

Critical minerals in Africa: local value creation and trade integration

SEI report
September 2026

Sara K. Phillips¹
Miquel Muñoz Cabré¹
Patricia Wild²
Diala Hawila²
Gondia Sokhna Seck²
Abdullah Fahad²

¹ Stockholm Environment Institute

² International Renewable Energy Agency



Published by

Stockholm Environment Institute
Visiting address: Textilgatan 43
Post and deliveries: Virkesvägen 1A
120 30 Stockholm, Sweden
Tel: +46 8 30 80 44
www.sei.org

Author contact

Miquel Muñoz Cabré
miquel.munozcabre@sei.org

Editing

Lynsi Burton

Layout

Tyler Kemp-Benedict

Media contact

Lynsi Burton
lynsi.burton@sei.org

Acknowledgements

IRENA gratefully acknowledges the financial support provided by the European Commission for the research and analytical work that formed the basis of this report.

Cover photo

Copper plates loaded on a transport truck, Chingola, Zambia. Daniel Duma / SEI

Copyright

Copyright © 2026 Stockholm Environment Institute and International Renewable Energy Agency. This work is licensed under Creative Commons Attribution 4.0 International.

To view a copy of the licence, visit creativecommons.org/licenses/by/4.0

Unless otherwise stated, material in this publication may be freely used, shared, copied, reproduced, printed and/or stored, provided that appropriate acknowledgement is given of SEI and IRENA as the source and copyright holder. Material in this publication that is attributed to third parties may be subject to separate terms of use and restrictions, and appropriate permissions from these third parties may need to be secured before any use of such material.

Disclaimer

This publication and the material herein are provided “as is”. All reasonable precautions have been taken by SEI and IRENA to verify the reliability of the material in this publication. However, neither SEI, IRENA nor any of its officials, agents, data or other third-party content providers provides a warranty of any kind, either expressed or implied, and they accept no responsibility or liability for any consequence of use of the publication or material herein.

The information contained herein does not necessarily represent the views of all of SEI or Members of IRENA. The mention of specific companies or certain projects or products does not imply that they are endorsed or recommended by SEI or IRENA in preference to others of a similar nature that are not mentioned. The designations employed and the presentation of material herein do not imply the expression of any opinion on the part of SEI or IRENA concerning the legal status of any region, country, territory, city or area or of its authorities, or concerning the delimitation of frontiers or boundaries.

DOI: <https://doi.org/10.51414/sei2026.039>



Stockholm Environment Institute is an international non-profit research institute that tackles climate, environment and sustainable development challenges.

We empower partners to meet these challenges through cutting-edge research, knowledge, tools and capacity building. Through SEI's HQ and seven centres around the world, we engage with policy, practice and development action for a sustainable, prosperous future for all.

Contents

Summary	4
1. Introduction and context	6
1.1 Continental context	8
2. Defining critical materials	10
2.1 Africa's strategic mineral resource policy frameworks	11
3. Southern Africa: South Africa and Botswana	12
3.1 Regional overview	12
3.2 South Africa	13
3.3 Botswana	14
4. Western Africa: Nigeria and Ghana	15
4.1 Regional overview	15
4.2 Nigeria	15
4.3 Ghana	17
5. Northern Africa: Morocco	18
5.1 Regional overview	18
5.2 Morocco	19
6. Eastern Africa: Tanzania	20
6.1 Regional overview	20
6.2 Tanzania	21
7. Central Africa: Democratic Republic of the Congo	22
7.1 Regional overview	22
7.2 Democratic Republic of the Congo	22
8. Understanding implementation outcomes and challenges	24
8.1 Achievement highlights	24
8.2 Barriers to effective implementation	24
9. Conclusions	26
References	27

Summary

Africa's energy transition is both a necessity and an opportunity. The continent faces persistent challenges in energy access and climate vulnerability, while also holding significant reserves of critical materials essential for renewable energy technologies, including battery and grid-related minerals and metals. How these endowments translate into broad-based development outcomes is shaped, in part, by the degree to which mineral extraction activities are linked to local value creation.

Local value creation emphasizes a focus on employment and skills development, local procurement, beneficiation (used interchangeably with the term “mineral processing” throughout this report), economic diversification and community benefits, among other priorities. When supported by robust environmental and social governance, such efforts promise to strengthen domestic industrial development, enhance resilience in critical materials supply chains and position African countries to capture greater value from the global energy transition.

This report assesses the role of policy frameworks at the continental, regional and national levels in advancing local value creation in critical materials supply chains. The analysis is structured across three tiers: first, continental level frameworks, including Africa's Green Minerals Strategy (AGMS), the Africa Mining Vision (AMV) and the African Continental Free Trade Area (AfCFTA); second, regional dynamics, with attention to the role of regional economic communities; and third, national level snapshots that illustrate how policies translate into practice across governance, economic, social and environmental dimensions.

A central theme of the analysis is that while continental strategies and free trade ambitions are well articulated, intra-African trade and regional integration in critical materials remain limited. Realizing this potential will require deliberate policy design (much of which has already begun) and implementation approaches that more effectively link mineral extraction to value creation and trade integration, particularly through the operationalization of the AfCFTA.

Key messages

- Policy frameworks increasingly emphasize local value creation. Across regions, national reforms now frequently embed mineral processing, local content and community benefit frameworks into mining governance, reflecting a policy-oriented pivot toward strengthening domestic and regional economic linkages in resource-based development.
 - The African Continental Free Trade Area (AfCFTA) represents a central integration framework, though implementation remains a key challenge. The AfCFTA has the potential to support greater legal harmonization and reduce barriers to intra-African trade, conditions necessary to enable cross-border value chains; however, progress remains constrained by fragmented policy environments and uneven institutional coordination.
 - Overlapping trade arrangements present challenges for policy coherence. Multiple memberships in regional economic communities, each with distinct tariff regimes and rules of origin, may complicate the development of integrated critical materials value chains and the implementation of cross-border supply chain policies.
 - Implementation gaps are a common constraint across jurisdictions. Infrastructure bottlenecks, alongside limitations in environmental enforcement capacity, social impact monitoring and delays in operationalizing community benefit requirements, may contribute to widening the gap between policy ambitions and on-the-ground outcomes.
 - Country experiences illustrate diverse pathways to value creation. While some policy frameworks emphasize links between critical minerals and broader industrial strategies, others pursue more incremental pathways to mineral processing within existing governance arrangements.
 - The gap between policy ambition and implementation remains a defining feature. Africa's mineral endowments, continental policy frameworks and expanding set of national reforms provide an important foundation for advancing local value creation. The extent to which these elements translate into sustained development outcomes will depend on how policy coherence, infrastructure constraints and institutional capacity are addressed in practice.
-

1. Introduction and context

African states face challenges in energy access, climate vulnerability and sustainable development, while simultaneously occupying a central position in the global energy transition, holding some of the world's largest reserves of critical minerals. Among these minerals are the platinum group metals, cobalt, manganese and rare earth elements, which are central to solar, wind and battery storage technologies, for example. Harnessing these resources in ways that foster local economic transformation and equitable growth is pivotal for achieving Africa's sustainable development goals and the objectives of the African Union's (AU) Agenda 2063 (AU, 2015).

Realizing the potential benefits of the global energy transition is not guaranteed by resource endowments or market dynamics alone. Rather, it depends on deliberate and coordinated policy choices, made at national, regional and international levels. As the International Renewable Energy Agency (IRENA) has highlighted, fostering a just energy transition "requires the equitable distribution of benefits and burdens, grounded in inclusive processes and decision making," alongside a commitment "to addressing the challenges experienced by affected and marginalised groups as well as preventing and repairing harm that may occur during the transition" (IRENA, 2026). These considerations are increasingly relevant to the governance of critical materials in Africa, as policy frameworks interact with broader economic and institutional dynamics to shape how mineral wealth translates to local value creation, industrial development and integration into global trade networks. The policy design governing extraction, processing, trade and investment will therefore play a decisive role in determining whether Africa's resource potential supports diversified economic transformation and inclusive development, or whether it reinforces existing patterns of unequal participation in global value chains.

This report assesses the role of policy frameworks at the continental, regional and national levels in fostering local value creation in critical materials supply chains. In this context, local value creation is an economic strategy and pathway to structural empowerment, supporting African ownership, agency and resilience in the global energy transition. The report adopts a policy-focused scoping approach to examine how local value creation is reflected in critical materials governance across African jurisdictions.

The analysis is structured across three tiers: (1) continental level frameworks; (2) regional dynamics, with attention to African regional economic communities; and (3) national level profiles, illustrating how policies translate into practice. At the national level, country profiles are structured around four dimensions:

- governance (e.g. policy coherence, institutional capacity and transparency measures);
- economic (e.g. strategies for mineral processing, industrial linkages, local content¹ and trade);

¹ For the purposes of this report, local content can be understood as "the extent to which the output of the extractive industry generates further benefits to the economy beyond the direct contribution to the [GDP] and government revenues, through its linkage to other domestic production sectors", including domestically sourced goods and services and local employment (Oyewole, 2018, p. 1).

- social (e.g. provisions related to communities, equity, participation and benefit-sharing); and
- environmental (e.g. sustainability measures, impact assessment and resource stewardship).

These dimensions provide a common analytical lens for examining policy approaches in diverse contexts, while allowing reflection on country- and region-specific priorities. The approach uses textual policy analysis, secondary research, and contextual inquiry to highlight policy trends, identify implementation challenges, and distil lessons for strengthening local value creation in Africa's critical materials sector. The country-level analyses are illustrative in nature, intended to highlight patterns, variations and implementation challenges across a range of settings, rather than providing a formal comparative assessment or evaluating relative performance. The analysis also examines whether policies contribute to building resilient local value chains, strengthening institutional capacity, and aligning resource development with broader sectoral goals of transparency, accountability and sustainability.

The selection of country cases reflects a scoping exercise undertaken in consultation with IRENA. We identified a first set of countries based on policy relevance, regional diversity and data availability, and refined the selection to reflect analytical relevance and emerging areas of interest within the energy transition. Subject to future funding and analytical scope, subsequent studies could expand country coverage within each region and broaden the assessment parameters presented herein.

As described above, the report is organized across three analytical levels. Following this introduction, Section 2 outlines the definitions and approach used in the assessment, including additional policy considerations. Sections 3 to 7 focus on a specific African region, including one to two country-level snapshots. Each of these sections examines the regional and national level policy frameworks relevant to critical materials and local value creation, including how these policy instruments interface with continent-driven trade reforms. Section 8 then synthesizes the various implementation dynamics, focusing on implications for advancing local value creation and regional integration in Africa's critical materials sector.

A central theme underlying this report is that while free trade agreements and continental strategies exist, the potential of intra-African trade in critical materials remains largely unrealized. Unlocking this potential requires policies that deliberately link mineral extraction to regional value creation and integration. This report highlights both successful experiences and barriers to implementation, and provides actionable insights for policymakers, regional institutions and development partners to strengthen the role of critical materials in Africa's just and sustainable energy transition.

