate Social Responsibility (CSR) on Labour. Available at: https://asean.org/book/asean-guidelines-for-corporate-social-responsibility-csr-on-labour/. Accessed: 10 Apr. 2026.

[46] ILO. Ratifications of C176 - Safety and Health in Mines Convention, 1995 (No. 176). Available at: https://normlex.ilo.org/dyn/nrmlx_en/f?p=1000:11300:::::P11300_INSTRUMENT_SORT:1. Accessed: 10 Apr. 2026.

[47] PHILIPPINE STATISTICS AUTHORITY. Working Children Situation: Technical Notes, p. 3. Available at: https://psa.gov.ph/system/files/iesd/WCS_Technical%20Notes.pdf. Accessed: 22 Oct. 2026.

62 of the Mining Act also requires preference for suitably qualified Filipino workers. Foreign personnel appointed to specified mining-management positions may establish their eligibility through evidence of qualifications and experience, a relevant licensure examination, or the statutory permission and exemption routes; passing an examination is therefore not an invariable requirement. Vietnam's Law on Geology and Minerals No. 54/2024/QH15, as amended by Law No. 147/2025/QH15, incorporates occupational safety and health into mineral exploration requirements under Article 42, while Article 60 specifically regulates occupational safety, health and technical safety in mining.

ASEAN countries adopt different approaches to the participation and interests of communities affected by mineral extraction. In Vietnam, Article 8(1)(a) of the Law on Geology and Minerals 2024, as amended, provides for localities to benefit from the allocation of mining revenues in accordance with state budget law. Article 8(1)(b) also recognises rights to comment on measures concerning safety, security, environmental protection and natural landscapes. Article 59(2)(b) requires mining operators to give priority to local labour in mining projects and related services. In Thailand, Sections 23 and 28 of the Minerals Act, B.E. 2560 (2017), provide for up to two community representatives on each of the national and provincial minerals committees. Section 56 requires a public hearing after a concession application has been publicly displayed for at least 30 days. Where objections remain and the licensing authority cannot reach a decision, a referendum may be organised at the applicant's expense. These procedures provide participation opportunities but do not establish a general requirement for community consent before a mining licence can be granted.

The Philippines places significant obligations on mining operators in relation to local and indigenous communities. Section 16 of the Mining Act 1995 provides that ancestral land may not be opened for mining without the prior consent of the indigenous cultural community concerned. This protection is reinforced by the Indigenous Peoples' Rights Act (Republic Act No. 8371) and the procedures under NCIP Administrative Order No. 3 of 2012. The relevant certification process requires either a Certificate of Non-Overlap or, where indigenous rights are affected, a Certification Precondition following the applicable free, prior and informed consent procedures. Community development obligations are also elaborated in DENR Administrative Order No. 2010-21, the implementing rules of the Mining Act. These include community relations arrangements and development programmes, including the Social Development and Management Programme and the Community Development Programme. Such requirements create formal channels for participation and community investment, although their effectiveness depends on implementation and enforcement.

Environmental impact assessment

Environmental accountability in ASEAN remains nationally driven. AMCAP-IV provides a regional roadmap, but implementation depends on domestic EIA, licensing and enforcement rules. The country examples below illustrate the importance of environmental assessment, mitigation planning and rehabilitation requirements in mining regulation. These instruments support preventive governance, although their effectiveness depends on the quality of appraisal and enforcement.

The Philippines provides an illustration of preventive environmental regulation. Under the Mining Act, particularly Sections 69–71, and DENR Administrative Order No. 2010-21, contractors must establish an Environmental Protection and Enhancement Programme and a Final Mine Rehabilitation and Decommissioning Plan. Covered mining development and operating projects require an Environmental Compliance Certificate under the Philippine Environmental Impact Statement System established by Presidential Decree No. 1586 (1978). The applicable assessment documentation depends on project classification; Section 70 of the Mining Act also distinguishes exploration from later stages of mining. This framework is complemented by legislation on hazardous substances, air quality and water pollution. In Indonesia, Government Regulation No. 22 of 2021 governs environmental protection and management, including environmental assessment and approval. These systems create legal duties to assess and manage impacts, but their contribution to accountability depends on the quality of appraisal, monitoring and enforcement.

Vietnam's Law on Environmental Protection No. 72/2020/QH14, as amended, including by Law No. 146/2025/QH15, classifies investment projects according to environmental risk. Preliminary environmental impact assessment under Article 29 applies to Group I projects. Full environmental impact assessment under

Article 30 applies to Group I and specified Group II projects, subject to statutory exemptions. The two procedures must therefore be distinguished. Classification depends on the criteria in Article 28 and the applicable implementing rules, including project type, scale, resource use and environmentally sensitive factors. Consistent application requires sufficient technical expertise and environmental information; legal classification alone cannot ensure effective appraisal or supervision. In Thailand, the framework under the Enhancement and Conservation of National Environmental Quality Act, B.E. 2535 (1992), as amended in 2018, distinguishes projects requiring a standard EIA from those requiring an assessment of potentially severe environmental and health impacts, commonly described as an EHIA.

Myanmar illustrates the gap between formal law and enforcement capacity. The 2015 Environmental Impact Assessment Procedure requires environmental management plans and public consultation for covered mining activities. Political instability and fragmented oversight can nevertheless obstruct implementation, making reliable traceability and independent verification particularly important in assessing CRMA-related accountability risks.

Mining waste management standards

AMCAP-IV places sustainable minerals development within ASEAN's regional cooperation agenda, while detailed rules on mining waste remain primarily national.[48] Indonesia adopts a regulatory model that emphasises technical and operational duties, including wastewater treatment and hazardous-waste management. MOEF Regulations No. 5/2022 and No. 6/2021 address constructed-wetland wastewater treatment and hazardous-waste management, respectively. MOE Regulations No. 34/2009, No. 9/2006 and No. 202/2004 prescribe wastewater standards for bauxite, nickel, and gold or copper mining, providing a legal basis for monitoring and enforcement. Thailand's Minerals Act likewise links mining licences to environmental management and rehabilitation. Sections 68–70 provide for rehabilitation duties, financial security or insurance, and remedial action where mining causes environmental or public-health impacts. This connects environmental prevention and restoration to the conditions under which mining operations may continue.

