

Perspectives.

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**Towards inclusive
and transparent
environmental
governance for
critical minerals
and metals in
Africa**

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Executive Summary

Globally, humanity is currently contending with a triple planetary crisis: climate change, pollution and biodiversity loss. For Africa, climate change has become a risk multiplier that threatens developmental gains and forces a rethink of the business-as-usual model in all sectors. At the core of finding opportunities and addressing the challenges posed by the impacts of climate change is coherent environmental governance. This is also one of the challenges that African countries contend with. Therefore, the rise of the importance of critical minerals and metals for the global energy transition presents an opportunity for African countries to address some of the shortcomings in environmental governance.

This article argues that the rise in the importance of critical minerals and metals for the global energy transition presents a possible opportunity for improved environmental governance in the region. Further, the article observes that through export revenue, employment creation, supply chains, infrastructure development and other domestic linkages, these critical metals and minerals could be economic cornerstones of many African countries. However, this can be made possible only through robust governance frameworks. At its core, environmental governance comprises mechanisms, processes, and institutions, through which citizens and groups articulate their interests, exercise their legal rights, meet their obligations, and mediate their differences. Consequently, this paper concludes that the inclusive, transparent regulation of critical minerals and metals potentially improves socio-economic and environmental outcomes in the region. By neglecting these criteria, it is foreseeable, that the new demand for critical minerals and metals will not benefit the broader population but rather perpetuate existing inequalities.

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Introduction

Good environmental governance is crucial to achieving sustainable development and protection of the environment.¹ Environmental governance is thus an important instrument aimed at reducing tensions within and between countries on the use of natural resources, thereby contributing to building trust and confidence at all levels and, as a consequence, to strengthening security. With the advent of climate change, research in environmental governance tends to focus on resource scarcity, conflicts, allocation and access to natural resources, and biodiversity conservation in agricultural, forest, freshwater, marine and atmospheric systems. While research has focused on these broad areas, one finding that echoes across the board is that good environmental governance is one of

the most crucial factors that either enable or undermine the efficacy of environmental management and conservation.

The nexus between critical minerals and the environment is multifaceted and interconnected. The extraction of critical minerals often involves significant environmental impacts. Open-pit or underground mining destroys habitats and landscapes, causes soil erosion, and water pollution.² Moreover, the extraction and processing of critical minerals requires substantial land and resource use. This leads to land degradation, deforestation, and conflicts with local communities over land rights. Critical mineral extraction may also occur in areas with high biodiversity value. It is therefore evident that the extractives industry

has been one of the sectors that has been under the spotlight when it comes to environmental governance.

From the onset, it is pertinent to point out that mineral wealth is neither an unalloyed blessing nor a guarantor of good development outcomes.³ Many resource-rich economies are often poor, despite their mineral wealth.⁴ With the importance of critical metals and minerals due to the need to transition to low-carbon pathways, resource-rich countries must strengthen governance institutions. This paper argues that the case of critical metals and minerals presents an opportunity to improve environmental governance in the region. However, this can be made possible only through robust governance frameworks.

1 According to the United Nations Environment Programme (UNEP), environmental governance is defined as the rules, practices, policies, and institutions that shape how humans interact with the environment. See https://wedocs.unep.org/bitstream/handle/20.500.11822/7935/Environmental_Governance.pdf?sequence=5&isAllowed=y. For an in-depth discussion of environmental governance refer to section 2 of this article.

2 Sammy Witchalls, *The Environmental Problems Caused by Mining* (2022) <https://earth.org/environmental-problems-caused-by-mining/#>.

3 See Cullen S. Hendrix, "Building Downstream Capacity for Critical Minerals in Africa" (2022) Peterson Institute for International Economics, pp1-13.

4 UNEP, *Conflict Prevention in Resource-Rich Economies* (2011), pp1-48. See also Sudhir C. Rajan, "Poor Little Rich Countries: Another Look at the 'Resource-Curse'" in S. Vanderheiden's *The Politics of Energy* (2012), pp11-26.