Table 1. Illustrative policy approaches across selected countries

Region and country case(s)	Local value creation policy orientation	Illustrative policy design	Implementation constraints	Trade integration implications
Southern Africa South Africa Botswana	Emphasis on linking mineral extraction to industrial development and downstream processing.	Industrial policy alignment with critical minerals, processing (beneficiation) requirements, and long-term partnership models in selected sectors.	Energy and transport infrastructure constraints, uneven enforcement capacity, skills and technology gaps.	Regional integration frameworks exist, but fragmented implementation limits cross-border value chains.
Western Africa Nigeria Ghana	Growing focus on domestic processing, local content and community benefit mechanisms.	National regulations requiring local processing plans, community development agreement provisions and green minerals policy initiatives.	Capacity constraints in environmental and social monitoring, infrastructure gaps and challenges translating policy commitments into practice.	Potential for regional value chains under Economic Community of West African States (ECOWAS) and AfCFTA, subject to harmonization and coordination.
Northern Africa Morocco	Industrial upgrading anchored in established mineral sectors.	Integrated industrial strategies linked to mineral extraction, investment in downstream processing and export-oriented value chains.	Concentration of value creation in lead sectors, need to extend benefits more broadly across the economy.	Strong export orientation, regional integration potential shaped by alignment with continental frameworks.
Eastern Africa Tanzania	Consolidation of governance frameworks with emerging beneficiation objectives.	Strategic minerals policies, measures to increase domestic participation, and value addition.	Infrastructure limitations, institutional capacity constraints and enforcement challenges.	Regional integration opportunities exist but depend on coordinated trade rules and infrastructure investment.
Central Africa Democratic Republic of Congo	Ambitious governance reforms combined with beneficiation objectives.	Mining code reforms, community development fund requirements, and participation in regional battery value chain initiatives.	High implementation risk, enforcement and traceability challenges, uneven realization of community benefits.	Cross-border value chain initiatives signal potential, contingent on governance capacity and trade coordination.

1.1 Continental context

In December 2024, the AU's African Minerals Development Centre released Africa's Green Minerals Strategy (AGMS), marking a continental milestone in critical materials policy. As the continent's first policy framework dedicated to guiding the sustainable development and governance of green minerals, the AGMS "provides a roadmap for harnessing Africa's mineral wealth to drive value addition at source, regional industrialization, and climate resilience" (African Minerals Development Centre, 2024). The strategy is designed to align with and supplement existing policy mechanisms, including the 2009 Africa Mining Vision (AMV) and related African Minerals Governance Framework (UNECA, 2018a), the 2018 Agreement Establishing the African Continental Free Trade Area (AfCFTA) and the 2022 African Union Commodities Strategy (AUCS) and its Action Plan. Structured around four pillars of (1) advancing mineral development, (2) developing human and technological capacities, (3) building mineral value chains and (4) ensuring mineral stewardship, the AGMS highlights the opportunities and challenges Africa faces in the context of climate change, the transition to a low-carbon economy, and digital transformations (African Minerals Development Centre, 2024).

As home to about 30% of global critical mineral reserves, African nations are poised to receive rapidly increasing investments from countries around the world seeking to secure supplies amid rising geopolitical tensions (Boafo et al., 2024). Understanding this context, the AGMS situates repositioning "Africa's suite of mineral policy frameworks with strategies to exploit the new opportunities for green minerals" as "a core objective" (African Minerals Development Centre, 2024, p. 18). The AGMS builds

on the AMV's goals to maximize and substantively develop "the resources sector through the optimisation of linkages into the local economy" (AU, 2009, p. 13) and calls for scaling up intra-African trade to create what the AfCFTA describes as "a single market for goods, services, facilitated by movement of persons in order to deepen the economic integration of the African continent" (AU, 2018, Article 3(a)). These objectives are considered against the backdrop of existing social, environmental and policy constraints, including those related to trade, infrastructure, and governance (African Minerals Development Centre, 2024, pp. 11, 18).

Operationalized in 2021, the AfCFTA aspires to enhance state party cooperation "on all trade-related areas" and to progressively eliminate barriers to intra-African trade, among other objectives (AU, 2018, Article 4(a), 4(d)). A 2022 UN policy brief indicated that the agreement "underscores the need to promote sustainable and inclusive socio-economic development, gender equality and structural transformation" (El-Shaar & António, 2022, p. 14). In the critical minerals context, the AfCFTA is expected to pave a path toward greater legal harmonization among African states and the removal of other barriers to trade and regional beneficiation, such as tariffs (Chukwudi, 2025). Removal of these barriers could support the growth of cross-border value chain development of critical materials, including the expansion of mid- and downstream industrial development, such as refining and processing, the production of intermediate materials and component manufacturing. As some analysts have noted, "localised production could contribute to improved economic diversification, stimulate intra-African investment, and strengthen the continent's mining capabilities", helping the sector overcome its historical reliance on exports, which has effectively limited the "potential for value addition and industrialization" (Rampai & Nupen, 2024).

While the AfCFTA and the AGMS aspire to create a unified, continental market that would benefit Africa's critical materials sector, it is important to note the broader trade environment within which they operate. Multiple regional economic communities (RECs) exist in parallel to these continental policies, with most African states belonging to more than one REC at the same time. This circumstance is often referred to as a "spaghetti bowl" of economic arrangements, where different regional agreements "address multiple, overlapping cross-border issues" (Byiers et al., 2019). Such institutional layering can create confusion for trade and investment, complicating efforts to harmonize mineral policy and build cross-border value chains (see e.g. Khandelwal, 2004; Solomon & Odife, 2025). In 2006, the AU noted these potential difficulties and placed a moratorium on the recognition of new RECs (Decision on the Moratorium of the Recognition of Regional Economic Communities (RECs) Doc. EX.CL/278 (IX), 2006).

This institutional landscape is part of a broader governance framework for mineral resources in Africa, which is shaped by historical, political and geopolitical factors, including legacies of export-oriented extraction models, evolving notions of sovereignty over natural resources, and shifting global demand. These factors continue to influence infrastructure development, institutional capacity, trade relationships and risk perceptions across the continent. While such dynamics are relevant to understanding the political economy of mineral resource development, an in-depth analysis of geopolitical competition, historical contracting arrangements, or sovereignty debates falls beyond the scope of this policy-oriented assessment. Rather, this report

centres on contemporary policy frameworks and implementation pathways that shape local value creation in critical materials supply chains. Further research could build on this analysis by examining how geopolitical considerations and historical governance trajectories interact with emerging critical materials strategies in different regional and national contexts.

2. Defining critical materials

The distinction between critical minerals and critical materials is important to clarify at the outset of this analysis. Critical minerals typically refer to naturally occurring elements or compounds extracted from the earth, such as lithium, cobalt or rare earth elements, which are essential for specific technological, economic or strategic purposes. Critical materials, by contrast, include critical minerals as well as substances derived from critical minerals. IRENA emphasizes the important role of minerals and metals, such as cobalt, copper, graphite, iridium, lithium, manganese, nickel, platinum and rare earth elements, for a renewables-based energy transition (IRENA, 2023a, p. 23, 2024; see IRENA & NUPI, 2024a, 2024b). This reliance is embedded across a comprehensive supply chain, encompassing extraction and processing as well as the deployment of technologies such as solar panels, wind turbines and battery storage systems.

Within Africa, country-level variations of how a mineral or material is classified as critical are commonplace, such as in South Africa, where coal is classified as a “high-criticality mineral” based on a set of domestically defined indicators (Department of Mineral and Petroleum Resources, 2025) (for further analysis of South Africa’s domestic critical minerals policies, see Section 3.2). Thus, defining what constitutes a critical material is often tailored to national and regional contexts, balancing global energy transition imperatives with domestic development priorities, resource endowments and policy objectives. Given that this report focuses on the policy frameworks guiding critical materials development, this differentiation is perhaps less important, and the terms critical minerals and critical materials are used interchangeably. However, it is noted here that the discussions below rely more broadly on the AGMS’ narrow tailoring of critical minerals (or materials).

Of final consideration to the terminology used herein is the parsing of the terms “local value creation” versus “local value addition”. This report subsumes value addition under the broader categorical umbrella of value creation, defining value creation broadly as the range of activities that generate socio-economic benefits and opportunities for communities within the vicinity of mining operations. Local value creation could thus include, but is not limited to: employment and training; local procurement; domestic mineral processing; economic diversification and community resilience; and infrastructure development. Sustainable development is also closely linked to local value creation, as it encompasses social and environmental considerations and financial viability (i.e. people, planet, prosperity). Given its broad reach, generating local value creation will invariably impact a wider swathe of rights holders and other affected groups, including national level actors along the mineral resource value chain.

The AMV reinforces this understanding of local value creation, observing “that the sustainability and success” of resource-based development depend on a range of factors, reflecting a multidimensional approach to mining. Among other features, this approach recognizes the connections between infrastructure, human resources and skills development, knowledge building, environmental stewardship, community engagement and more (AU, 2009, p. 4). As noted, local value addition is subsumed under the local value creation definition, referring more narrowly to “the process of enhancing the value of raw minerals through beneficiation, processing, and manufacturing activities” (Prince, 2024). Value addition is thus recognized as one of the strategies through which local value creation may be achieved. This framing is consistent with IRENA’s analysis of value creation opportunities across renewable energy supply chains, including technologies such as onshore and offshore wind, solar photovoltaics, solar water heaters, concentrated solar power and small-scale hydropower (see IRENA, 2017b, 2017a, 2018, 2021, 2023b, 2025).

2.1 Africa’s strategic mineral resource policy frameworks

A major component of the AGMS’ focus is on the development of value chains related to critical materials development (African Natural Resources Management and Investment Centre, 2022, p. 8). As part of this work, and to narrow the scope of the AGMS’ target minerals, three defining criteria were identified by the policy’s authors: (1) “[m]inerals used in clean energy technologies and green industries”; (2) “[m]inerals that maximise the benefits of Africa’s mineral endowment”; and (3) minerals that serve as raw materials for the resource-driven development “of clean energy industries” (African Natural Resources Management and Investment Centre, 2022, p. 23). Using this scoping criterion, 13 materials were proposed for the AGMS’ focus, with the caveat that the “AGMS needs to maintain the flexibility to adjust the minerals included in the core list according to future changes in technology, mineral discoveries . . . [and] new industries” (African Natural Resources Management and Investment Centre, 2022, p. 24):

1. aluminum;
2. chromium;
3. cobalt;
4. copper;
5. graphite;
6. iron-steel;
7. lithium;
8. manganese;
9. nickel;
10. platinum group metals;
11. rare earth elements;
12. vanadium; and
13. zinc (African Natural Resources Management and Investment Centre, 2022, p. 23).

Other strategic frameworks also inform the AU’s mineral resource policymaking. While this report is not intended to provide a comprehensive overview of all related continental level policies, the 2023 Pan African Public Reporting Standard for Minerals and Energy Resources’ operational code (PARC) and the 2016 African Geological and

Mineral Information System (GMIS) Strategy, which adopts the 2009 UN Framework Classification for Fossil Energy and Mineral Reserves and Resources (UNFC), each feature prominently in continent-wide approaches to enhancing the value, sustainability and equity of Africa's mining industries. As stated in its executive summary, the GMIS Strategy is meant "to facilitate the strengthening of the African production, management and dissemination of geological and mineral information necessary for . . . legal, economic, social and environmental applications" (UNECA, 2016, p. iii). In adopting the UNFC, the GMIS Strategy supports the consistent application of both the UNFC and PARC through standardized data collection methods, harmonization and the sharing of geological and mineral resource data (UNECA, 2016, pp. xiii, 4, 21, 23, 24). The UNFC is described as a "universally acceptable and internationally applicable scheme for the classification and reporting of fossil fuel energy and mineral reserves and resources" (UNECE, 2009, preface). PARC is based on the UNFC classification system, but is tailored to an African context and regional priorities, as initially laid out in the AMV. As such, PARC reporting is governed by four key principles: (1) "good, social, environmental and economic benefits"; (2) "transparency"; (3) "materiality"; and (4) competency" (African Minerals Development Centre, 2023, p. 2). Reporting requirements may apply to several constituencies, including investors, different stakeholders, governments and more (African Minerals Development Centre, 2023).

3. Southern Africa: South Africa and Botswana

3.1 Regional overview

Southern Africa is among the continent's most mineral-rich regions. South Africa hosts significant deposits of platinum group metals, manganese and chromium (GCIS, 2012), and neighbouring Botswana is rich in diamonds, copper and nickel (Yager, 2023). Such resources have historically positioned the region as a global exporter of raw commodities; however, both national and regional strategies increasingly emphasize local value creation and industrialization.