In the Philippines, mining waste management falls within the Environmental Protection and Enhancement Programme and its annual implementation programme.[49] Under DENR Administrative Order No. 2010-21, mine closure and rehabilitation are addressed through the Final Mine Rehabilitation and Decommissioning Plan and associated financial mechanisms, including the Mine Rehabilitation Fund and the Final Mine Rehabilitation and Decommissioning Fund. These environmental programmes and funds are distinct from the Social Development and Management Programme, which addresses community development. The distinction matters for accountability because the applicable plans, expenditure obligations and oversight mechanisms serve different purposes.

By emphasising environmental risk management, waste minimisation, reuse and recycling, Vietnam's Law on Environmental Protection supports preventive and circular approaches to environmental governance. The Law on Geology and Minerals separately regulates salvage mining at waste dumps of mines for which a closure decision has been issued. Article 67 covers both selective extraction of remaining minerals and extraction of all minerals at such dumps, including waste soil and rock, subject to licensing, safety and environmental requirements. These provisions can support secondary recovery and resource efficiency, although their environmental benefits depend on how operations are designed and supervised.

Extended producer responsibility (EPR)

Extended Producer Responsibility (EPR) expands environmental accountability beyond mine-site waste by making producers financially or physically responsible for products at the end of their lifecycle. For this article, EPR is relevant because the CRMA links primary extraction with downstream recovery, recycling and "urban mining".[50] Singapore is a useful downstream com-

[48] ASEAN. ASEAN Minerals Cooperation Action Plan (AMCAP-IV) 2026–2030. Available at: https://asean.org/book/asean-minerals-cooperation-action-plan-amcap-iv-2026-2030/. Accessed: 10 Apr. 2026.

[49] PHILIPPINES. Annual Environmental Protection and Enhancement Program (AEPEP) | Region 7. Available at: https://r7.mgb.gov.ph/annual-environmental-protection-and-enhancement-program/. Accessed: 12 May 2026.

[50] DAWSON, Louis; AHUJA, Jyoti. Building a Critical Minerals Circular Economy: Conceptualising New Ways to Maximise the Potential of Extended Producer Responsibility (EPR). *Environmental Law Review*, v. 28, n. 2, p. 72–90, 2026. Available at: https://doi.org/10.1177/14614529261441419. Accessed: 10 May 2026.

parator: although it has no significant mining sector, its Resource Sustainability Act 2019 supports a mandatory EPR system for regulated electrical and electronic waste, alongside the Resource Sustainability (Packaging Reporting) Regulations 2020.[51] These requirements connect corporate responsibility for discarded equipment with the potential recovery of secondary raw materials.

Vietnam has introduced mandatory EPR obligations for specified products and packaging. Under the framework established by the Law on Environmental Protection and Decree No. 08/2022/ND-CP, including its Article 77 implementation schedule, recycling obligations for electrical and electronic products began on 1 January 2025. Decree No. 110/2026/ND-CP, effective from 25 May 2026, specifies in Articles 3–4 the responsibilities of manufacturers and importers placing covered products or packaging on the Vietnamese market, including rules for particular manufacturing and import arrangements and exemptions. These provisions offer a domestic basis for end-of-life accountability and data collection, although they do not themselves establish equivalence with CRMA requirements. The Philippine EPR Act of 2022 (Republic Act No. 11898) addresses plastic packaging and requires obliged enterprises to meet progressively increasing recovery or diversion targets, with penalties for non-compliance. Thailand's development of a broader framework for electrical and electronic waste also illustrates the continuing evolution of EPR in the region.[52]

Transparency

Transparency is necessary but not sufficient for accountability. Information disclosure can support responsibility only when it enables public scrutiny, institutional response and consequences for non-compliance.[53] The relevant question is therefore not simply whether ASEAN frameworks require reporting, but whether disclosed data can trigger oversight, sanctions, investor pressure or community participation. AMCAP-IV reflects a growing regional commitment to responsible minerals development, but its transparency provisions remain aspirational because they promote information sharing without binding disclosure duties or enforcement mechanisms.[54] The ASEAN Corporate Governance Scorecard also promotes disclosure, board responsibility and stakeholder engagement, but operates through soft-law and reputational incentives rather than legal sanctions.[55] At present, only Indonesia, the Philippines and Timor-Leste are EITI implementing countries, which highlights the unevenness of extractive-sector transparency across ASEAN.[56]

The Philippines is strengthening sustainability disclosure through corporate regulation. SEC Memorandum Circular No. 16, Series of 2025 adopts PFRS S1 and PFRS S2 and introduces phased reporting requirements for publicly listed companies (PLCs) and large non-listed entities (LNLs). Under Section 1, mandatory adoption begins with FY 2026 for PSE-listed companies with market capitalisation above PHP 50 billion, FY 2027 for those above PHP 3 billion up to PHP 50 billion, and FY 2028 for the remaining covered listed companies and LNLs with annual revenue above PHP 15 billion. Reporting follows in the subsequent year, subject to the transition arrangements in Section 3. PLCs awaiting their mandatory adoption date continue under the 2019 reporting guidelines. Section 5 provides penalties for PLC non-compliance, while penalties for LNLs are reserved for subsequent issuances. This creates a differentiated transition to more standardised disclosure rather than a single immediately applicable reporting duty across all companies.

Indonesia's mining framework combines revenue transparency, Good Mining Practices and operational reporting. Presidential Regulation No. 26/2010 intro-

[51] SINGAPORE. National Environment Agency. Extended Producer Responsibility (EPR) System for E-Waste Management System. Available at: https://www.nea.gov.sg/our-services/waste-management/3r-programmes-and-resources/e-waste-management/extended-producer-responsibility-%28epr%29-system-for-e-waste-management-system. Accessed: 22 Oct. 2026.

[52] THE NATION. Thailand awaits new law to manage over 400,000 tonnes of e-waste a year. 11 January 2026. Available at: https://www.nationthailand.com/news/policy/40061077. Accessed: 22 Oct. 2026.

[53] MABILLARD, Vincent; ZUMOFEN, Raphael. The Complex Relationship between Transparency and Accountability: A Synthesis and a Contribution to Existing Frameworks. *Public Policy and Administration*, v. 32, n. 2, p. 110–129, 2017. Available at: https://doi.org/10.1177/0952076716653651. Accessed: 10 May 2026.

[54] ASEAN. ASEAN Minerals Cooperation Action Plan (AMCAP-IV) 2026–2030. Available at: https://asean.org/book/asean-minerals-cooperation-action-plan-amcap-iv-2026-2030/. Accessed: 10 Apr. 2026.