2. Environmental Governance

Generally, governance is defined as the institutions, structures, and processes that determine who makes decisions, how and for whom such decisions are made, what actions are taken and by whom and to what effect.⁵ The specific aim of environmental governance, in particular, is to manage individual behaviours or collective actions in pursuit of public environmental goods and environmentally-related societal outcomes.⁶ To fully comprehend environmental governance one must understand how decisions related to the environment are made and whether resultant policies and processes translate to environmentally and socially sustainable outcomes. Therefore, an analysis of environmental governance focuses on the capacity, functioning, and performance of the structural, institutional, and procedural elements of governance.⁷

The core objective of environmental governance is to maintain and improve the capacity of environmental systems, to function and produce ecosystem services through the sustainable growth of species, habitats and biodiversity. This objective is three-tiered. The attributes of the first tier, relating to achieving effective environmental systems, include direction, coordination, accountability and efficient systems.⁸ The second tier of the objective, relating to social equitability, means that environmental

governance must engage inclusive decision-making processes that produce socio-economic outcomes that are participatory, fair and just.⁹ Such decision-making processes should include women, minority groups, youth, and indigenous peoples. The third tier, which relates to sustainable growth, highlights the need for environmental governance to be responsive, ensuring adaptability to both dynamic environmental and social conditions in diverse contexts.¹⁰

3. Overview of Critical Raw Minerals and Metals in Sub-Saharan Africa

As a continent, Africa houses approximately 30% of the world's mineral reserves, most of which have been considered to be transitional minerals, critical to renewable and low-carbon technologies including solar, electric vehicles, battery storage, green hydrogen, and geothermal. Examples of these include bauxite, cobalt, copper, lithium, and nickel, among others. Figure 1 maps out African countries

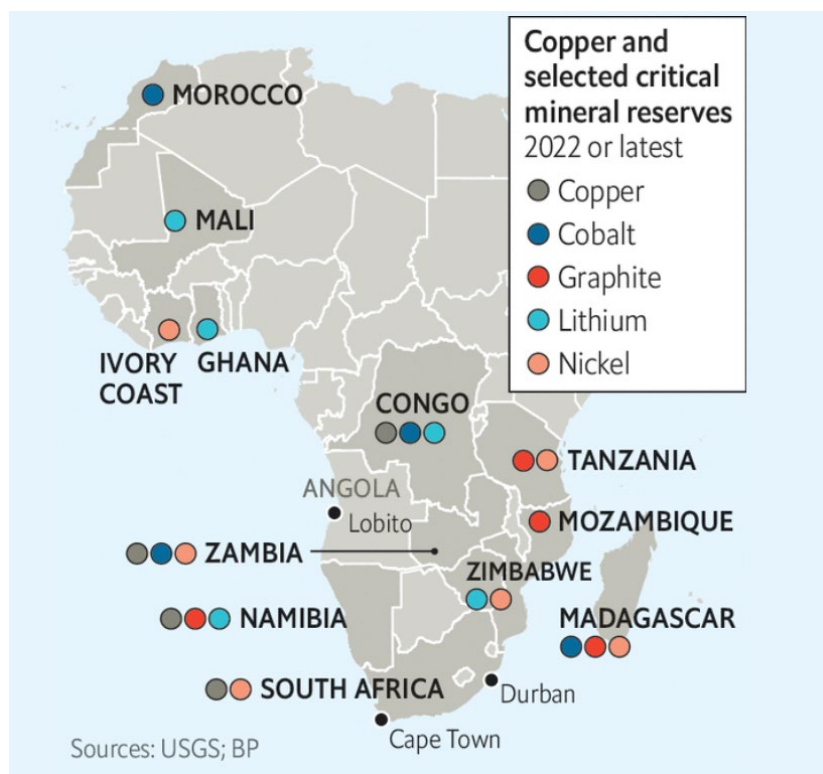


Fig. 1: Copper and selected critical mineral reserves.
Source: United States Geological Survey 2022.

5 Graham, J., Amos, B., & Plumtree, T, *Governance principles for protected areas in the 21st century* (2003) Ottawa, ON: Institute on Governance, Parks Canada, and CIDA.

6 Armitage, D., de Loë, R., & Plummer, R "Environmental governance and its implications for conservation practice" (2012) *Conservation Letters*, pp245-255.

7 See Bennett and Satterfield (above).

8 Wyborn, C. A, "Connecting knowledge with action through co-productive capacities: Adaptive governance and connectivity conservation" (2015) *Ecology and Society*, 20 (1), 11.

9 Borrini-Feyerabend, G. & Hill, R, "Governance for the conservation of nature" in Worboys, G.L., Lockwood, M., Kothari, A., Feary, S. & Pulsford, I. eds. *Protected Area Governance and Management*. (2015), pp169-206.

10 Armitage, D., & Plummer, R, "Adapting and transforming: Governance for navigating change" in D. Armitage & R. Plummer (Eds.), *Adaptive capacity and environmental governance* (2011), pp287-302.

and the critical minerals that are in those countries, with countries like Namibia, Zimbabwe and South Africa housing at least two of these. To meet the expected rise in the global demand for renewable energies and low-carbon pathways, the production of minerals and metals such as lithium, graphite and cobalt should increase by nearly 500% by 2050.¹¹ Such would be difficult to achieve without the exploitation of Africa's resources.