South Africa and Botswana each participate in a select number of regional policy frameworks and cooperative mechanisms relevant to developing critical materials and promoting local value creation across the Southern Africa region. These regional frameworks provide the basis for a shared policy infrastructure to support trade, investment, and potentially value creation in the mining sector. They also form the building blocks of the AfCFTA, which both South Africa and Botswana have ratified (tralac, n.d.). (For additional analysis on the relationship between Africa's regional economic communities and the AfCFTA, see Olayiwola (2020).) Of significance are the Southern African Development Community, or SADC, and the Southern African Customs Union, "which allows for a free flow of trade between the two countries" (DIRCO, n.d.; ITA, 2025). In 1997, SADC member states established the Protocol on Mining, which sought to commit member states to harmonizing policies, attracting investment, and strengthening environmental and social safeguards (SADC, 1997), with a subsequent 2004 harmonization study urging governments to align mineral

policies with the shared principles of stability, equity and regional integration (UNECA & MEPC, 2004).

Despite these ambitions, regional integration remains limited. Research has noted significant overlap in regional trade instruments between African states, including multiple memberships that intersect geographically, creating confusion for trade arrangements (see e.g. Mapuva & Muyengwa-Mapuva, 2014). There is also reported disagreement within the SADC membership as to whether domestic versus regional beneficiation pathways should be pursued (Isheloke & von Blottnitz, 2023). Although the AfCFTA has the potential to provide a broader platform for cross-border mineral value chains, current practice reflects fragmented regional and national strategies.

3.2 South Africa

South Africa's policy landscape related to critical materials and intra-African trade is extensive and multilayered, comprising strategic frameworks, legislative instruments and sector-specific roadmaps. The 2025 Critical Minerals and Metals Strategy sets forth six pillars to maximize the economic benefits of platinum group metals, manganese, vanadium and other key minerals. It emphasizes transparency, regulatory clarity and data access, calling for the creation of a Market Intelligence Hub "to provide regular insights on commodity prices, supply risks, and demand trends" (Department of Mineral and Petroleum Resources, 2025, p. 33).

Economically, the strategy highlights beneficiation and industrial linkages (Department of Mineral and Petroleum Resources, 2025), and is reinforced by the 2023 Electric Vehicles White Paper, which positions South Africa's minerals as central to electric vehicle assembly and component manufacturing (DTIC, 2023). Yet chronic infrastructure bottlenecks and an unstable energy supply limit progress (Department of Mineral and Petroleum Resources, 2025). Compliance monitoring is also weak. A review of mining compliance monitoring and enforcement (CME) between the years 2017 and 2019 by the Centre for Environmental Rights, a law-focused nonprofit civil society organization in the country, indicated that information on CME remained difficult to access and was largely absent from the public domain (Centre for Environmental Rights, 2020). Information that could be reviewed pointed towards weak CME by South Africa's regulators, with the report's authors concluding that "such lack of enforcement" could work to enable "the violation of environmental rights" at mining sites (Centre for Environmental Rights, 2020, p. 8).

Social and community provisions are embedded throughout the 2018 Mining Charter III, which requires socio-economic development contributions and consultation with communities and other affected stakeholders (Republic of South Africa, 2018). However, a 2021 High Court ruling clarified that the Charter is policy guidance rather than binding law, weakening its enforceability (*Minerals Council of South Africa v Minister of Mineral Resources and Energy et al.*, 2021). Other social and environmental standards are embedded in law, policy and strategy documents, including in South Africa's Constitution and the various human rights treaties and conventions the country has ratified.

3.3 Botswana

Botswana represents a different mining landscape from South Africa. Its mining sector is dominated by diamonds, which account for roughly one-third of fiscal revenues, approximately 80% of mining exports (ITA, 2025; Jefferis, 2024), and more than 60% of the country's total exports, with copper and nickel playing a growing role (Trading Economics, n.d.). The government has long maintained a stable investment climate (Ndlovu & Vandome, 2024), underpinned by partnerships with companies such as De Beers (The World Bank, 2016). Governance is relatively strong, with clear and predictable regulations. The country's principal legislation governing the mining sector is the 1999 Mines and Minerals Act. The Act has only been amended twice in over 50 years and includes provisions that reduce the risk of political interference in mining investments, further promoting regulatory stability (Mines and Minerals Act, 1999; Ndlovu & Vandome, 2024). While Botswana does not mandate public disclosure of mining contracts, it does have a public consultation requirement related to environmental impact assessments (EIAs) (Environmental Assessment Act, 2011; Environmental Assessment (Amendment) Act, 2020; US Department of State, 2019).

Economically, Botswana has invested in downstream value creation, most notably through the relocation of a portion of De Beers' sorting and aggregation business to Gaborone in 2013, which included the establishment of cutting and polishing facilities (IGF, 2018). These initiatives illustrate progress toward beneficiation, though they remain concentrated in diamonds. Expansion and economic diversification into other minerals have been slower, but the country maintains its focus on local value creation, as opposed to exporting raw materials (IGF, 2018; Korinek, 2014; Mining Indaba, 2025). Recent diversification efforts include licensing the country's first manganese mining project with the intent to produce battery-grade manganese at a newly established facility in South Africa (Benza, 2024).

On the social side, Botswana has promoted community benefits primarily through a centralized policy for mineral rent collection and disbursement (Ndlovu & Vandome, 2024). Mineral rents have historically financed health, education and infrastructure, making the country one of Africa's most successful examples of resource-funded development (Jefferis, 2013; Ndlovu & Vandome, 2024). However, structured community level agreements and free, prior and informed consent are less developed compared to international best practice (Anaya, 2010; Flaherty, 2016).

As noted above, environmental provisions concerning mining exist in law, with EIAs required for major projects under the amended 2020 Environmental Assessment Act. However, as in South Africa, enforcement capacity is constrained, with a 2015 assessment reporting only six Department of Environmental Affairs offices and three officers per station to monitor, audit and enforce regulations (Tshwene-Mauchaza, 2015). Botswana thus offers a model of stability and incremental progress in beneficiation, but one that remains narrow in scope and less ambitious than South Africa's attempts to link minerals to broader industrialization.

At the time of writing, Botswana's President Duma Boko announced the introduction of legislation aimed at strengthening domestic value creation in the mining sector. The proposed framework would require that diamonds, copper concentrate, and other

mineral resources undergo processing in Botswana prior to export, with the objective of expanding beneficiation and developing downstream industries as part of the country's broader economic diversification strategy (Kgweetsi, 2025). The president is quoted as saying, "No diamond will leave this country raw – all will be cut and polished here. No copper concentrate will be exported without local value addition" (Africa Briefing, 2025).

4. Western Africa: Nigeria and Ghana

4.1 Regional overview

Like Southern Africa, West Africa is one of the continent's most resource-rich regions, hosting significant reserves of gold, bauxite, manganese and lithium (Mining Review Africa, 2025). In the context of the energy transition, Ghana and Nigeria demonstrate contrasting phases of sector and policy development in critical minerals, reflecting different opportunities and constraints for advancing local value creation. Ghana, already an established gold producer, is increasingly positioning itself as a hub for bauxite, manganese and lithium projects (Acheampong, 2022; Sandell-Hay, 2022), while Nigeria, historically reliant on the oil and gas industry, seeks to diversify its economy through the development of a new critical minerals sector (Quarshie & George-Ikoli, 2022).

Regional trade alliances, particularly those advanced by the Economic Community of West African States (ECOWAS), emphasize the harmonization of national policies and the establishment of a common market. With regard to mineral wealth, ECOWAS calls on member states to "exchange information" on various aspects of mapping, processing and development, including cooperation to train and develop technical capacities in the mining sector (ECOWAS Commission, 1993, Article 31). Both Nigeria and Ghana are members of ECOWAS and have also ratified the AfCFTA; however, several factors limit intra-regional trade and critical minerals local value creation. These factors are seen throughout the African continent, and include infrastructure bottlenecks, overlapping regulatory frameworks that hinder cross-border supply chains and a reliance on exporting raw materials rather than domestic processing and manufacturing (Amare, 2025; see e.g. Matata, 2025).

4.2 Nigeria

Nigeria is undertaking broad reforms to diversify its economy away from oil, attract investment and promote domestic value addition in the mining sector. Anchored in the National Development Plan 2021–2025 and the country's 2016 Roadmap for the Growth and Development of the Nigerian Mining Industry: On the Road to Shared Mining Prosperity (Mining Roadmap), recent policy shifts emphasize governance, fiscal incentives, strategic mineral prioritization and environmental oversight. Central to these reforms is the advancement of domestic value addition. In 2021, the government passed the Mineral Value Chain Regulations, aimed at stimulating midstream growth and reducing raw material exports (KPMG, 2024). A 2024 government announcement

later indicated that new mining licences would only be granted to those investors who could “present a plan on how minerals would be processed locally”, with guidelines to be developed (Anyagou, 2024).

Despite these reforms, 2023 figures place the mining sector at approximately 1% of GDP, with key challenges to growth including: limited geological data on available mineral reserves; infrastructure issues, such as roads and energy access; security concerns related to terrorism and insurgency; illegal mining; funding; and an investment framework that is not tailored to the industry (KPMG, 2024). Economically, the government has designated certain minerals as “strategic”, including gold and iron ore (IEA, 2022b). However, it is also prioritizing lithium, copper, graphite and other critical minerals as part of the country’s new drive toward domestic local value creation (Abubakar, 2025). As announced in a May 2025 presidential press release, examples include new lithium processing facilities planned in the states of Kaduna and Nasarawa. Officials also report that policy and legal reforms have attracted nearly USD 800 million in new investment, with additional steps now being taken to formalize artisanal and small-scale mining (Onanuga, 2025). In parallel, Nigeria signed a minerals cooperation pact with South Africa in 2025, aimed at strengthening regional collaboration, supporting diversification away from oil dependence and positioning both countries as anchors for African critical minerals value chains (Eboh, 2025).

With regard to mining’s social aspects, Nigeria’s Mining Roadmap emphasizes institutional deficiencies and limited regulatory enforcement as barriers to the sector’s long-term success. The Roadmap identifies increased transparency and governance, skills transfer and training and alignment with the AMV as important objectives, among others. In line with these priorities, the country issued the Guidelines for the Production of Community Development Agreements in 2023 (MMSD, n.d.). However, obstacles continue to impede equitable participation and the resolution of social conflict around informal mining operations (KPMG, 2024).

Environmentally, Nigeria seeks to tighten regulatory oversight and has already revoked operating licences held by oil and gas companies for failure to comply with industry and environmental standards (Tunji, 2025). The 2011 Minerals and Mining Regulations and related environmental legal framework require EIAs and rehabilitation plans, but enforcement remains weak (The World Bank, 2007). In 2024, Nigeria announced a phased roadmap for implementing environment and climate-related financial disclosures via the International Financial Reporting Standards, with companies to report voluntarily through 2027 (Financial Reporting Council of Nigeria, 2026). Despite this, in its First Biennial Transparency Report under the UN Framework Convention on Climate Change (UNFCCC) in December 2024, the Nigerian government acknowledged that the country continues to face significant funding and capacity constraints for environmental monitoring and data collection, limiting the effectiveness of institutional oversight (Federal Republic of Nigeria, 2024).

