

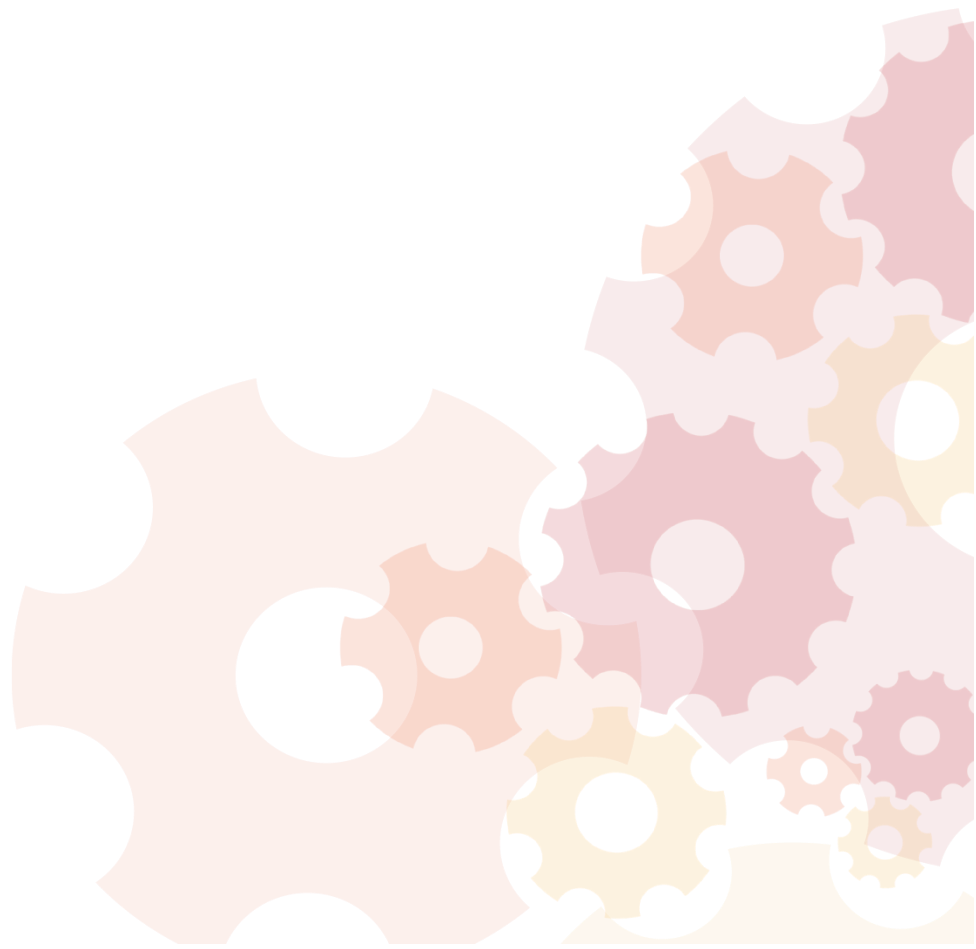


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Develop Africa's ESG standards for the sustainable extractive industry: a comparative study of mining firms

Lingfei Weng¹

Abstract: Africa is estimated to hold about 30 percent of the world's proven mineral reserves. Global demand for critical minerals highlights Africa's central role in the green energy transition and transformation. This resurgence of the mining boom raised awareness of the sustainability of the mining industry among stakeholders, including African policymakers and mining investors. African governments, such as those of Zimbabwe, Botswana, and Ghana, introduce regulatory incentives for companies that meet higher ESG standards, thereby contributing to Africa's sustainable extraction. However, the standards for most ESG frameworks are typically designed in the Global North. The metrics and assessment lenses are not realistic in the African setting. Over the past two decades, China has established advantageous supply chains for copper, cobalt, magnesium, and other critical minerals in Africa. Chinese mining investments in Africa have long been accused of environmental pollution and human rights abuses, among other issues. Their ESG assessments consistently perform significantly lower than those of Western mining companies. There is a lack of comprehensive and empirical evidence analysis comparing multiple ESG ratings within different mining companies, including Chinese and Western mining firms. This study aims to compare Western and Chinese mining companies in terms of their ESG ratings and practices, selecting Chinese state-owned companies (SOEs), joint venture firms, and Western mining firms as case studies. It reveals that neither of their ESG metrics and assessment is grounded in the realities of African nations, particularly failing to adequately account for local-level practices. The development of context-sensitive frameworks, rather than pursuing universal standards, becomes crucial. We argue that Africa needs their own framework of the ESG, and it must not come at the expense of the interests of African nations as a whole. Nor should ESG be weaponized as a tool amid geopolitical rivalry, becoming yet another pretext to curb Africa's climb up the ladder.