[55] HUSNAINI, Wahidatul; BASUKI, Basuki. ASEAN Corporate Governance Scorecard: Sustainability Reporting and Firm Value. *The Journal of Asian Finance, Economics and Business*, v. 7, n. 11, p. 315–326, October 2020. Available at: https://doi.org/10.13106/JAFEB.2020.VOL7.NO11.315. Accessed: 10 May 2026.

[56] EITI. Implementing Countries. Available at: https://eiti.org/countries. Accessed: 12 Apr. 2026.

duced disclosure of revenue flows between extractive companies and government. MEMR Regulation No. 26 of 2018 addresses technical, environmental and safety supervision through Good Mining Practices. The work-plan, budget-approval and reporting regime was subsequently revised by MEMR Regulation No. 17 of 2025, which replaced Regulation No. 10/2023, and was itself amended by Regulation No. 6 of 2026. These instruments provide channels for regulatory oversight, but their contribution to public accountability depends on verification, enforcement and access to usable information.

3.2 Mapping the potential extraterritorial effects of the EU CRMA within ASEAN

The CRMA is designed to reduce EU dependency, but it should not be read as a simple reshoring instrument. Given geological constraints, permitting timelines and industrial capacity, EU supply security will continue to rely on diversified external partnerships.[57] This is consistent with the G7 Five-Point Plan for Critical Minerals Security and the IEA Critical Minerals and Clean Energy Summit, both of which emphasise international collaboration.[58] The CRMA's external success therefore depends on whether strategic projects and partnerships can combine supply security with credible accountability in third countries. ASEAN's own policy trajectory also points toward critical minerals. The ASEAN Minerals Development Vision aims to position ASEAN as a leading mineral-investment region by 2045, with emphasis on critical minerals, digitalisation and decarbonisation.[59] ASEAN hosts a large and diverse mining and mineral-processing ecosystem.[60] The issue is therefore not whether ASEAN matters to EU supply security, but whether CRMA-related standards can catalyse domestic accountability reforms without excluding smaller firms or reproducing unequal value-chain relationships.

How ASEAN is defining criticality

The legal designation of a mineral as "critical" is not merely descriptive. It determines which resources receive policy priority, investment support, monitoring and accountability expectations. International approaches, including the United States' definition in Executive Order 13817 of 20 December 2017, section 2(a), generally combine economic importance, supply vulnerability and strategic use. The key point for this article is that criticality must be based on transparent criteria if it is to function as a governance and accountability tool.

In the recitals of the EU Critical Raw Materials Act (CRMA), the European Parliament and the Council articulate a definition of critical raw materials grounded in two core criteria: high economic importance and high supply risk (which is often due to a strong concentration of production in a limited number of third countries) (recitals 1 and 6–7). Building on this foundation, the CRMA introduces a further conceptual differentiation between "strategic raw materials" and "critical raw materials." Strategic raw materials represent a narrower subset, defined by (i) their systemic role in enabling key policy objectives such as the green and digital transitions, or defence and aerospace capabilities; and by (ii) their designation on forward-looking considerations, such as a projected imbalance between global supply and demand, and structural constraints on increasing production (e.g., long lead times for new extraction or processing projects) (Article 3 and Annex I, Section 2). The category of critical raw materials is broader: It encompasses all strategic raw materials while also including other materials that are highly important for the overall Union economy and face significant risks of supply disruption (Article 4(2)). Importantly, the EU explicitly links such disruption risks to potential distortions of competition and fragmentation of the internal market. This highlights a distinctively integration-oriented rationale: criticality is not only about security of supply but also about preserving the functioning and unity of the EU internal market.

Annexes I and II of the CRMA specify methodologies for identifying strategic and critical raw materials, including criteria for strategic importance and formulas for economic importance and supply risk (Annex I, Section 2; Annex II, Section 2). These methodolo-

[57] BUYSSE, K; ESSERS, D. Critical Raw Materials : From Dependency to Open Strategic Autonomy?. *NBB Economic Review*, n. 13, p. 1–34, 2023.

[58] INTERNATIONAL ENERGY AGENCY. IEA Summit on Critical Minerals and Clean Energy: Key takeaways. 28 Sept. 2023. Available at: https://www.iea.org/news/iea-summit-on-critical-minerals-and-clean-energy-key-takeaways. Accessed: 22 Oct. 2026.

[59] ASEAN. ASEAN Minerals Development Vision. Available at: https://asean.org/book/asean-minerals-development-vision/. Accessed: 10 Apr. 2026.

[60] ASEAN. ASEAN Minerals Cooperation. Available at: https://asean.org/our-communities/economic-community/asean-minerals-cooperation/. Accessed: 22 Oct. 2026.

gies have implications for corporate accountability, but do not themselves impose a general corporate due-diligence or disclosure obligation. Mining investment and production decisions can influence global output, the development of reserves and the time needed to increase supply. Manufacturing choices can affect material demand and the feasibility of substitution, while sourcing and recycling practices can influence import reliance, the concentration of supply and the contribution of secondary materials. However, the assessment combines these market conditions with sectoral economic data and country-level governance indicators; individual companies neither determine all of the variables nor control the legal classification. The article therefore draws an analytical and normative inference: because corporate decisions can affect the conditions measured by criticality assessments, transparent data and scrutiny of those decisions can improve resource governance. This connection should be distinguished from the specific obligations imposed elsewhere in the CRMA.

In selected ASEAN jurisdictions, the approach to "critical" or "strategic" minerals remains fragmented. Vietnam's Decree No. 193/2025/ND-CP, as amended by Decree No. 21/2026/ND-CP, and Indonesia's Ministerial Decision No. 296.K/MB.01/MEM.B/2023 establish national approaches to strategic or critical minerals. Malaysia's New Industrial Master Plan 2030 also identifies priorities for its mineral industry.[61] The national materials examined, including the Philippine policy discussion, do not establish a common ASEAN assessment methodology comparable to the CRMA's formulas.[62] This matters because regional coordination would require agreement on measurable variables, data quality and review procedures. Corporate behaviour affecting supply concentration, demand, recycling and substitution would then need to be analysed against those shared criteria.