4.3 Ghana

Ghana's mining sector is well established, with gold long serving as a pillar of the economy (Soulé et al., 2025). At the time of writing, the Minerals and Mining Policy of Ghana, adopted in 2014, remained the guiding policy instrument for the sector. The policy was reportedly undergoing a "comprehensive review", with revisions aimed at integrating green mineral development, environmental, social and governance considerations, and sustainable mining practices (Ministry of Finance, 2025, p. 224). In 2023, Ghana's Cabinet approved the Green Minerals Policy (GMP), "with the goal of encouraging local value addition and processing to ensure Ghana benefits substantially from the global energy transition" (Ministry of Finance, 2025, p. 9). Among other features, the GMP includes guidance to increase royalty rates for green minerals, phase out stability agreements and strengthen local content requirements (Ministry of Finance, 2025). The GMP's policy reforms coincide with proposed amendments to Ghana's 2006 Minerals and Mining Act, the country's "principal legislation governing the mining sector" (Ministry of Finance, 2025, p. 7). The proposed amendments reflect efforts to strengthen governance and align the industry more closely with community and environmental priorities, and include: shortened licence durations; the elimination of stability clauses related to environment, health and safety; the establishment of mandatory community development agreements (CDAs); and the introduction of a new medium-scale mining category (Minerals Commission of Ghana, 2025). At the time of writing, these amendments are undergoing legislative review, with certain provisions being incrementally integrated into Ghana's regulatory framework through separate legal instruments, the description and details of which fall outside the scope of this report.

Economically, Ghana continues to emphasize local content and beneficiation, a stated priority in the 2025 Africa Renewable Energy Manufacturing Initiative's Green Manufacturing Policy and Investment Guide for Ghana: "Local manufacturing and value chain development is a key priority for the government as well as various national plans and policies" (Sustainable Energy for All & Africa Renewable Energy Manufacturing Initiative, 2025, p. 4). Ghana's Minerals Income Investment Fund is mandated to maximize the value of dividends and royalties from the sector, investing such revenues into domestic enterprises and infrastructure to support value chain development (MIIF, n.d.). These initiatives are complemented by government policies to "[p]romote linkages (backward, forward and side-stream) to minerals produced locally to the maximum extent possible" (Republic of Ghana, 2014, Article 2.1), as well as regulations aimed at bolstering local content in the mining sector (Atta-Quayson, 2022).

On the social side, reforms increasingly target community development. The 2016 Minerals Development Fund Act earmarks a portion of mineral royalties for local development projects, with the objective of providing direct financial benefits to mining communities, landholders and local governments, as well as bolstering the country's institutional bodies, including the Minerals Commission and Geological Survey Department. Among other activities, the fund may be applied to redressing adverse community impacts, bolstering local economic development, training and human resources, and governmental functions, such as planning, monitoring and evaluation (Minerals Development Fund Act (Act 912), 2016). Additionally, the abovementioned proposed amendments to Ghana's mining law introduce important CDA requirements,

shifting from a voluntary to a formally regulated framework for company-community relations. If effectively implemented, these measures could foster more inclusive forms of local value creation in the country.

Ghana is increasingly integrating environmental considerations into its approach to local value creation. The country recently overhauled its environmental regulatory framework with the enactment of the 2025 Environmental Protection Act, which includes guiding principles for enforcement built around the precautionary principle, intergenerational equity and sustainable development (Environmental Protection Act, 2025 (Act 1124), 2025, Section 161). For the mining sector, these reforms work to consolidate Ghana's environmental legislation and link licence renewals more directly to environmental performance, with potential benefits that ensure beneficiation and local processing are undertaken more sustainably. As in many jurisdictions, enforcement capacity remains an ongoing struggle for the country (see Aryee et al., 2024). Yet, by embedding stronger environmental and climate provisions into its legal framework, Ghana is positioning its mineral exports to meet rising sustainability standards under the AfCFTA and other regional trade arrangements, linking environmental compliance more directly to local value creation and competitiveness in intra-African markets.

5. Northern Africa: Morocco

5.1 Regional overview

In Northern Africa, mineral policy is shaped primarily at the domestic level, with regional trade blocs playing a less significant role in interstate harmonization than in other parts of the continent. The region hosts the Arab Maghreb Union (AMU), which was created in 1989 and includes the five member states of Algeria, Libya, Morocco, Tunisia and Mauritania. Established to create a “common market” and remove barriers to trade, the AMU aspired to build on the “fraternal relations” of member states, provide for “the free movement of persons in services, goods and capital” and to harmonize policies related to industry, social development, agriculture and more (AMU, 2019). However, a 2018 report from the UN Economic Commission for Africa indicates that despite the AMU's readiness to promote regional integration among its members, trade remains extremely low compared to the African average (UNECA, 2018b). According to the report, as of 2014, trade within the AMU accounted for a mere 5% of member countries' overall trade flows, substantially below the continental average of 12% (UNECA, 2018b). Similarly, while several North African states are members of the Community of Sahel-Saharan States (CEN-SAD), like the AMU, CEN-SAD has made little progress toward operationalizing free trade or sectoral initiatives (UNECA, 2025).

As indicated above, domestic policy frameworks play a central role in shaping critical minerals governance in Northern Africa, with continental initiatives serving as complementary guides for integration. The AfCFTA provides the platform for tariff reduction, harmonized standards and cross-border infrastructure investment, and is identified by the AGMS as central to supporting beneficiation and value chain development across Africa (African Minerals Development Centre, 2024). Together with the AMV and AU's Agenda 2063, these frameworks emphasize the need for

North African producers to shift away from exporting raw minerals to industrial processing and intra-African trade, embedding local value creation within continental industrialization pathways.

5.2 Morocco

Morocco has one of Africa's most developed mineral policy landscapes, rooted in its global dominance of phosphates and its strategic positioning in cobalt, copper and manganese (Taib, 2025). Mining governance is largely influenced by the state-owned enterprise OCP Group, which has spearheaded long-term strategies for sustainable, domestic beneficiation and technological innovation (Alouani et al., 2020). As part of the company's Green Investment Program (2023–2027), OCP Group has committed USD 13 billion toward expanding its mining and fertilizer production capacity to reach 20 million tonnes by 2027 (OCP Group, 2022). This strategy integrates renewable energy into OCP Group's investment ambitions, creating an innovative industrial ecosystem in Morocco that promises to generate 25 000 jobs and embed and strengthen local value creation at all the company's mining and industrial sites (OCP Group, 2022).

Beyond the contributions of OCP Group, Morocco's strategic vision for critical materials development is anchored in the 2021 New Development Model policy framework, described in a report by the country's Special Commission on the Development Model as including a focus on economic diversification, value addition and value chain integration (SCDM, 2021). Additional legal and policy reforms are also underway to boost the country's mining sector. Such modernization of Morocco's mining governance framework will reportedly include prioritization of critical minerals development, streamlined investment procedures and digitization and centralization of the national mining registry, including licences and geological data (North Africa Post, 2025). The creation of the Commission for the Mineral Transition Economy in 2023, an inter-ministerial commission focused on minerals development, is also demonstrative of Morocco's broader strategy to diversify the country's mining sector (Belkabir, 2025).

Economically, Morocco is positioning its mining sector to support the energy transition by pairing its global leadership in phosphates with growing efforts to process and add value to other critical minerals. Managem Group, a Moroccan mining company majority-owned by the royal holding company Al Mada, has advanced a cobalt strategy that emphasizes domestic processing of cobalt sulfate for electric vehicle batteries, targeting both African and international markets (Managem, n.d.). Similar initiatives are being developed around manganese and copper. Alongside Morocco's policy and legal reforms, these corporate strategies seek to expand beneficiation and reduce reliance on raw mineral exports, positioning Morocco as a supplier of processed materials critical to renewable energy technologies. Morocco is also expanding bilateral cooperation within Africa, such as 12 agreements concluded in 2019 with Rwanda, including a framework agreement on mining, geology and hydrocarbons (MINAFFET, 2019).

Socially, Morocco has sought to link mineral development with broader socio-economic goals through job creation, technical training and regional development programs tied to OCP Group's industrial hubs. The National Strategy for Sustainable Development

2030 (NSSD) sets out commitments to align mining with inclusive growth, skills development and reduced inequality, positioning the sector as a key component of the green economy (Kingdom of Morocco, n.d.). Within this framework, investment in mining is designed to create employment, stimulate regional development and support Morocco's broader green industrial policy, exemplified through such instruments as OCP Group's Green Investment Program and the 2021 National Hydrogen Strategy.

On the environmental side, Morocco has embedded sustainability into its mineral policies. OCP Group has committed to achieving carbon neutrality by 2040, backed by renewable energy investments and seawater desalination for mining use (OCP Group, n.d., 2026). Nationally, the NSSD reinforces environmental integration across all sectors, including mining, with objectives to strengthen environmental monitoring, reduce industrial pollution and align with the country's Paris Agreement commitments to the UNFCCC (Chafil, 2017). At the time of writing, an updated NSSD has been presented to the Moroccan Parliament. However, Minister of Energy Transition and Sustainable Development, Leila Benali noted that certain challenges remain in the policy's effective implementation, including a lack of monitoring capacity and the need for measurable indicators (Zouiten, 2025). Arkeh and Khalil (2025) similarly identify obstacles related to Morocco's governance, institutional capacity and climate vulnerabilities.

6. Eastern Africa: Tanzania

6.1 Regional overview

Eastern Africa holds significant deposits of critical minerals such as graphite, lithium, nickel and rare earths, and Tanzania has emerged as a regional leader in embedding critical minerals into national industrial and trade policy. As a member of the East African Community (EAC), the SADC and the AfCFTA, Tanzania occupies a strategic role in overlapping regional trade arrangements. The EAC maintains an active focus on promoting extractive industry development and mineral value addition within its member states, noting that while the sector holds vast potential to promote regional integration, significant barriers remain. The EAC's identified challenges include: limited data on regional mineral resource deposits; capacity issues related to financing, technical expertise and technology; and weak legal and policy frameworks. The EAC therefore aims to develop a harmonized regulatory framework to promote investment in the mining sector, as well as to enhance the capacities of member states across the mineral supply chain (EAC, n.d.). While the EAC seeks to address these structural barriers, Tanzania's shift away from raw mineral exports underscores the complementary importance of the AfCFTA as the key framework for scaling beneficiation and ensuring that critical minerals support local value creation within intra-African supply chains.

6.2 Tanzania

Tanzania's mining sector is governed by the 2010 Mining Act, with major amendments promulgated through a series of legislative acts in 2017 that, among other changes, restricted the export of raw minerals for beneficiation outside of the country. Additional measures include incentives for local hires and training, as well as for local suppliers (Ngocho & Magai, 2020). More recent announcements in 2024 impacting critical minerals development relate to the country's forthcoming Critical and Strategic Minerals Strategy, a policy document directed at boosting the sector and domestic value addition (Sabiiti, 2025). As part of its focus, the Strategy is reported to encompass other aspects of local value creation, including: creating skilled, high-value jobs; addressing social and environmental challenges; reducing Tanzania's reliance on imports; and promoting further economic diversification (Mining See, 2024). Collectively, these reforms embed beneficiation and local participation as central to mineral governance, shifting policy beyond a focus on mining revenue toward broader industrial development. The reforms also align with Tanzania's Development Vision 2050 policy, containing six guiding principles, one of which asserts the "right to exercise sovereignty over the nation's natural wealth and resources as invaluable assets for its citizens" (United Republic of Tanzania, 2025, p. 8).

Policies to advance beneficiation and local value creation are at the heart of Tanzania's mining strategy, as evidenced by the abovementioned introduction of the Critical and Strategic Minerals Strategy in 2024. In a 2025 media briefing, Tanzania's Minerals Minister, Anthony Mavunde touted that the mining sector's contribution to GDP had reached 10.1% in 2024 (Machira, 2025). Flagship projects contribute to this uptick. The Chilalo Graphite Project, a vertically integrated open-pit mining operation developed by Evolution Energy Minerals, began preliminary construction in late 2024, with site preparation underway and a resettlement action plan approved in 2022 (Evans, 2024; Evolution Energy Minerals, n.d., 2022). In-country processing is planned, and the company has secured an offtake agreement with Chinese manufacturer Yichang Xincheng Graphite for the future purchase of the project's graphite output (Mining Technology, 2024). Similarly, the Kabanga Nickel project, one of the world's largest undeveloped nickel deposits, includes plans for a hydrometallurgical refinery in Kahama, a town in northwestern Tanzania (Lifezone Metals, n.d., 2025). The project and refinery are operated by Tembo Nickel, a subsidiary of Lifezone Metals, in which the government has a 16% stake (Therayil, 2024). Despite these developments, infrastructure remains a constraint, with persistent gaps in power reliability and transport corridors. However, government investment in electrification and logistics aims to reduce these bottlenecks to support expanded industrial activity and cross-border mineral trade (World Bank Group, 2023).