Countries in Sub-Saharan African countries have the largest proven reserves of bauxite, cobalt, graphite, and nickel, all of which are critical to the energy transition.¹² Bauxite is the primary source of alumina ore,

a major component in construction, energy, and vehicle sectors for measures to reduce greenhouse gas emissions. Cobalt and lithium are used primarily in the production of the lithium-ion batteries used in electric vehicles and grid-scale storage. Graphite has a variety of applications, including batteries and solar panels. Nickel is important for improving the durability and weldability of steel deployed in dams and wind turbines and as a component of lithium-ion batteries.

This section exemplifies not only the amounts of minerals and metals that some African countries have but also the uses of those in facilitating the transition to low-carbon pathways. As

already alluded to, the exploitation of these resources is pivotal to keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius, as required by the Paris Agreement. However, the extraction of these minerals and metals must be done in a manner that minimises the harm to the environment. As such, good environmental governance stands as a key component if Africa is to meaningfully contribute to the energy transition without risking severe environmental damage.



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11 Mo Ibrahim Foundation, *Africa's Critical Minerals* (2022) <https://mo.ibrahim.foundation/sites/default/files/2022-11/minerals-resource-governance.pdf>.

12 These countries include Guinea (bauxite), the Democratic Republic of Congo (cobalt), Madagascar (graphite and nickel) and Mozambique (graphite). See Hendrix (n3 above).

4. An opportunity for improved environmental governance

For African countries to truly benefit from their vast mineral wealth, lessons must be drawn from decades of stagnant economic growth, high levels of unemployment, and widespread poverty spurred by the export of unprocessed extractives such as crude oil.¹³ For Africa's oil-producing nations, oil has generated significant government revenues and foreign exchange but its extraction has been capital-intensive, creating few associated jobs and most importantly resulted in vast environmental degradation. For instance, in Nigeria, Africa's largest crude oil producer, only 0.5% of the population is formally employed in the extractives.¹⁴ Elsewhere in Africa, natural resource wealth has equally not contributed to industrialisation and development.

Considering this background in resource management, the central question that arises with the additional value attached to the metals and minerals found in Africa due to the necessity to transition to low-carbon pathways is: What will be different this time? First, while Africa's role in the value chain extractives industry has been limited to the export of raw material, critical metals and minerals present an opportunity to change this. The processing of critical metals and minerals such as lithium and cobalt in Africa potentially results in increased production, job employment and

improved socio-economic outcomes. Second, due to greater greenhouse gas emissions because of higher levels of production, the Global North has a greater need for these metals and minerals for green energy technologies. This strategically places Africa in a position to call for investments that improve its institutional capacities and transfer technological know-how. Furthermore, the development of industrial sites will also lead to more investments in infrastructure as investors seek to minimise transport costs, for instance. Examples of this are already seen in the agreement between the Democratic Republic of Congo, Zambia and the United States of America in the creation of an electric vehicle (EV) battery factory.¹⁵ The inclusion of such terms in investment agreements could assist African countries in improving their mineral resource and environmental governance.

While agreements like the USA-DRC-Zambia EV agreement are imperative in driving export revenue, boosting employment creation and facilitating the development of infrastructure that African countries with critical minerals will need in the long term, there is also a correlation between good governance and improved environmental governance. The extent to which good governance has a bearing on environmental governance is assessed through the six indicators of the World Bank's governance ranking and these include accountability,

political stability and absence of violence, government effectiveness, regulatory quality, rule of law, and control of corruption.¹⁶ This is not surprising because the quality of governance reflects the ability of a government to enact legislation and the extent to which the public can hold policymakers accountable for the implementation (or otherwise) of effective environmental legislation and policies.¹⁷ Therefore, even if investment agreements that benefit African countries are entered into, these elements of good governance are indispensable to improving environmental governance.

In the extraction, processing, and use of critical minerals, there is usually the risk of creating environmental and social challenges. These include habitat and landscape destruction, water and air pollution, human rights concerns, and labour issues. Thus, there is an increasing need to adopt sustainable practices and ensure responsible sourcing throughout the supply chain.

13 Mo Ibrahim Foundation, *Africa's Critical Minerals* (2022) <https://mo.ibrahim.foundation/sites/default/files/2022-11/minerals-resource-governance.pdf>.

14 Nigeria Extractives Industries Transparency Initiative, *Solid Minerals Industry Report* (2020) https://eiti.org/sites/default/files/attachments/final_neiti_2020_sma_report_-_03-01-2022.pdf.