Permanent-magnet labelling and recycled-content disclosure

Articles 28 and 29 of the CRMA provide for downstream accountability through labelling, product information and recycled-content disclosure for specified products placed on the EU market, subject to their application dates and exemptions. The obligations attach to the person placing a covered product on that market; this may include an ASEAN operator, depending on its role in the transaction. Compliance pressure can also be transmitted indirectly to component suppliers and upstream processors through contracts and buyer specifications. This is particularly relevant because machinery and appliances were the largest category of EU goods imports from ASEAN in 2025, accounting for EUR 83.6 billion, or 46.5% of the total.[63]

ASEAN has already harmonised certain technical requirements for electrical and electronic equipment through the 2005 ASEAN Harmonized Electrical and Electronic Equipment Regulatory Regime. However, that regime focuses on safety, standards and conformity assessment rather than the recyclability or recycled content of permanent magnets. AMCAP-IV and the APS-MD encourage circularity in the use, reuse, recycling and disposal of products containing metals and minerals, but they do not establish regional marking or labelling rules equivalent to CRMA Articles 28 and 29. Article 28 requires labels indicating whether covered products contain permanent magnets and identifying the specified magnet types. The labelling and data-carrier requirements generally apply two years after the implementing act on label format enters into force; that act is due by 24 November 2026. Article 28(10) provides a separate application date of 24 May 2029 for magnetic resonance imaging devices, motor vehicles and category-L type-approved light means of transport. The data carrier must be linked to a unique product identifier giving access to information on the responsible person, magnet weight, composition and location, and safe removal. If another EU legal act requires a product passport, this information must be included in that passport (Article 28(4)–(7)). For ASEAN firms supplying covered products, compliance will require cooperation between manufacturers, recyclers and EU-facing buyers. These are specific product-information requirements, rather than a general obligation to trace every mineral to its mine of origin.

[61] MALAYSIA. Ministry of Investment, Trade and Industry. Mineral Industry: NIMP 2030 Sectoral Plan. 2023. Available at: https://www.nimp2030.gov.my/nimp2030/modules_resources/bookshelf/e-14-Sectoral_NIMP-Mineral_Industry/e-14-Sectoral_NIMP-Mineral_Industry.pdf. Accessed: 22 Oct. 2026.

[62] FEBRERO, Reeno E. *Critical* moment *for PH's* critical minerals. Philippine Daily Inquirer, 14 Aug. 2025. Republished by *The Philippine Mining Club*, 20 Aug. 2025. Available at: https://www.philippineminingclub.com/critical-moment-for-phs-critical-minerals/. Accessed: 22 Oct. 2026.

[63] EUROPEAN COMMISSION. Directorate-General for Trade and Economic Security. European Union, Trade in goods with ASEAN (Association Of South-East Asian Nations). 20 May 2026, p. 2, 6. Available at: https://webgate.ec.europa.eu/isdb_results/factsheets/region/details_asean-association-of-south-east-asian-nations_en.pdf. Accessed: 22 Oct. 2026.

Under Article 29(1), recycled-content disclosure applies from 24 May 2027 or two years after the relevant delegated act enters into force, whichever is later. It covers products listed in Article 28(1) containing neodymium-iron-boron, samarium-cobalt or aluminium-nickel-cobalt magnets whose combined weight exceeds 0.2 kg. The disclosure concerns the share of specified materials, including neodymium, dysprosium, nickel and cobalt, recovered from post-consumer waste. Article 29(6) provides a longer period for magnetic resonance imaging devices, motor vehicles and category-L type-approved light means of transport: five years after the delegated act enters into force. The provisions also contain product exemptions (Article 29(4)–(7)). These requirements may support circularity, but their implementation may be difficult for ASEAN suppliers where recycled-content verification systems remain underdeveloped. The legal duty of the person placing the covered product on the EU market must be distinguished from the contractual information demands it may transmit to upstream suppliers. Such demands can reach refining, processing and recovery activities outside EU territory without amounting to a general CRMA obligation to trace all minerals to their origin. As of 22 October 2026, the proposed CRMA amendments in COM(2025)946, including changes to permanent-magnet rules and the treatment of pre-consumer waste, remained under legislative consideration; the Parliament's vote on 20 October 2026 did not make those proposals applicable law.[64]

Traceability of covered products and materials

The CRMA's product-information rules point to a broader issue: traceability. Traceability is the ability to identify and follow the history, distribution, location and application of products, parts and materials.[65] In mineral supply chains, it requires continuous information exchange across extraction, processing, transport, manufacturing, distribution and recycling.[66] The challenge is especially acute for CRM-intensive products because materials and components often cross multiple jurisdictions before reaching final assembly. Semiconductor value chains provide one example of this fragmentation,[67] while permanent magnets in EV motors, wind turbines and electrical equipment illustrate the CRMA's more direct regulatory target. OECD and IEA work on traceability identifies four core requirements: technical infrastructure, standardised data collection, supply-chain collaboration, and governance and verification.[68] Other research stresses geopolitical conditions, mineral-specific industrial structures and private governance mechanisms.[69] Applied to ASEAN, these requirements reveal a gap between regional cooperation on mineral information and an operational, interoperable system for tracing covered products and materials. The regional instruments examined here do not establish binding traceability duties equivalent to the CRMA's product-information requirements, while domestic systems differ in their capacity to collect, verify and share reliable data.

Products covered by Article 28(1) include machinery and electrical equipment relevant to ASEAN exports to the EU.[70] These products may contain rare earth elements, cobalt, lithium, nickel and other materials sour-

[64] EUROPEAN COMMISSION. Proposal for a Regulation of the European Parliament and of the Council amending Regulation (EU) 2024/1252. COM(2025) 946 final, 3 Dec. 2025, procedure 2025/0385(COD). Available at: https://data.consilium.europa.eu/doc/document/ST-16460-2025-INIT/en/pdf. Accessed: 22 Oct. 2026.; EUROPEAN PARLIAMENT. Legislative Observatory: Amendments to the Critical Raw Materials Act, procedure 2025/0385(COD), entries for 20 Oct. 2026. Available at: https://oeil.europarl.europa.eu/oeil/en/procedure-file/pdf?reference=2025%2F0385%28COD%29. Accessed: 22 Oct. 2026.

[65] UNITED NATIONS GLOBAL COMPACT; BUSINESS FOR SOCIAL RESPONSIBILITY. A Guide to Traceability: A Practical Approach to Advance Sustainability in Global Supply Chains. 2014. Available at: https://unglobalcompact.org/library/791. Accessed: 22 Oct. 2026.

[66] SCHÖNEICH, Svenja; SAULICH, Christina; MÜLLER, Melanie. Traceability and Foreign Corporate Accountability in Mineral Supply Chains. *Regulation & Governance*, v. 17, p. 954–969, 2023. Available at: https://doi.org/10.1111/rego.12527. Accessed: 10 May 2026.