From a social perspective and as introduced above, Tanzania's mineral legal framework promotes local value creation through a variety of incentives and mandates related to domestic procurement, Tanzanian ownership requirements, and minimum thresholds for employing and training nationals. In accordance with the Mining (Corporate Social Responsibility) Regulations of 2023, companies must prepare a credible corporate social responsibility plan, with specified budget allocations for community, municipal or district level social investment (see Lui et al., 2023). In 2025, the government announced development of the Mining for a Brighter Tomorrow initiative, seeking to

facilitate participation in mining and access to skills development, safety training and support for women and youth (Ministry of Minerals, 2025).

Environmental policy in Tanzania has gained renewed momentum with amendments to the 2023 Environmental Management Act aimed at bolstering the country's environmental governance and encouraging private investment in green energy (Onyango, 2025). The 2025 amendments seek to expand legal definitions and strengthen institutional frameworks for environmental oversight, among other objectives. Such changes are complemented by sector-specific regulations such as the 2025 Mining (Technical Support to Small Scale Miners) Regulations, creating a more enabling framework for local value creation designed in tandem with heightened environmental standards.

7. Central Africa: Democratic Republic of the Congo

7.1 Regional overview

The Democratic Republic of the Congo (DRC) is the cornerstone of Central Africa's mineral economy, holding roughly 50 percent of global cobalt reserves, along with significant copper deposits (African Minerals Development Centre, n.d.). As a member of several regional trade organizations, including the SADC, the Economic Community of Central African States (ECCAS), the Common Market for Eastern and Southern Africa and the AfCFTA, the DRC sits at the intersection of a number of overlapping trade blocs. While the SADC has a formal Protocol on Mining that encourages harmonization of policies and cross-border mineral value chains (see Section 3.1), implementation has still suffered challenges (see e.g. Pallotti, 2004). ECCAS has historically lacked the capacity to advance sector-specific integration (UNCTAD, 2016), leaving the AfCFTA as the primary framework through which DRC's minerals may be integrated into intra-African supply chains. Despite this potential, numerous obstacles remain in bolstering the DRC's local value creation and increasing regional and continental trade.

7.2 Democratic Republic of the Congo

The DRC's mining sector is primarily governed through the Mining Code, which was revised in 2018 with amendments aimed at strengthening state revenue collection and introducing higher royalty rates for strategic minerals, such as cobalt (Jansen van Vuuren, 2018). The amendments also enhanced transparency obligations and mandated that companies contribute to community development funds, alongside heightened local content requirements, including domestic sourcing and employment of nationals (Cibambo, 2025). While enforcement capacity remains weak, these measures represent efforts to link mining governance more directly to local value creation. However, key barriers remain, including energy poverty, infrastructure challenges, violent conflict and corruption issues that impede economic diversification efforts. These barriers create

a trade environment that is often perceived as too risky by investors, thereby limiting inbound investments (Naveed & Vazir, 2023).

The DRC is the world's leading producer of cobalt and Africa's top copper producer, minerals that are central to battery storage and electric vehicles. Government policy aims to increase domestic beneficiation in these areas, most notably through the 2022 Zambia-DRC joint battery and electric vehicle initiative to develop value chains related to the clean energy sector. A Congolese Battery Council was later established in 2022, and the countries now seek to launch a transboundary special economic zone to advance the initiative's objectives (UNECA, 2024). Realizing the full potential of the Zambia-DRC partnership under the AfCFTA could anchor Central Africa in a continental battery value chain, but this may require significant investment in logistics, refining and processing. Relatedly, the government has also designated certain minerals, including cobalt, as strategic and thus subject to higher royalties. Despite this, the country's cobalt supply chain remains "extremely complex and difficult to trace", resulting in unreliability as to assertions of a mineral's origin (The World Bank, 2021, p. 27). This has resulted in efforts to formalize the DRC's artisanal and small-scale mining sector (The World Bank, 2021).

As introduced above, the 2018 Mining Code amendments formalized requirements for local engagement through mandated contributions to a community development fund (Toroskainen, et al., 2020). These provisions aim to embed social value creation into mining operations by financing infrastructure, schools, health facilities and other projects and programs in mining areas. However, implementation has been uneven, with reports of delays in fund disbursement and weak monitoring (EITI, n.d.). Ongoing governance reforms and stronger enforcement could improve how mineral rents translate into local benefits and help align DRC's mining sector with broader continental objectives of inclusive growth.

Environmental governance is guided by Law No. 11/009 of 2011 on Fundamental Principles Relating to the Protection of the Environment, which mandates EIAs for major mining projects; yet, information and access to the law and its related legal framework are extremely limited (IEA, 2022a). Enforcement in all areas of environmental and social governance remains inadequate, with concerns related to deforestation, human rights abuses, water contamination and more, all linked to the country's mining industry (Amnesty International, 2023; Kamnitzer, 2024; Kara, 2025; Mudodosi, 2024; RAID & AFREWATCH, 2024). Although the DRC's recent bilateral initiatives with Zambia and regional partners aim to integrate higher environmental standards into the proposed battery value chain – in part to ensure competitiveness in AfCFTA and global markets where sustainability standards are rising – ensuring that environmental and social safeguards are embedded in value chain development will be key to turning the DRC's mineral wealth into sustainable local value creation.

8. Understanding implementation outcomes and challenges

8.1 Achievement highlights

Across the continent, national reforms demonstrate a clear policy shift toward embedding local value creation within critical minerals governance. In Southern Africa, South Africa's 2025 Critical Minerals and Metals Strategy and its 2023 Electric Vehicles White Paper chart enabling pathways to link mineral endowments to mid- and downstream industries, while Botswana's long-term partnership model with De Beers and its relocation of diamond sorting and aggregation to Gaborone illustrate how stability and targeted reforms can extend resource rents into local value addition. In West Africa, Nigeria's 2021 Mineral Value Chain Regulations and subsequent measures requiring local processing plans mark a decisive turn away from raw exports, just as Ghana's 2023 Green Minerals Policy and amendments introducing mandatory community development agreements highlight efforts to integrate social and environmental provisions with beneficiation. In North Africa, Morocco's phosphate-led model, reinforced by OCP Group's Green Investment Program, combines industrial upgrading and innovation with renewable energy integration. This model is now being increasingly extended to cobalt and other minerals. In Eastern Africa, Tanzania's forthcoming Critical and Strategic Minerals Strategy promises to consolidate prior reforms by embedding beneficiation, local procurement and participation, as exemplified in flagship projects such as Kabanga Nickel and Chilalo Graphite. Central Africa's DRC, through its 2018 Mining Code reforms and the 2022 battery value chain initiative with Zambia, has sought to expand beneficiation while also mandating contributions to local development funds. Collectively, these reforms illustrate a growing recognition across African regions that beneficiation, local content rules and community benefit frameworks are integral to mining governance.

8.2 Barriers to effective implementation

Despite this progress, persistent barriers limit the realization of the continent's ambitions. A key challenge to intra-African trade in critical materials is the "spaghetti bowl" effect of overlapping regional trade blocs, described in Section 1.1. Many African states hold memberships in multiple regional economic communities, each with distinct tariff regimes, rules of origin and sectoral commitments. These overlapping obligations can fragment policy coherence, create conflicting compliance requirements and weaken the capacity of regional markets to support integrated mineral value chains. For critical materials, this can undermine policy reforms that emphasize beneficiation and cross-border supply chains through misaligned regional frameworks and limited institutional coordination. However, across the countries examined, policy frameworks promoting local value creation are often supportive of broader development and industrial objectives. In practice, implementation varies, with gaps emerging between stated policy ambitions and outcomes due to differences in institutional capacity, infrastructure and coordination between policy domains.

Infrastructure bottlenecks, such as unreliable power supply and limited transport corridors, further constrain competitiveness and slow the emergence of cross-border supply chains, as highlighted in various country profiles. Capacity and enforcement gaps remain widespread, particularly in environmental and social monitoring. In South Africa, weak compliance monitoring and enforcement have undermined regulatory effectiveness, while in the DRC, delays in the disbursement of community funds and uneven implementation of development agreements have constrained local benefits. Without stronger institutions, beneficiation and local processing risk reproducing environmental costs or igniting community grievances rather than advancing equitable growth. As a recent Extractive Industries Transparency Initiative (EITI) report on Ghana notes in its critical minerals assessment, “development of value chains and beneficiation is key to avoiding a repeat of the paradox of plenty syndrome” (Acheampong, 2022, p. 66). These efforts will require structural impediments to be addressed. Without such reforms, the potential for value chains to align with continental frameworks like the African Continental Free Trade Area, the AU’s Agenda 2063 and the Africa Mining Vision will remain constrained (Acheampong, 2022).

9. Conclusions

This report has shown how African governments are moving beyond extractive rent collection toward policy frameworks that explicitly embed local value creation in the governance of critical minerals. Across regions, reforms increasingly emphasize beneficiation, local content and regional cooperation as the building blocks of industrial development. This shift is also reflected in IRENA's forthcoming Regional Energy Transition Outlooks for Africa, which will identify a growing policy emphasis on linking resource endowments to industrial development, sustainability objectives, local capacities and regional value chains as part of Africa's energy transition pathways. Viewed holistically, country experiences show that policy emphasis has moved decisively toward local value creation, with governments positioning critical minerals as entry points for building regional value chains under the African Continental Free Trade Area, referred to throughout this report as the AfCFTA.

Reducing the complexity of overlapping regional trade arrangements is important to unlocking the potential of intra-African trade in critical materials. Streamlining regional economic community commitments under the AfCFTA framework and prioritizing legal and institutional harmonization would help minimize duplication and strengthen regional policy coherence. In practice, this means accelerating AfCFTA implementation in the mining and minerals sector, ensuring that tariff schedules, rules of origin and beneficiation provisions are coordinated across regions. Doing so would reduce the inefficiencies associated with the current overlapping trade blocs and create a clearer pathway for building regional value chains in critical materials.

Additionally, Ghana's EITI assessment underscores the notion that continued reliance on raw mineral exports is "no longer justifiable" (Acheampong, 2022). Beneficiation and value chain development, aligned with the AfCFTA, Agenda 2063 and the Africa Mining Vision, are now considered central to ensuring that critical minerals contribute to equitable growth and regional integration. These continental frameworks provide the normative and institutional foundation for transforming Africa's mineral endowment into shared prosperity. The analysis also highlights the barriers that must be addressed to achieve these aims. Infrastructure deficits, weak monitoring and enforcement capacity, and delays in translating policy commitments into practice risk undermining the potential of beneficiation. Absent efforts to address these constraints, new policies may reproduce past patterns of extractive dependency rather than advancing sustainable and inclusive growth.

Collectively, the experiences of the focus countries herein demonstrate both the opportunities and the risks of this new policy trajectory: Africa has the mineral resources, the continental policy frameworks and a growing base of national reforms that prioritize local value creation. The challenge now is to close the gap between ambition and implementation, ensuring that critical minerals governance supports the broader goals of the global energy transition while strengthening Africa's own industrialization and regional integration.