Key words: ESG standards, ratings and practices, comparative study, mining firms, Africa

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I. Introduction

The concept of ESG emerged in a 2004 UN report titled 'Who Cares Wins', urging financial institutions to adopt environmental, social, and governance criteria for evaluating their investments (Amel-Zadeh & Serafeim, 2018). In recent years, ESG has become a buzzword for debate. Its criteria are criticized as both contradictory and costly to implement. Despite the proliferation of studies at both the corporate and national levels, there has been insufficient attention given to African countries - a gap that this research aims to address (Teresa, 2024). In Africa, the global demand for critical minerals highlights the contradictions between the 'environment,' 'social,' and 'governance' dimensions of ESG in the mining sector. Previous analyses have largely focused on the economically advanced regions of the mining industry, while neglecting the distinct sustainability challenges faced by African countries. Furthermore, existing work has not systematically explored regional disparities within Africa, a nuance that is further complicated by the continent's diverse political and economic landscapes and varying institutional capacities (Teresa, 2024). Compared to the spatial concentration of extractive industries in Central Africa, which creates unique environmental pressures, the agrarian economies of East Africa face different, region-specific sustainability challenges (Ferguson, 2005). Similarly, the significant role of informal economies in sustaining livelihoods and impacting both social and governance outcomes is rarely reflected in current ESG frameworks. The development of context-sensitive frameworks, rather than pursuing universal standards, becomes crucial as the diverse challenges are confronted across different economic and cultural contexts (Mishra & Pandey, 2025). It is essential to develop comprehensive frameworks that account for diverse economic contexts, such as those in Africa, and provide an enhanced critique of existing ESG paradigms.

ESG standards have been developed to mitigate negative environmental, social, and governance practices, which have historically posed challenges in the mining sector. In Africa, the extraction of critical minerals is already plagued with corruption and various related socio-economic and environmental governance challenges (IRENA, 2023). The lack of research in Africa and other developing countries suggests that current ESG studies may be concentrated in certain regions (particularly North America and Western Europe) and may not fully capture the diversity of sustainability challenges and solutions across the rest of the world. In the DRC and Zambia, for instance, the production of electric vehicles and lithium-ion batteries has contributed to a surging demand for cobalt and copper. The production of these critical minerals is associated with several ESG risks, including worker health and safety concerns, child labor, and water pollution (Tsang et al., 2023). Apart from that, there are contradictions in how African countries weigh ESG standards against other policy priorities. Particularly when mineral-rich African countries are determined to leverage critical mineral exploitation for industrial development, their governments must weigh their industrialization against ESG

standards where they conflict, sometimes favoring industrialization over certain ESG components (Acheampong & Logan, 2025; Teresa, 2024).

ESG is a highly heterogeneous space, and the multiple theoretical frameworks of ESG demonstrate the fragmentation. As multiple frameworks exist, they often lack integration and a critical perspective. The uncritical adoption of established theories without sufficient adaptation to ESG contexts has resulted in superficial applications rather than meaningful theoretical advancements (Li et al., 2018). The lack of integration among multiple frameworks undermines the field's ability to address complex sustainability challenges effectively. Many challenges face investors when choosing an ESG ratings provider due to the sheer number and diverse types of providers available, as well as the lack of correlation and consistency in ratings produced by different providers (Financial Times, 2023). The difficulty in accessing robust data used to determine ESG ratings is a significant barrier to the greater adoption of ESG strategies.

Rather than focusing on why ESG ratings differ, which has been discussed in previous studies. There is a lack of comprehensive analysis comparing multiple ESG ratings within the mining industry. China has become the second-largest investor in Africa, acquiring shares in foreign mining companies, mostly from Western companies. To date, no study has been conducted to assess the ESG performance of Chinese mining companies in Africa. For example, the differences between Western and Chinese mining companies, or between Chinese mining firms that are joint with Western firms and those that are not. This gap is crucial given the increasing focus on ESG in mining operations and its potential impact on recipient countries, especially mineral-rich African countries.

This study attempts to fill the knowledge gap in comparing mining companies with different ownerships operating in Africa. From a comparative perspective, this study selects both Western and Chinese mining companies as case studies, aiming to identify whether ESG ratings differ between Chinese and Western mining companies, and also among Chinese mining firms. If so, how different they are, what the differences are and why. To solidify this research with more comprehensive perspective, the study selects fully state-owned mining enterprise companies (SOEs), joint venture firms between China and Western firms, and Western mining firms as case studies. The case study of the mining industry is examined in terms of the company profile, ESG, and sustainability. Through this comparison, the study aims to reveal the ESG framework that Africa can develop in response to its different performances, in order to ensure that mining activities foster sustainable investments that eradicate poverty, enhance environmental sustainability, and promote social-economic prosperity.

The paper is structured as follows: Section 2 presents ESG as a debated topic, reviewing the pros and cons of implementing ESG and ESG rating providers to gain a deeper understanding

of the ESG ratings landscape. Section 3 presents stylized facts about the mining industry and its associated ESG challenges in Africa. Section 4 introduces the methodology we adopted in this study. Section 5 delves into the case study, focusing on mining companies in Africa, including those from West African countries and China. Section 6 presents the implications of ESG assessments of international mining firms for Africa's development priorities, and Section 7 concludes with a summary of the main research findings, providing insight into how African countries have tailored their own ESG standards to engage with international mining companies for sustainable extraction.