[67] HARAMBOURE, Antton; LALANNE, Guy; SCHWELLNUS, Cyrille; GUILHOTO, Joaquim. Vulnerabilities in the semiconductor supply chain. *OECD Science, Technology and Industry Working Papers*, n. 2023/05. Paris: OECD Publishing, 2023. Available at: https://doi.org/10.1787/6bed616f-en. Accessed: 22 Oct. 2026.

[68] OECD; INTERNATIONAL ENERGY AGENCY. *The Role of Traceability in Critical Mineral Supply Chains*. OECD Publishing, 2025. Available at: https://doi.org/10.1787/edb0a451-en. Accessed: 22 Apr. 2026.

[69] SCHÖNEICH, Svenja; SAULICH, Christina; MÜLLER, Melanie. Traceability and Foreign Corporate Accountability in Mineral Supply Chains. *Regulation & Governance*, v. 17, p. 954–969, 2023. Available at: https://doi.org/10.1111/rego.12527. Accessed: 10 May 2026.

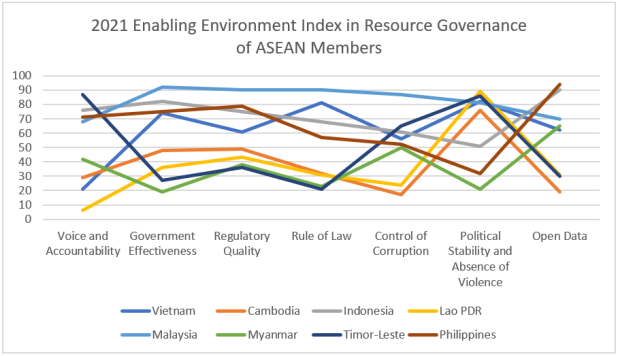
[70] EUROPEAN COMMISSION. Directorate-General for Trade and Economic Security. European Union, Trade in goods with ASEAN (Association Of South-East Asian Nations). 20 May 2026, p. 2, 6. Available at: https://webgate.ec.europa.eu/isdb_results/factsheets/region/details_asean-association-of-south-east-asian-nations_en.pdf. Accessed: 22 Oct. 2026.

ced from different jurisdictions. Their relevance to this analysis depends on the specific permanent-magnet requirements, rather than on the mere presence of any CRM. The CRMA therefore creates a data-dependent accountability challenge. Large firms may adapt through supplier mapping, digital records and third-party audits, including product passports where required by other EU legislation, while smaller firms risk exclusion if they cannot meet buyer-driven traceability requirements.

4 Discussion and Conclusion

This article has argued that the CRMA combines obligations attached to Strategic Project recognition and the placing of covered products on the EU market with indirect pressures transmitted to upstream ASEAN suppliers. It does not harmonise ASEAN mining or environmental law. Its effects depend on the operator's legal role, the provision concerned and the relevant implementation timetable. Project recognition, recycled-content disclosure and product information offer different routes through which EU supply policy may influence corporate conduct. The resulting demands also need to be assessed against wider concerns about resource consumption and the distribution of transition costs.[71] The research question can therefore be answered in qualified terms. The CRMA can support corporate accountability where domestic institutions can verify environmental data, enforce mine-site safeguards, protect workers and communities, and make disclosure usable for oversight and remedy. It may also create compliance burdens where firms lack digital systems, audit capacity or bargaining power in EU-facing supply chains. The doctrinal comparison identifies these conditions and risks; it does not establish that CRMA requirements have already improved environmental or social outcomes in ASEAN.

Figure 1. Enabling-environment subcomponents for selected ASEAN countries in the 2021 Resource Governance Index dataset



Note: 0–29 = Failing; 30–44 = Poor; 45–59 = Weak; 60–74 = Satisfactory; 75–100 = Good. The scores are normalised indicators of the broader institutional environment, derived from the Worldwide Governance Indicators and the Open Data Inventory. They are not current measures of CRMA compliance or comprehensive 2021 assessments of each country's mining sector.

Source: Authors' compilation from the Natural Resource Governance Institute's 2021 enabling-environment dataset.[72]

These historical indicators illustrate differences in the institutional conditions likely to shape implementation of CRMA-related requirements. Malaysia, Indonesia and the Philippines score comparatively well on several regulatory or open-data dimensions, while Cambodia, Lao PDR and Myanmar show weaker results on several dimensions. The figures do not establish that CRMA compliance causes stronger accountability, and they do not capture later legal and political changes. They instead provide contextual support for examining how verification capacity, enforcement and access to information may affect the operation of EU-facing supply-chain requirements.

Brazilian investment in Europe illustrates the same distinctions from an investor's perspective. For a Brazilian-controlled processing, recycling or manufacturing facility located in the EU, CRMA exposure depends on the project, activity and products, rather than Brazilian ownership alone. An EU-located raw-material project

[71] PICKLES, Sophia. An alternative narrative on raw material access. Brussels: *The Greens/EFA* in the European Parliament, 2023. Available at: https://www.greens-efa.eu/files/assets/docs/greens-efa_study_raw_materials.pdf. Accessed: 22 Oct. 2026.

[72] NATURAL RESOURCE GOVERNANCE INSTITUTE. Enabling Environment Calculation: 2021 Resource Governance Index. Dataset. Available at: https://api.resourcegovernanceindex.org/system/documents/documents/000/000/564/original/Enabling_Environment_calculation.xlsx?1646057942=. Accessed: 22 Oct. 2026. BILEK, Pavel; FLEMING, Anna. 2021 Resource Governance Index: Common Questions & Answers. Natural Resource Governance Institute, 1 March 2022. Available at: https://resourcegovernance.org/articles/2021-resource-governance-index-common-questions-answers. Accessed: 22 Oct. 2026.

may seek Strategic Project recognition under CRMA Articles 6–7 and the criteria applicable to Union projects; recognition is not a general prerequisite for ordinary market access. An operator placing covered products containing permanent magnets on the EU market must satisfy the relevant information requirements under CRMA Articles 28–29 when they become applicable. This can increase data and compliance costs while creating opportunities for qualifying projects. Separately, a Brazilian parent or its EU subsidiary may enter the amended CSDDD's scope only if the relevant turnover, employee or group criteria in CSDDD Article 2 are met, with the application dates discussed above. This comparison shows why regulatory effects on foreign investment must be assessed by legal connection and statutory scope, rather than treated as an undifferentiated restriction on investors from the Global South.