References

- Abubakar, S. D. (2025, March 3). The Role of Nigeria's Critical Minerals in the Global Energy Transition. *Veriv Africa*. <https://www.verivafrica.com/insights/the-role-of-nigerias-critical-minerals-in-the-global-energy-transition>
- Acheampong, T. (2022). *The Energy Transition and Critical Minerals in Ghana: Diversification Opportunities and Governance Challenges*. Extractive Industries Transparency Initiative. https://eiti.org/sites/default/files/2022-06/FINAL%20REPORT_Ghana%20Critical%20Minerals_CLEAN_30.05.22.pdf
- Africa Briefing. (2025, June 6). Botswana says no to raw diamond exports. *Africa Briefing*. <https://africabriefing.com/botswana-no-raw-diamond-exports>
- African Minerals Development Centre. (n.d.). *Green Mineral Profile: DRC*. African Union. Retrieved <https://www.africangreenminerals.com/countries/democratic-republic-of-congo>
- African Minerals Development Centre. (2023). *The Pan African Public Reporting Standard for Minerals and Energy Resources*. African Union. https://au.int/sites/default/files/documents/43674-doc-PARC_EN.pdf
- African Minerals Development Centre. (2024). *Africa's Green Minerals Strategy*. African Union. https://au.int/sites/default/files/documents/44539-doc-AGMS_Final_doc.pdf
- African Natural Resources Management and Investment Centre. (2022). *Approach Paper towards preparation of an African Green Minerals Strategy*. African Development Bank. https://www.afdb.org/sites/default/files/documents/publications/approach_paper_towards_preparation_of_an_african_green_minerals_strategy.pdf
- Alouani, A., Hallouzi, H., Allam, A., & El Kiyaila, S. (2020). *Phosphate Beneficiation Innovation in a Sustainable Development Way, OCP Khouribga Mine Case*. SYMPHOS 2019 – 5th International Symposium on Innovation & Technology in the Phosphate Industry. <https://dx.doi.org/10.2139/ssrn.3633004>
- Amare, T. (2025, May 5). Beyond Extraction: Unlocking Africa's Industrial Potential through Value Addition. *Horn Review*. <https://hornreview.org/2025/05/05/beyond-extraction-unlocking-africas-industrial-potential-through-value-addition/>
- Amnesty International. (2023, September 12). *Democratic Republic of the Congo: Industrial mining of cobalt and copper for rechargeable batteries is leading to grievous human rights abuses*. <https://www.amnesty.org/en/latest/news/2023/09/drc-cobalt-and-copper-mining-for-batteries-leading-to-human-rights-abuses/>
- AMU. (2019). *Objectives and tasks*. Arab Maghreb Union. <https://maghrebarabe.org/en/objectives-and-tasks/>
- Anaya, J. (2010). *Report of the Special Rapporteur on the situation of human rights and fundamental freedoms of indigenous people: The situation of Indigenous people in Botswana (addendum)*. UN Human Rights Council. <https://digitallibrary.un.org/record/685043?ln=en&v=pdf>
- Anyaogu, I. (2024, March 28). Nigeria to grant mining licences only to companies that process locally. *Reuters*. <https://www.reuters.com/world/africa/nigeria-grant-mining-licences-only-companies-that-process-locally-2024-03-28/>
- Arkeh, J., & Khalil, S. (2025). *Morocco's Climate Strategy: Balancing Growth, Resilience, and Sustainability*. Carnegie Endowment for International Peace. <https://carnegieendowment.org/research/2025/01/moroccos-climate-strategy-balancing-growth-resilience-and-sustainability>
- Aryee, F. A., Arthur, A., & Asianoah, R. K. (2024). The effectiveness of Ghana's environmental impact assessment regulations to achieve green growth. *Impact Assessment and Project Appraisal*, 42(6), 544–552. <https://doi.org/https://doi.org/10.1080/14615517.2024.2436711>
- Atta-Quayson, A. (2022). Local procurement in the mining sector: Is Ghana swimming with the tide? *Journal of the Southern African Institute of Mining and Metallurgy*, 122(2). <https://doi.org/https://doi.org/10.17159/2411-9717/1586/2022>
- AU. (2009). *Africa Mining Vision*. African Union. https://au.int/sites/default/files/documents/30995-doc-africa_mining_vision_english_1.pdf
- AU. (2015). *Agenda 2063: The Africa We Want*. African Union. https://au.int/sites/default/files/documents/36204-doc-agenda2063_popular_version_en.pdf
- AU. (2018). *Agreement Establishing the African Continent Free Trade Area*. African Union. https://au.int/sites/default/files/treaties/36437-treaty-consolidated_text_on_cfta_-_en.pdf

- Belkabir, Y. (2025, May). *Morocco's Strategic Position in Energy Transition Minerals*. Virtual meeting of United Nations Economic and Social Commission for Western Asia group of experts on extractive industry. https://www.unescwa.org/sites/default/files/event/materials/08_Morocco_Critical_Minerals_FINAL_Presentation.pdf
- Benza, B. (2024, September 18). Botswana licences its first manganese mining project. *Reuters*. <https://www.reuters.com/markets/commodities/botswana-licences-its-first-manganese-mining-project-2024-09-18/>
- Boafo, J., Obodai, J., Stemn, E., & Nkrumah, P. N. (2024). The race for critical minerals in Africa: A blessing or another resource curse? *Resources Policy*, 93. <https://doi.org/https://doi.org/10.1016/j.resourpol.2024.105046>
- Byiers, B., Woolfrey, S., Medinilla, A., & Vanheukelom, J. (2019). *The political economy of Africa's regional "spaghetti bowl."* European Centre for Development Policy Management. <https://ecdpm.org/application/files/2716/5546/8685/ECDPM-synthesis-report-political-economy-Africas-regional-spaghetti-bowl.pdf>
- Centre for Environmental Rights. (2020). *Environmental Compliance Monitoring and Enforcement at Mines: The Department of Mineral Resources and Energy's Performance During the Financial Years 2017 to 31 March 2019*. Centre for Environmental Rights. <https://cer.org.za/wp-content/uploads/2020/12/DMRE-Environmental-CME-performance-FY2017-2019.pdf>
- Chafil, R. (2017). *National Strategy for Sustainable Development 2030*. Kingdom of Morocco. https://www.africancleancities.org/sites/default/files/2023-06/4_National_Strategy_for_Sustainable_Development_and_Territorialization_of_its_Implementation_in_Morocco.pdf
- Chukwudi, I. (2025, February 27). AfCFTA and the Geopolitics of Africa's Critical Minerals. *Proshare*. <https://proshare.co/articles/afcfta-and-the-geopolitics-of-africas-critical-minerals>
- Cibambo, A. (2025, June 6). Key Changes to the DRC Mining Code: A New Era for Investors and National Development. *JD Supra*. <https://www.jdsupra.com/legalnews/key-changes-to-the-drc-mining-code-a-6637576/>
- Decision on the Moratorium of the Recognition of Regional Economic Communities (RECs) Doc. EX.CL/278 (IX), Pub. L. No. Assembly/AU/Dec.112 (VII) (2006). <http://archives.au.int/handle/123456789/938>
- Department of Mineral and Petroleum Resources. (2025). *Critical Minerals and Metals Strategy*. Republic of South Africa. https://www.gov.za/sites/default/files/gcis_document/202505/critical-minerals-and-metals-strategy-south-africa-2025.pdf
- DIRCO. (n.d.). *Bilateral Relations: Botswana (Republic of)*. Department of International Relations and Cooperation, Republic of South Africa. Department of International Relations and Cooperation, Republic of South Africa. Retrieved July 5, 2025, from <https://dirco.gov.za/bilateral-relations/>
- DTIC. (2023). *Electric Vehicles White Paper*. Department of Trade, Industry and Competition, Republic of South Africa. <https://www.thedtic.gov.za/wp-content/uploads/EV-White-Paper.pdf>
- EAC. (n.d.). Development and Promotion of Extractive Industries and Mineral Value Addition. *East African Community*. Retrieved <https://www.eac.int/industry/mineral-processing>
- Eboh, C. (2025, April 17). Nigeria signs minerals pact with South Africa in diversification push. *Reuters*. <https://www.reuters.com/world/africa/nigeria-signs-minerals-pact-with-south-africa-diversification-push-2025-04-17/>
- ECOWAS Commission. (1993). *Economic Community of West African States (ECOWAS) Revised Treaty*. Economic Community of West African States. <https://www.ecowas.int/wp-content/uploads/2022/08/Revised-treaty-1.pdf>
- EITI. (n.d.). *Democratic Republic of Congo*. Extractive Industries Transparency Initiative. Retrieved <https://eiti.org/countries/democratic-republic-congo>
- El-Shaar, H., & António, G. D. F. (2022). *Policy Brief on the African Continental Free Trade Area (AfCFTA) [Africa is delivering the AfCFTA: whoever thinks otherwise is wrong]*. United Nations. https://www.un.org/osaa/sites/default/files/un_brand_report_web_august_2020_v3-en.pdf
- Environmental Assessment Act (2011). <https://gov.bw/sites/default/files/2020-02/Environmental%20Assessment%20Act%202011.pdf>
- Environmental Assessment (Amendment) Act (2020). <https://faolex.fao.org/docs/pdf/bot227876.pdf>
- Environmental Protection Act, 2025 (Act 1124) (2025). <https://faolex.fao.org/docs/pdf/gha232276.pdf>
- Evans, M. (2024, November 22). Evolution Energy Minerals site works now underway at Chilalo Graphite Project. *Proactive*. <https://www.proactiveinvestors.com/companies/news/1061256/evolution-energy-minerals-site-works-now-underway-at-chilalo-graphite-project-1061256.html>

- Evolution Energy Minerals. (n.d.). *Chilalo Graphite Project*. Evolution Energy Minerals. Retrieved <https://evolutionenergyminerals.com.au/chilalo-graphite-project/>
- Evolution Energy Minerals. (2022, August 15). Government approval of Resettlement Action Plan. *Listcorp*. <https://www.listcorp.com/asx/ev1/evolution-energy-minerals-limited/news/government-approval-of-resettlement-action-plan-2747180.html>
- Federal Republic of Nigeria. (2024). *Nigeria's First Biennial Transparency Report to the UNFCCC*. United Nations Framework Convention on Climate Change. <https://unfccc.int/sites/default/files/resource/Nigeria%20BTR1%20.pdf>
- Financial Reporting Council of Nigeria. (2026). *Roadmap Report for the Adoption of IFRS Sustainability Disclosure Standards in Nigeria (Amended 2026)*. Federal Republic of Nigeria. <https://frcnigeria.gov.ng/wp-content/uploads/2026/02/Roadmap-Report-for-the-Adoption-of-IFRS-Sustainability-Disclosure-Standards-in-Nigeria-Amended-2026-.pdf>
- Flaherty, A. F. (2016). Indigenous Land Rights and Self-Determination in Botswana. *Indigenous Policy Journal*, 27(1), 1–13. https://scholarworks.merrimack.edu/pol_facpub/17/
- GCIS. (2012). *Mineral Resources: Pocket Guide to South Africa*. Department of Government Communication and Information Systems, Republic of South Africa. <https://www.gcis.gov.za/sites/default/files/docs/resourcecentre/pocketguide/2012/15%20Mineral%20Resources.pdf>
- IEA. (2022a, May 3). *Law No. 11/009 of 09 July 2011 on fundamental principles relating to the protection of the environment*. International Energy Agency. <https://www.iea.org/policies/11937-law-no-11009-of-09-july-2011-on-fundamental-principles-relating-to-the-protection-of-the-environment>
- IEA. (2022b, November 3). *Strategic Minerals List*. International Energy Agency. <https://www.iea.org/policies/16799-strategic-minerals-list>
- IGF. (2018). *Botswana: Downstream Linkages*. Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development. <https://www.iisd.org/sites/default/files/publications/case-study-botswana-downstream-linkages.pdf>
- IRENA. (2017a). *Renewable energy benefits: Leveraging local capacity for onshore wind*. International Renewable Energy Agency. <https://www.irena.org/publications/2017/Jun/Renewable-Energy-Benefits-Leveraging-Local-Capacity-for-Onshore-Wind>
- IRENA. (2017b). *Renewable energy benefits: Leveraging local capacity for solar PV*. International Renewable Energy Agency. <https://www.irena.org/publications/2017/Jun/Renewable-Energy-Benefits-Leveraging-Local-Capacity-for-Solar-PV>
- IRENA. (2018). *Renewable energy benefits: Leveraging local capacity for offshore wind*. International Renewable Energy Agency. <https://www.irena.org/publications/2018/May/Leveraging-Local-Capacity-for-Offshore-Wind>
- IRENA. (2021). *Renewable energy benefits: Leveraging local capacity for solar water heaters*. International Renewable Energy Agency. <https://www.irena.org/Publications/2021/Jul/Renewable-energy-benefits-Leveraging-local-capacity-for-solar-water-heaters>
- IRENA. (2023a). *Geopolitics of the energy transition: Critical materials*. International Renewable Energy Agency. <https://www.irena.org/Publications/2023/Jul/Geopolitics-of-the-Energy-Transition-Critical-Materials>
- IRENA. (2023b). *Renewable energy benefits: Leveraging local capacity for small-scale hydropower*. International Renewable Energy Agency. <https://www.irena.org/Publications/2023/Sep/Renewable-energy-benefits-Leveraging-local-capacity-for-small-scale-hydropower>
- IRENA. (2024). *Critical materials: Batteries for electric vehicles*. International Renewable Energy Agency. <https://www.irena.org/Publications/2024/Sep/Critical-materials-Batteries-for-electric-vehicles>
- IRENA. (2025). *Renewable energy benefits: Leveraging local capacity for concentrated solar power*. International Renewable Energy Agency. <https://www.irena.org/Publications/2025/Jan/Renewable-energy-benefits-Leveraging-local-capacity-for-concentrated-solar-power>
- IRENA. (2026). *Fostering a just energy transition: A framework for policy design*. International Renewable Energy Agency. <https://www.irena.org/Publications/2026/Jan/Fostering-a-just-energy-transition-A-framework-for-policy-design>
- IRENA & NUPI. (2024a). *Constructing a ranking of critical materials for the global energy transition*. International Renewable Energy Agency and Norwegian Institute of International Affairs. <https://www.irena.org/Publications/2024/Oct/Constructing-a-ranking-of-critical-materials-for-the-global-energy-transition>
- IRENA & NUPI. (2024b). *Critical materials for renewable energy: Improving data governance*. International Renewable Energy Agency. <https://www.irena.org/Publications/2024/Oct/Critical-materials-for-renewable-energy-Improving-data-governance>