15 In December 2022, during the U.S.-Africa Leaders Summit in Washington, the United States signed a trilateral memorandum of understanding (MOU) with the DRC and Zambia for the development of an integrated value chain for the production of electric vehicles (EV) batteries. This MOU aims to develop a complete value chain around EV batteries in the DRC and Zambia, from the extraction of minerals to the assembly line. See <https://carnegieendowment.org/2023/08/21/what-u.s.-drc-zambia-electric-vehicle-batteries-deal-reveals-about-new-u.s.-approach-toward-africa-pub-90383>.

16 See Kaufmann Daniel, Kraay Aart and Mastruzzi Massimo, *Governance Matters VIII: Aggregate and Individual Governance Indicators, 1996–2008* (2009) *World Bank Policy Research Working Paper* <https://bit.ly/3LiBmI>.

17 Anja Berretta, *Environmental and Climate Policy in Africa: Regional Cohesion and National Challenges*, (2022) *Power Resources*, pp51-61 <https://www.kas.de/documents/259121/18783238/Environmental+and+Climate+Policy++in+Africa.pdf/985b3e54-7562-9646-63c5-dafeee33b7b7?version=1.1&t=1655199628628>.



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The African Ministerial Conference on the Environment (AMCEN) Nineteenth session in 2023 observes that the application of environmental standards for due diligence and traceability standards is critical to ensure the prioritisation of environmental sustainability and human rights in the minerals supply chain.¹⁸ Among key interventions in this aspect include habitat restoration after the closure of mines, pollution control, sustainable resource management, and circularity, among others. Additionally, the EU's Critical Raw Minerals Act is explicit in promoting sustainable sourcing of the 34 metals and minerals that it lists as critical for its competitiveness in green energy technologies.¹⁹ For instance, environmental, social and good governance (ESG) factors will play a significant role in investment decisions, aligning with the Critical Raw Materials Act's focus on sustainable resource management.

This means that African countries intending to enter into investments with EU companies must be in alignment with the sourcing requirements under the Act. These practices contribute to improving environmental governance in the exploitation of minerals and metals needed for the energy transition.

Moreover, in an effort to foster improved environmental governance in relation to critical minerals and metals, during the fourth session of the United Nations Environment Assembly, held in Nairobi on 11-15 March 2019, Member States adopted resolution UNEP/EA.4/Res.19 on mineral resource governance. The resolution requested the United Nations Environment Programme (UNEP) to collect information on sustainable practices, identify knowledge gaps and options for implementation strategies, and undertake an overview of existing

assessments of different governance initiatives and approaches relating to the sustainable management of metal and mineral resources. Although critical minerals were not specifically addressed, it can be inferred that their application is in the context of sustainable mining and sourcing of raw materials to decouple economic growth from environmental degradation through approaches that include resource efficiency, circular economy and reduction of the impacts associated with the materials needed for the transition to innovative and environmentally friendly economies.

18 African Ministerial Conference on the Environment, Progress in the Implementation of Decisions of the African Ministerial Conference on the Environment and Consideration of Emerging Environmental Issues: Critical Minerals and their Role in Energy Transitions in Africa (2023) https://wedocs.unep.org/bitstream/handle/20.500.11822/43012/minerals_africa.pdf?sequence=3&isAllowed=y.

19 Critical Raw Materials Act 2023.

Finally, AMCEN recommends strengthening environmental governance in its gaps and opportunities for critical minerals in clean energy transitions in Africa.²⁰

It observes that it is essential to assess and minimise the impacts of extraction and processing on the environment, on water sources, on biodiversity (including protected areas and endangered species) and on frontline communities. AMCEN notes that robust environmental legislation, regulation and policies are critical for protecting the environment and human wellbeing, and for supporting sustained economic growth from natural resource wealth.

The recommendation from AMCEN is a clarion call for the need for strong environmental governance in Africa. This comes at a time when most African countries and regional bodies have general mining legislation but do not have specific legislation (apart from policies) that regulates these critical minerals and metals, especially considering their global demand.

²⁰ See AMCEN (n 18 above).

Conclusion

The extraction of critical minerals and metals could significantly change the socio-economic status of most African countries. At the same time, by applying more rigorous ESG criteria and using the latest technologies, the environmental impact of mining could be reduced. The article has demonstrated that at the core of benefiting from the extraction of these minerals is strong environmental governance. Therefore, using the recommendations from AMCEN and the UNEP/EA.4/Res.19, African countries stand a chance to improve their environmental governance and change their development trajectories. It is also imperative to assess and minimise the impacts on biodiversity, including protected areas and endangered species.²¹ Finally, there is a historical opportunity for international cooperation to work together on these issues and provide an enabling environment that fosters improved environmental governance.

²¹ See AMCEN (n18 above).



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