The EU is not the only actor seeking closer critical-minerals cooperation with ASEAN. The United States has signed nonbinding memoranda of understanding with Malaysia and Thailand on 26 October 2025 concerning cooperation to diversify global critical minerals supply chains and promote investment. The EU's 65% diversification benchmark, which is not a company-level import cap, similarly creates incentives to develop balanced partnerships beyond existing suppliers. EU-ASEAN mineral cooperation should therefore be framed as a mutual-benefit agenda: the EU needs diversified and sustainable supply, while ASEAN can use external standards and investment to upgrade resource governance and industrial value creation. Because ASEAN is built on sovereignty, consensus and non-interference, regional harmonisation will likely remain gradual. The priority should not be wholesale transplantation of the CRMA, but the strengthening of domestic and regional foundations for accountability: transparent criticality criteria, public mineral data, mine rehabilitation and waste-management duties, enforceable environmental due diligence, and traceability systems that are accessible to smaller firms. If supported by cooperative EU–ASEAN strategic mineral partnerships, CRMA-driven compliance can become an opportunity for institutional upgrading rather than merely a burden shifted onto developing economies.

References

ASEAN SECRETARIAT. *ASEAN Statistical Yearbook 2023*. Jakarta: ASEAN Secretariat, December 2023. Available at: https://asean.org/wp-content/uploads/2023/12/ASEAN-Statistical-Yearbook-2023.pdf. Accessed: 11 May 2026.

ASEAN SECRETARIAT; UNITED NATIONS TRADE AND DEVELOPMENT. *ASEAN Investment Report 2025*: *Foreign Direct Investment and Supply Chain Development*. Jakarta: ASEAN Secretariat, October 2025. Available at: https://asean.org/wp-content/uploads/2025/10/ASEAN-Investment-Report-2025.pdf. Accessed: 22 Oct. 2026.

ASEAN. ASEAN Guidelines for Corporate Social Responsibility (CSR) on Labour. Available at: https://asean.org/book/asean-guidelines-for-corporate-social-responsibility-csr-on-labour/. Accessed: 10 Apr. 2026.

ASEAN. ASEAN Minerals Cooperation Action Plan (AMCAP-IV) 2026–2030. Available at: https://asean.org/book/asean-minerals-cooperation-action-plan-amcap-iv-2026-2030/. Accessed: 10 Apr. 2026.

ASEAN. ASEAN Minerals Cooperation. Available at: https://asean.org/our-communities/economic-community/asean-minerals-cooperation/. Accessed: 22 Oct. 2026.

ASEAN. ASEAN Minerals Development Vision. Available at: https://asean.org/book/asean-minerals-development-vision/. Accessed: 10 Apr. 2026.

ASEAN. ASEAN Principles for Sustainable Minerals Development. 2025. Available at: https://asean.org/book/asean-principles-for-sustainable-minerals-development/. Accessed: 22 Oct. 2026.

BEU, Danielle; BUCKLEY, M. Ronald. The Hypothesized Relationship Between Accountability and Ethical Behavior. *Journal of Business Ethics*, v. 34, n. 1, p. 57–73. 2001. Available at: https://doi.org/10.1023/A:1011957832141. Accessed: 10 May 2026.

BILEK, Pavel; FLEMING, Anna. 2021 Resource Governance Index: Common Questions & Answers. Natural Resource Governance Institute, 1 March 2022. Available at: https://resourcegovernance.org/articles/2021-resource-governance-index-common-questions-answers. Accessed: 22 Oct. 2026.

BROAD, Robin; CAVANAGH, John. The Corporate Accountability Movement: Lessons & Opportunities. *Fletcher Forum of World Affairs*, v. 23, n. 2, p. 151–170. 1999.

BUYSSE, K; ESSERS, D. Critical Raw Materials : From Dependency to Open Strategic Autonomy?. *NBB Economic Review*, n. 13, p. 1–34, 2023.

CHUNG, Jaewon. The Mineral Industry of Malaysia 2020–2021. In: *USGS 2020–2021 Minerals Yearbook*. U.S. Department of the Interior, U.S. Geological Survey, 2024.

CHUNG, Jaewon. The Mineral Industry of Timor-Leste 2020–2021. In: *USGS 2020–2021 Minerals Yearbook*. U.S. Department of the Interior, U.S. Geological Survey, 2024.

CUOMO, Francesca; GAIA, Silvia; GIRARDONE, Claudia; PISERA, Stefano. The Effects of the EU Non-Financial Reporting Directive on Corporate Social Responsibility. *The European Journal of Finance*, v. 30, n. 7, p. 726–752, May 2024. Available at: https://doi.org/10.1080/1351847X.2022.2113812. Accessed: 10 May 2026.

DAO, Gia Phuc. From rules of origin to sustainability: evolution of product transparency in international trade. Revista de Direito Internacional, Brasília, v. 22, n. 3, p. 67–91, 2025. Published online: 11 May 2026. Available at: https://doi.org/10.5102/rdi.v22i3.10442. Accessed: 22 Oct. 2026.

DAWSON, Louis; AHUJA, Jyoti. Building a Critical Minerals Circular Economy: Conceptualising New Ways to Maximise the Potential of Extended Producer Responsibility (EPR). *Environmental Law Review*, v. 28, n. 2, p. 72–90, 2026. Available at: https://doi.org/10.1177/14614529261441419. Accessed: 10 May 2026.

EITI. Implementing Countries. Available at: https://eiti.org/countries. Accessed: 12 Apr. 2026.

EUROPEAN COMMISSION. A renewed EU strategy 2011–14 for Corporate Social Responsibility. COM(2011) 681 final. Brussels, 25 Oct. 2011. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52011DC0681. Accessed: 22 Oct. 2026.

EUROPEAN COMMISSION. Directorate-General for Trade and Economic Security. European Union, Trade in goods with ASEAN (Association Of South-East Asian Nations). 20 May 2026, p. 2, 6. Available at: https://webgate.ec.europa.eu/isdb_results/factsheets/region/details_asean-association-of-south-east-asian-nations_en.pdf. Accessed: 22 Oct. 2026.

EUROPEAN COMMISSION. Implementing the partnership for growth and jobs: making Europe a pole of excellence on corporate social responsibility. COM(2006) 136 final. Brussels, 22 Mar. 2006. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52006DC0136. Accessed: 22 Oct. 2026.