- Isheloke, B. E., & von Blottnitz, H. (2023). Regional Mineral Beneficiation Policy Interventions in the SADC: Stakeholder Perspectives. *International Journal of Mass Communication*, 1, 27–37. https://www.researchgate.net/publication/347926708_Regional_mineral_beneficiation_policy_interventions_in_the_SADC_Industry_perspectives
- ITA. (2025). *Botswana Country Commercial Guide: Mining & Minerals*. US International Trade Administration. <https://www.trade.gov/country-commercial-guides/botswana-mining-minerals>
- Jansen van Vuuren, R. (2018, March 13). New DRC mining code will not alter positive outlook. *Mining Review Africa*. <https://www.miningreview.com/top-stories/new-drc-mining-law-will-not-alter-positive-outlook/>
- Jefferis, K. (2013). *Economic Accounting of Mineral Resources in Botswana*. Wealth Accounting and Valuation of Ecosystem Services. <https://econsult.co.bw/download/2016-econsult-botswana-economic-accounting-of-mineral-resources-in-botswana-wealth-accounting-and-the-valuation-of-ecosystem-services/>
- Jefferis, K. (2024, July 8). Management of Botswana's Diamond Revenues. *IMF PFM Blog*. <https://blog-pfm.imf.org/en/pfmblog/2024/07/management-of-botswana-diamond-revenues>
- Kamnitzer, R. (2024, November 26). Illegal gold mining drives deforestation in DRC reserve home to 'African unicorn.' *Mongabay*. <https://news.mongabay.com/2024/11/illegal-gold-mining-drives-deforestation-in-drc-reserve-home-to-african-unicorn/>
- Kara, S. (2025). *Blood batteries: The human rights and environmental impacts of cobalt mining in the Democratic Republic of the Congo*. University of Nottingham Rights Lab. <https://www.nottingham.ac.uk/research/beacons-of-excellence/rights-lab/resources/reports-and-briefings/2025/august/blood-batteries.pdf>
- Kgweetsi, O. (2025, May 30). Mining policy takes nationalist turn. *Mmegi Online*. <https://www.mmegi.bw/news/mining-policy-takes-nationalist-turn/news>
- Khandelwal, P. (2004). *COMESA and SADC: Prospects and Challenges for Regional Trade Integration* (WP/04/227). International Monetary Fund. <https://www.imf.org/external/pubs/ft/wp/2004/wp04227.pdf>
- Kingdom of Morocco. (n.d.). *National Sustainable Development Strategy (NSDS): Executive Summary*. Retrieved [https://www.greenpolicyplatform.org/sites/default/files/downloads/policy-database/ENG-SNDD_RESUME%20EXECUTIF-V24-D%20\(1\).pdf](https://www.greenpolicyplatform.org/sites/default/files/downloads/policy-database/ENG-SNDD_RESUME%20EXECUTIF-V24-D%20(1).pdf)
- Korinek, J. (2014). *Export Restrictions on Raw Materials: Experience with Alternative Policies in Botswana* (OECD Trade Policy Papers No. 163). Organization for Economic Co-operation and Development. <http://dx.doi.org/10.1787/5jzb6v86kz32-en>
- KPMG. (2024). *Nigerian Mining Sector Brief*. KPMG. <https://kpmg.com/ng/en/insights/2024/06/nigerian-mining-sector-brief.html>
- Lifzone Metals. (n.d.). *Kabanga Nickel*. Lifzone Metals. Retrieved <https://lifzonemetals.com/what-we-do/kabanga-nickel/>
- Lifzone Metals. (2025, June 2). Lifzone Metals Files Initial Assessment for the Kabanga Nickel Project in Tanzania. *Lifzone Metals*. <https://ir.lifzonemetals.com/news/press-releases/news-details/2025/Lifzone-Metals-Files-Initial-Assessment-for-the-Kabanga-Nickel-Project-in-Tanzania/default.aspx>
- Lui, A., Ayub, A., & Natai, L. (2023, August 22). The Mining (Corporate Social Responsibility) Regulations, 2023. *Clyde & Co*. <https://www.clydeco.com/en/insights/2023/08/the-mining-corporate-social-responsibility-regulat>
- Machira, P. (2025, April 24). Mining sector hits 10.1pc in total GDP across 2024. *The Guardian*. <https://www.ippmedia.com/the-guardian/news/local-news/read/mining-sector-hits-101pc-in-total-gdp-across-2024-2025-04-24-094333>
- Managem. (n.d.). Groupe Managem takes a giant step towards energy transition. *Managem*. Retrieved <https://www.managemgroup.com/en/groupe-managem-takes-giant-step-towards-energy-transition>
- Mapuva, J., & Muyengwa-Mapuva, L. (2014). The SADC regional bloc: What challenges and prospects for regional integration? *Law, Democracy and Development*, 18. <https://doi.org/10.4314/ldd.v18i1.2>
- Matata, L. (2025). *Economic Report Africa 2025: Advancing the implementation of the African Continental Free Trade Area (AfCFTA)*. Africa Sustainability Matters. <https://africasustainabilitymatters.com/economic-report-on-africa-2025-advancing-the-implementation-of-the-african-continental-free-trade-areaafcfat/>
- MIIF. (n.d.). *Home page*. Minerals Income Investment Fund, Republic of Ghana. Retrieved <https://miif.gov.gh/>
- MINAFFET. (2019, March 19). Rwanda and Morocco Hold 1st Joint Permanent Commission. *Ministry of Foreign Affairs and International Cooperation, Republic of Rwanda*. <https://www.minaffet.gov.rw/updates/news-details/rwanda-and-morocco-hold-1st-joint-permanent-commission>

- Minerals Commission of Ghana. (2025). *Proposed Amendments to the Minerals and Mining Act, 2006 (Act 703)*. Minerals Commission of Ghana. <https://www.mincom.gov.gh/wp-content/uploads/2025/05/PROPOSED-AMENDMENTS-ACT-703.pdf>
- Minerals Council of South Africa v Minister of Mineral Resources and Energy et al., No. 20341/19 (High Court of South Africa, Gauteng Division, Pretoria September 21, 2021). <https://www.saflii.org/za/cases/ZAGPPHC/2021/623.pdf>
- Minerals Development Fund Act (Act 912) (2016). <https://ghalii.org/akn/gh/act/2016/912/eng@2016-03-30/publication>
- Mines and Minerals Act (1999). <https://faolex.fao.org/docs/pdf/bot50854.pdf>
- Mining Indaba. (2025, August 12). Botswana's pivot to critical minerals powered by diamonds. *Mining Indaba*. <https://miningindaba.com/articles/botswanas-pivot-to-critical-minerals-powered>
- Mining Review Africa. (2025, July 25). West Africa's mining industry: Unlocking the region's resource wealth. *Mining Review Africa*. <https://www.miningreview.com/west-africa/west-africas-mining-industry-unlocking-the-regions-resource-wealth/>
- Mining See. (2024, September 25). Tanzania's commitment to developing critical minerals for a sustainable future. *Mining See*. <https://www.miningsee.eu/tanzanias-commitment-to-developing-critical-minerals-for-a-sustainable-future/>
- Mining Technology. (2024, July 4). Chilalo Graphite Project, Tanzania. *Mining Technology*. <https://www.mining-technology.com/projects/chilalo-graphite-project/>
- Ministry of Finance. (2025). *2023 GHEITI Mining Sector Report*. Ghana Extractive Industries Transparency Initiatives Secretariat. <https://eiti.org/sites/default/files/2023%20gheiti%20mining%20sector%20reconciliation%20report.pdf>
- Ministry of Minerals. (2025, March 19). Tanzania Set a Benchmark for Small Scale Mining in Africa. *United Republic of Tanzania*. <https://www.madini.go.tz/page/b54b12b7-d5e0-439f-99d1-ea4bebe53c9b/>
- MMSD. (n.d.). *Community development agreement application submission*. Ministry of Mines and Steel Development, Federal Republic of Nigeria. Retrieved <https://portal.minesandsteel.gov.ng/Documents/Guidelines/CommunityDevelopmentAgreement.pdf>
- Mudodosi, B. (2024, December 19). After decades of challenges, the DRC must deliver on sustainable forest governance. *Global Witness*. <https://globalwitness.org/en/campaigns/forests/after-decades-of-challenges-the-drc-must-deliver-on-sustainable-forest-governance/>
- Naveed, A., & Vazir, C. (2023). *Value Amidst Transition: Evaluating Strategic Opportunities for Value Addition in the Democratic Republic of Congo* (No. 204; M-RCBG Associate Working Paper Series). Harvard Kennedy School. https://www.hks.harvard.edu/sites/default/files/centers/mrcbg/working.papers/204_AWP_final.pdf
- Ndlovu, X. A., & Vandome, C. (2024). *Mineral Resource Governance in Botswana*. International Institute for Democracy and Electoral Assistance. <https://www.idea.int/sites/default/files/2025-02/mineral-resource-governance-in-botswana.pdf>
- Ngocho, B., & Magai, S. (2020, August 10). Mining in Tanzania: Effects of the mining legal framework overhaul. *DLA Piper Africa*. <https://www.dlapiper.com/en/insights/publications/2020/08/africa-connected-issue-4/6tanzania-mining-legal-framework-overhaul>
- North Africa Post. (2025, August 4). Morocco launches comprehensive mining sector reform to attract investment. *The North Africa Post*. <https://northafricapost.com/89370-morocco-launches-comprehensive-mining-sector-reform-to-attract-investment.html>
- OCP Group. (n.d.). *Investment Plan*. OCP Group. Retrieved April 7, 2026, from <https://www.ocpgroup.ma/en/our-sustainability-commitments/investment-plan>
- OCP Group. (2022, December 16). OCP Group launches a \$13 billion Green Investment Strategy. *OCP Group*. <https://www.ocpgroup.ma/en/news/ocp-group-launches-13-billion-green-investment-strategy>
- OCP Group. (2026). *Our Sustainability Commitments*. OCP Group. <https://www.ocpgroup.ma/en/sustainability/our-sustainability-commitments>
- Olayiwola, W. (2020). *Governing the Interface between the African Continental Free Trade Area and Regional Economic Communities Free Trade Areas: Issues, Opportunities and Challenges*. United Nations Economic Commission for Africa. https://archive.uneca.org/sites/default/files/uploaded-documents/RITD/2020/governing_interface_between_afcfta_and_recs_afcfta_issues_opportunities_and_challenges_revised_final_version_as_at_nov_2_2020.pdf