EUROPEAN COMMISSION. Proposal for a Regulation of the European Parliament and of the Council amending Regulation (EU) 2024/1252. COM(2025) 946 final, 3 Dec. 2025. Available at: https://data.consilium.europa.eu/doc/document/ST-16460-2025-INIT/en/pdf. Accessed: 22 Oct. 2026.

EUROPEAN COMMISSION. Selected Strategic Projects under CRMA. Available at: https://single-market-economy.ec.europa.eu/sectors/raw-materials/areas-specific-interest/critical-raw-materials/strategic-projects-under-crma/selected-projects_en. Accessed: 6 Apr. 2026.

EUROPEAN PARLIAMENT. Legislative Observatory: Amendments to the Critical Raw Materials Act. Procedure 2025/0385(COD), entries for 20 Oct. 2026. Available at: https://oeil.europarl.europa.eu/oeil/en/procedure-file/pdf?reference=2025%2F0385%28COD%29. Accessed: 22 Oct. 2026.

EUROPEAN UNION. COM/2001/0366: Green Paper - Promoting a European Framework for Corporate Social Responsibility (2001). Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52001DC0366. Accessed: 29 Apr. 2026.

FEBRERO, Reeno E. Critical moment for PH's critical minerals. Philippine Daily Inquirer, 14 Aug. 2025. Republished by The Philippine Mining Club, 20 Aug. 2025. Available at: https://www.philippineminingclub.com/critical-moment-for-phs-critical-minerals/. Accessed: 22 Oct. 2026.

GOCLAWSKA, Joanna Asha; MOON, Ji Won. The Mineral Industry of Singapore in 2020–2021. In: *USGS 2020–2021 Minerals Yearbook*. US Department of the Interior, US Geological Survey, 2024.

GUERRA, Marcel Vitor de Magalhães e. The normative framework of extraterritorial jurisdiction in international law: from the Lotus paradigm to transnational climate accountability. Revista de Direito Internacional, Brasília, v. 23, n. 1, p. 50–68, 2026. Available at: https://doi.org/10.5102/rdi.v23i1.10578. Accessed: 22 Oct. 2026.

HARAMBOURE, Antton; LALANNE, Guy; SCHWELLNUS, Cyrille; GUILHOTO, Joaquim. Vulnerabilities in the semiconductor supply chain. OECD Science, Technology and *Industry Working Papers*, n. 2023/05. Paris: OECD Publishing, 2023. Available at: https://doi.org/10.1787/6bed616f-en. Accessed: 22 Oct. 2026.

HOOL, Alessandra; HELBIG, Christoph; WIERINK, Gijsbert. Challenges and Opportunities of the European Critical Raw Materials Act. *Mineral Economics*, v. 37, n. 3, p. 661–668, 2024. Available at: https://doi.org/10.1007/s13563-023-00394-y. Accessed: 10 May 2026.

HUSNAINI, Wahidatul; BASUKI, Basuki. ASEAN Corporate Governance Scorecard: Sustainability Reporting and Firm Value. *The Journal of Asian Finance, Economics and Business*, v. 7, n. 11, p. 315–326, October 2020. Available at: https://doi.org/10.13106/JAFEB.2020.VOL7.NO11.315. Accessed: 10 May 2026.

IEA. The Role of Critical Minerals in Clean Energy Transitions. World Energy Outlook, May 2021, https://www.iea.org/reports/the-role-of-critical-minerals-in-clean-energy-transitions. Accessed: 29 Apr. 2026.

ILO. Ratifications of C176 - Safety and Health in Mines Convention, 1995 (No. 176). Available at: https://normlex.ilo.org/dyn/nrmlx_en/f?p=1000:11300:::::P11300_INSTRUMENT_SORT:1. Accessed: 10 Apr. 2026.

INTERNATIONAL ENERGY AGENCY. IEA Summit on Critical Minerals and Clean Energy: Key takeaways. 28 Sept. 2023. Available at: https://www.iea.org/news/iea-summit-on-critical-minerals-and-clean-energy-key-takeaways. Accessed: 22 Oct. 2026.

MABILLARD, Vincent; ZUMOFEN, Raphael. The Complex Relationship between Transparency and Accountability: A Synthesis and a Contribution to Existing Frameworks. *Public Policy and Administration*, v. 32, n. 2, p. 110–129, 2017. Available at: https://doi.org/10.1177/0952076716653651. Accessed: 10 May 2026.

MACCHI, Chiara. A Glass Half Full: Critical Assessment of EU Regulation 2017/821 on Conflict Minerals. *Journal of Human Rights Practice*, v. 13, n. 2, p. 270–290, July 2021. Available at: https://doi.org/10.1093/jhuman/huab027. Accessed: 10 May 2026.

MALAYSIA. Ministry of Investment, Trade and Industry. Mineral Industry: NIMP 2030 Sectoral Plan. 2023. Available at: https://www.nimp2030.gov.my/nimp2030/modules_resources/bookshelf/e-14-Sectoral_NIMP-Mineral_Industry/e-14-Sectoral_NIMP-Mineral_Industry.pdf. Accessed: 22 Oct. 2026.

MONEBHURRUN, Nitish. Should Non-European Union Member States be Cautious about the E.U Corporate Sustainability Due Diligence Directive? Revista de Direito Internacional, Brasília, v. 21, n. 2, p. 12–14, 2024. Available at: https://doi.org/10.5102/rdi.v21i2.9844. Accessed: 22 Oct. 2026.

MOON, Ji Won. The Mineral Industry of Brunei 2020–2021. In: *USGS 2020–2021 Minerals Yearbook*. U.S. Department of the Interior, U.S. Geological Survey, 2024.

MOON, Ji Won. The Mineral Industry of Burma in 2020–2021. In: *USGS 2020–2021 Minerals Yearbook*. US Department of the Interior, US Geological Survey, 2024.

MOON, Ji Won. The Mineral Industry of Cambodia in 2020–2021. In: *USGS 2020–2021 Minerals Yearbook*. U.S. Department of the Interior, U.S. Geological Survey, 2024.

MOON, Ji Won. The Mineral Industry of Laos 2020–2021. In: *USGS 2020–2021 Minerals Yearbook*. U.S. Department of the Interior, U.S. Geological Survey, 2024.

MOON, Ji Won. The Mineral Industry of Thailand 2020–2021. In: *USGS 2020–2021 Minerals Yearbook*. U.S. Department of the Interior, U.S. Geological Survey, 2024.