- Onanuga, B. (2025, May 25). Tinubu's mining reforms yield six-fold increase in revenue, \$800M foreign investment – Alake. *Premium Times*. <https://www.premiumtimesng.com/news/more-news/796786-tinubus-mining-reforms-yield-six-fold-increase-in-revenue-800m-foreign-investment-alake.html>
- Onyango, E. (2025, May 16). New legal reforms to help combat climate change, strengthen environmental protection in Tanzania. *The Guardian*. <https://www.ippmedia.com/the-guardian/features/read/new-legal-reforms-to-help-combat-climate-change-strengthen-environmental-protection-in-tanzania-2025-05-16-124647>
- Oyewole, B. (2018). *Strengthening development linkages from the mineral resources sector in Central Africa*. United Nations Conference on Trade and Development. https://unctad.org/system/files/official-document/ditccominf2018d4_en.pdf
- Pallotti, A. (2004). SADC: A development community with a development policy? *Review of African Political Economy*, 31(101), 513–531. <https://doi.org/10.1080/0305624042000295576>
- Prince, D. (2024, April 10). Examining the Shift Towards Local Value Addition in Africa's Mining Industry. *African Leadership Magazine*. <https://www.africanleadershipmagazine.co.uk/examining-the-shift-towards-local-value-addition-in-africas-mining-industry>
- Quarshie, N., & George-Ikoli, T. (2022, March 9). Ending Nigeria's Oil Dependency: Not If, But When...and How. *Natural Resource Governance Institute*. <https://resourcegovernance.org/articles/ending-nigerias-oil-dependency-not-if-whenand-how>
- RAID & AFREWATCH. (2024). *Beneath the Green: A Critical Look at the Environmental and Human Costs of Industrial Cobalt Mining in DRC*. Our Energy Policy. <https://www.ourenergypolicy.org/resources/beneath-the-green-a-critical-look-at-the-environmental-and-human-costs-of-industrial-cobalt-mining-in-drc/>
- Rampai, T., & Nupen, S. (2024, February 1). Impact of the AFCFTA agreement on mining sector trade alliances. *African Mining*. <https://www.africanmining.co.za/2024/02/01/impact-of-the-afcfta-agreement-on-mining-sector-trade-alliances>
- Republic of Ghana. (2014). *Minerals and Mining Policy of Ghana*. Republic of Ghana. <https://www.mincom.gov.gh/wp-content/uploads/2021/06/Mineral-and-Mining-Policy-Ghana.pdf>
- Republic of South Africa. (2018, September 27). *Broad-Based Socio-Economic Empowerment Charter for the Mining and Minerals Industry*. Republic of South Africa. https://www.gov.za/sites/default/files/gcis_document/201809/41934gon1002.pdf
- Sabiiti, D. (2025, May 12). Tanzania sets bold agenda for 2025/2026: Prioritizes strategic minerals and digital transformation. *KT Press*. <https://www.ktpress.rw/2025/05/tanzania-sets-bold-agenda-for-2025-2026-prioritizes-strategic-minerals-and-digital-transformation/>
- SADC. (1997). *Protocol on Mining in the Southern African Development Community*. Southern African Development Community. https://www.sadc.int/sites/default/files/2021-08/Protocol_on_Mining.pdf
- Sandell-Hay, C. (2022). Ghana Looking to Add Critical Mineral Production to Its Golden Riches. *The Assay*. <https://www.theassay.com/articles/feature-story/ghana-looking-to-add-critical-mineral-production-to-its-golden-riches/>
- SCDM. (2021). *The New Development Model: Releasing energies and regaining trust to accelerate the march of progress and prosperity for all*. Kingdom of Morocco. <https://www.hcp.ma/attachment/2327977/>
- Solomon, L. C., & Odife, I. (2025). Politics, Prospects and Problems of Regional Integration: A Case Study of the African Union. *Kenneth Dike Journal of African Studies*, 4(2). <https://nigerianjournalonline.org/index.php/KDJAS/article/view/1063/995>
- Soulé, F., Butu, M. M., & Amoah-Darkwah, E. (2025). *Can Critical Mineral Deals Benefit Local Communities? Insights from Ghana's Lithium Project*. Carnegie Endowment for International Peace. <https://carnegieendowment.org/research/2025/07/can-critical-mineral-deals-benefit-local-communities-insights-from-ghanas-lithium-project>
- Sustainable Energy for All & Africa Renewable Energy Manufacturing Initiative. (2025). *Green Manufacturing Policy and Investment Guide: Ghana*. Sustainable Energy for All and Africa Renewable Energy Manufacturing Initiative. https://www.seforall.org/system/files/2025-03/Ghana_Green_Manufacturing_Policy_Investment_Guide.pdf
- Taib, M. (2025). *2020–2021 Minerals Yearbook: Morocco*. United States Geological Survey. <https://pubs.usgs.gov/myb/vol3/2020-21/myb3-2020-21-morocco.pdf>
- The World Bank. (2007). *Assessment of the environmental regulatory framework of the mining sector*. The World Bank. <https://documents1.worldbank.org/curated/en/148031468302995494/pdf/561770ESW0whit10Box349489B01PUBLIC1.pdf>
- The World Bank. (2016). *Skills Implications of Botswana's Diamond Beneficiation Strategy*. The World Bank. <https://documents1.worldbank.org/curated/en/412471468014434083/pdf/930490WP0P11940C00Botswana0Note04wc.pdf>

- The World Bank. (2021). *Cobalt in the Democratic Republic of Congo*. The World Bank. <https://documents1.worldbank.org/curated/en/099500001312236438/pdf/P1723770a0f570093092050c1bdd6a29df.pdf>
- Therayil, R. (2024, March 22). Lifezone Metals gets licence for refinery at Kabanga nickel project. *NS Energy*. <https://www.nsenenergybusiness.com/company-news/lifezone-metals-gets-licence-for-refinery-at-kabanga-nickel-project/>
- Toroskainen, K., Malden, A., & Okenda, J. P. (2020). *DRC's Mining Revenues: Increasing Accountability by Analyzing Payments to Governments Reports*. Natural Resource Governance Institute. <https://resourcegovernance.org/sites/default/files/documents/drc-mining-revenues-increasing-accountability-by-analyzing-payments-to-governments-reports.pdf>
- Trading Economics. (n.d.). *Botswana Exports* [Dataset]. Trading Economics. Retrieved <https://tradingeconomics.com/botswana/exports>
- tralac. (n.d.). *African Continental Free Trade Area (AfCFTA) Legal Texts and Policy Documents*. Trade Law Centre NPC. Tralac. Retrieved June 24, 2025, from <https://www.tralac.org/resources/by-region/cfta.html>
- Tshwene-Mauchaza, B. (2015). *Major Constraints of the Environmental Impact Assessment Process in Botswana* (Policy briefing 145). South African Institute of International Affairs. <https://saiia.org.za/wp-content/uploads/2015/12/Policy-Briefing-145.pdf>
- Tunji, S. (2025, September 13). NUPRC revokes oil firm's licence over safety violations. *Punch*. <https://punchng.com/nuprc-revokes-oil-firms-licence-over-safety-violations/>
- UNCTAD. (2016, February 12). Strengthening the capacity of the Economic Community for Central African States to enhance development linkages from the extractive sector. *United Nations Conference on Trade and Development*. <https://unctad.org/news/strengthening-capacity-economic-community-central-african-states-enhance-development-linkages>
- UNECA. (2016). *African Geological and Mineral Information System (GMIS) Strategy: Promoting Geological Knowledge as a Tool for Investment and Transparency*. United Nations Economic Commission for Africa. <https://repository.uneca.org/bitstream/handle/10855/23883/b11870138.pdf>
- UNECA. (2018a). *Africa Mining Vision: African Minerals Governance Framework*. United Nations Economic Commission for Africa. https://archive.uneca.org/sites/default/files/PublicationFiles/african_mining_vision_african_mineral_governance_framework.pdf
- UNECA. (2018b). *Structural transformation, employment, production and society: Morocco*. United Nations Economic Commission for Africa. <https://repository.uneca.org/server/api/core/bitstreams/acd7814c-3356-42d2-a0db-c9251fce08ab/content>
- UNECA. (2024, April 15). Zambia and DRC to implement an innovative transboundary battery and electric vehicle special economic zone. *United Nations Economic Commission for Africa*. <https://www.uneca.org/stories/zambia-and-drc-to-implement-an-innovative-transboundary-battery-and-electric-vehicle-special>
- UNECA. (2025). *Delivering on the African Economic Community: Towards an African Continental Customs Union and African Continental Common Market*. United Nations Economic Commission for Africa. https://www.uneca.org/sites/default/files/fullpublicationfiles/ARIA%20XI_Book_EN_12June_rev1.pdf
- UNECA & MEPC. (2004). *Harmonization of Mining Policies, Standards, Legislative and Regulatory Frameworks in Southern Africa* (ECA/SA/TPub/Mining/2004/03). United Nations Economic Commission for Africa. https://www.sadc.int/sites/default/files/2021-08/Mining-_Harmonisation_Study.pdf
- UNECE. (2009). *United Nations Framework Classification for Fossil Energy and Mineral Reserves and Resources 2009 incorporating Specifications for its Application*. United Nations Economic Commission for Europe. <https://www.un-ilibrary.org/content/books/9789210565165/read>
- United Republic of Tanzania. (2025). *The Tanzania Development Vision 2050 (DIRA 2050)*. National Planning Commission. <https://www.planning.go.tz/uploads/documents/en-1752762713-THE%20TANZANIA%20DEVELOPMENT%20VISION%202050.pdf>
- US Department of State. (2019). *2019 Investment Climate Statements: Botswana*. US Department of State. <https://www.state.gov/reports/2019-investment-climate-statements/botswana>
- World Bank Group. (2023, December 22). Infrastructure Investments are Improving Lives and Livelihoods in Tanzania. *World Bank Group*. <https://www.worldbank.org/en/results/2023/12/15/infrastructure-investments-are-improving-lives-and-livelihoods-in-afe-tanzania>
- Yager, T. R. (2023). *The Mineral Industry of Botswana*. US Geological Survey. <https://pubs.usgs.gov/myb/vol3/2019/myb3-2019-botswana.pdf>
- Zouiten, S. (2025, June 3). Morocco Launches Updated Green Strategy to Achieve Sustainable Development by 2035. *Morocco World News*. <https://www.moroccoworldnews.com/2025/06/207149/morocco-launches-updated-green-strategy-to-achieve-sustainable-development-by-2035/>

Stockholm Environment Institute is an international non-profit research institute that tackles climate, environment and sustainable development challenges.

We empower partners to meet these challenges through cutting-edge research, knowledge, tools and capacity building. Through SEI's HQ and seven centres around the world, we engage with policy, practice and development action for a sustainable, prosperous future for all.

Visit us at

1 SEI Headquarters 2 SEI York 3 SEI US 4 SEI Tallinn 5 SEI Oxford 6 SEI Asia 7 SEI Africa 8 SEI Latin America