MOON, Ji Won. The Mineral Industry of the Philippines 2020–2021. In: *USGS 2020–2021 Minerals Yearbook*. U.S. Department of the Interior, U.S. Geological Survey, 2024.

MOON, Ji Won. The Mineral Industry of Vietnam 2020–2021. In: *USGS 2020–2021 Minerals Yearbook*. U.S. Department of the Interior, U.S. Geological Survey, 2024.

MORGERA, Elisa. *Corporate Accountability in International Environmental Law*. 2. ed. Oxford: Oxford Universi-

ty Press, 2020. Available at: https://doi.org/10.1093/oso/9780198738046.001.0001. Accessed: 10 May 2026.

NATURAL RESOURCE GOVERNANCE INSTITUTE. Enabling Environment Calculation: 2021 Resource Governance Index. Dataset. Available at: https://api.resourcegovernanceindex.org/system/documents/documents/000/000/564/original/Enabling_Environment_calculation.xlsx?1646057942=. Accessed: 22 Oct. 2026.

NOLAN, Justine. Hardening soft law: are the emerging corporate social disclosure laws capable of generating substantive compliance with human rights? Revista de Direito Internacional, Brasília, v. 15, n. 2, p. 64–83, 2018. Available at: https://doi.org/10.5102/rdi.v15i2.5355. Accessed: 22 Oct. 2026.

OCH, Marleen. The EU Taxonomy Regulation and the Prevention of Greenwashing. In: ALEXANDER, Kern; GARGANTINI, Matteo; SIRI, Michele (eds.). The Cambridge Handbook of EU Sustainable Finance: Regulation, Supervision and Governance. Cambridge: Cambridge University Press, 2025. p. 357–380. Available at: https://doi.org/10.1017/9781009483971.017. Accessed: 22 Oct. 2026.

OECD; INTERNATIONAL ENERGY AGENCY. *The Role of Traceability in Critical Mineral Supply Chains*. OECD Publishing, 2025. Available at: https://doi.org/10.1787/edb0a451-en. Accessed: 22 Apr. 2026.

PHILIPPINE STATISTICS AUTHORITY. Working Children Situation: Technical Notes, p. 3. Available at: https://psa.gov.ph/system/files/iesd/WCS_Technical%20Notes.pdf. Accessed: 22 Oct. 2026.

PHILIPPINES. Annual Environmental Protection and Enhancement Program (AEPEP) | Region 7. Available at: https://r7.mgb.gov.ph/annual-environmental-protection-and-enhancement-program/. Accessed: 12 May 2026.

PICHLER, Melanie; BRAD, Alina. Political Ecology and Socio-Ecological Conflicts in Southeast Asia. *Austrian Journal of South-East Asian Studies*, v. 9, n. 1, p. 1–10, June 30, 2016. Available at: https://doi.org/10.14764/10.ASEAS-2016.1-1. Accessed: 10 May 2026.

PICKLES, Sophia. An alternative narrative on raw material access. Brussels: *The Greens/EFA* in the European Parliament, 2023. Available at: https://www.greens-efa.eu/files/assets/docs/greensefa_study_raw_materials.pdf. Accessed: 22 Oct. 2026.

PIMENOW, Sergiusz; PIMENOWA, Olena; REMBISZ, Włodzimierz. Circular Economy Pathways for Critical Raw Materials: European Union Policy Instruments, Secondary Supply, and Sustainable Development Outcomes. *Sustainability*, v. 18, n. 2, article 562, 2026. Available at: https://doi.org/10.3390/su18020562. Accessed: 10 May 2026.

SCHÖNEICH, Svenja; SAULICH, Christina; MÜLLER, Melanie. Traceability and Foreign Corporate Accountability in Mineral Supply Chains. *Regulation & Governance*, v. 17, p. 954–969, 2023. Available at: https://doi.org/10.1111/rego.12527. Accessed: 10 May 2026.

SINGAPORE. National Environment Agency. Extended Producer Responsibility (EPR) System for E-Waste Management System. Available at: https://www.nea.gov.sg/our-services/waste-management/3r-programmes-and-resources/e-waste-management/extended-producer-responsibility-%28epr%29-system-for-e-waste-management-system. Accessed: 22 Oct. 2026.

THE NATION. Thailand awaits new law to manage over 400,000 tonnes of e-waste a year. 11 January 2026. Available at: https://www.nationthailand.com/news/policy/40061077. Accessed: 22 Oct. 2026.

UNITED NATIONS GLOBAL COMPACT. Our Participants. Available at: https://unglobalcompact.org/what-is-gc/participants. Accessed: 22 Oct. 2026.

UNITED NATIONS GLOBAL COMPACT; BUSINESS FOR SOCIAL RESPONSIBILITY. *A Guide to Traceability: A Practical Approach to Advance* Sustainability *in Global Supply Chains*. 2014. Available at: https://unglobalcompact.org/library/791. Accessed: 22 Oct. 2026.

UNITED STATES GEOLOGICAL SURVEY. Mineral Commodity Summaries 2026: Nickel. Reston, VA: U.S. Geological Survey, 2026. Available at: https://pubs.usgs.gov/periodicals/mcs2026/mcs2026-nickel.pdf. Accessed: 22 Oct. 2026.

UNITED STATES GEOLOGICAL SURVEY. Mineral Commodity Summaries 2026: Rare Earths. Reston, VA: U.S. Geological Survey, 2026. Available at: https://pubs.usgs.gov/periodicals/mcs2026/mcs2026-rare-earths.pdf. Accessed: 22 Oct. 2026.

VESA, Seita; HUHTA, Kaisa; SOININEN, Niko. Critical Raw Materials and the Law: Confronting Legal Disruption in the Transition to Sustainability. *Law, Innovation and Technology*, v. 17, n. 2, p. 497–528, 2025. Available at: https://doi.org/10.1080/17579961.2025.2593780. Accessed: 10 May 2026.

VLASKAMP, Martijn C. Looking for Resource Sovereignty in a Fragmenting Global Order: The EU's Response to Critical Raw Materials Challenges. In: COSTA, Oriol; LECHA, Eduard Soler I; VLASKAMP, Martijn C. (eds.). *EU Foreign Policy in a Fragmenting International Order*. The European Union in International Affairs. Cham: Springer Nature Switzerland, 2025. p. 147–176. Available at: https://doi.org/10.1007/978-3-031-64060-5. Accessed: 10 May 2026.