2. Debates on the conceptual framework of ESG

Since the late 20th century, theories and practices related to ecological conservation, consumer rights protection, and corporate social responsibility have emerged globally, laying the theoretical and practical groundwork for the ESG conceptual framework (Amel-Zadeh & Serafeim, 2018). At that time, Western countries experienced rapid economic growth driven by industrialization, yet simultaneously faced increasingly severe challenges concerning resources, the environment, and climate change. Alongside economic development, issues such as employee discrimination, corporate governance, financial scandals, and severe external pollution caused by businesses emerged, prompting reflection on sustainable business models. Against this backdrop, corporate social responsibility investment practices gradually entered the commercial sphere. Following the 1990s, the United Nations Environment Programme Finance Initiative (UNEPFI) issued the Statement of Commitment on Sustainable Development, recommending that enterprises integrate environmental and social factors into their operations and strategies (Mukhtar et al., 2025).

The ESG concept reached a historical milestone in 2004, when the UN Global Compact (UNGC) first comprehensively introduced the concept in its report, 'Who Cares Wins.' In 2006, the United Nations established the Principles for Responsible Investment (PRI), formally proposing that ESG investing should adhere to six fundamental investment principles, thereby encouraging investment institutions to incorporate ESG considerations into their decision-making (Mishra & Pandey, 2025). In 2008, Goldman Sachs introduced the Sustainable Equity Portfolio, which was based on its ESG research framework. Following the Paris Agreement signed in 2015, global consensus on climate change further catalyzed the evolution of the ESG framework. International organizations, global think tanks, and research institutions have continuously deepened ESG concepts by introducing related disclosure standards, assessment methodologies, and investment products to advance the development and refinement of ESG standards (Tsang et al., 2023).

The global ESG landscape has taken its initial shape and is expanding rapidly. In recent years,

the EU has significantly increased its investment and policy support in ESG, embedding ESG considerations at the core of corporate decision-making through legal frameworks, financial incentives, and market oversight. This has established a comprehensive and rigorous regulatory system and policy framework for ESG. Other countries, such as the United Kingdom, Australia, Canada, South Korea, and Japan, have developed policies and action plans addressing themes including climate change, low-carbon transition, and green finance, engaging more market forces to standardize ESG practices. According to data from the International Finance Corporation (IFC), global ESG assets reached over \$35 trillion by the end of 2023, accounting for one-third of total global assets under management. This investment scale is projected to exceed \$40 trillion by 2030 (Bloomberg, 2024).

As global concern over climate change intensifies, many ESG advocates are calling for reduced investment in fossil fuels and a push toward renewable energy adoption. Over the past two decades, ESG has remained a subject of debate in policy-making and investment practice. Significant variations exist in approaches and implementation intensity across countries and regions. Unlike other developed economies, the US stands out as one of the few nations in which ESG policy implementation has been inconsistent, creating significant uncertainty about its future trajectory. Since 2022, approximately 165 anti-ESG proposals have been introduced across 37 states in the US. More recently, Donald Trump claimed that 'climate change is the greatest con job ever perpetrated on the world' at the United Nations. The recent surge of ESG opposition movements in the US has further intensified these debates.

The debate over ESG has become increasingly ideologized and politicized, transforming ESG into a battleground marked by fierce contention and so-called 'political fog' (Cort, 2023). The current retreat from ESG-oriented investing is expected to continue, as sustainability criteria fail to gain traction in emerging markets, stagnate in Europe, and decline in the US. Internal political changes at the epicenters of the ESG movement – the EU and the US might further decrease their investments in Africa (Acheampong & Logan, 2025). For African companies, European investment would become less attractive due to persistent higher business costs driven by the regulatory framework and ESG demands. Geopolitical turmoil will accentuate concerns about security and supply chain resilience, potentially detracting from ESG considerations. This scenario will also be accelerated by the intensification of geo-economic competition between different blocs, where regional interests replace the previous global ambitions (Khalid et al., 2022).

ESG ratings providers play an increasingly important role in the investment process through their assessments of companies across various ESG metrics. Knowing where to start when evaluating data providers is a significant task and no single public source or directory offers a comprehensive overview of data providers. The primary dimensions adopted by mainstream

international rating agencies for ESG assessments are largely consistent, namely Environmental (E), Social (S), and Governance (G) as first-level indicators. However, significant variations exist among agencies in their sub-dimensions and respective metric configurations, ultimately resulting in markedly divergent ratings for the same enterprise across different institutions. A comparative study of US and European portfolios revealed that two well-established ESG rating providers with robust methodologies can assign different ratings to the same company (Li & Polychronopoulos, 2020). The methodologies employed by ESG data providers are inconsistent, which can lead to significantly different outcomes when constructing a portfolio. When employing such data with different methods, different agencies amplify the rating discrepancies arising from variations in their metrics (Douglas et al., 2017). Another legitimate reason for differing ratings is their varying objectives. Some emphasise impact materiality, which assesses pollution based on its ecological harm. Others focus on financial materiality, in which pollution is a concern only if it imposes costs on the company. This fundamental difference will obviously lead to different rating outcomes (Financial Times, 2023).

According to current ESG rating providers, the majority fall into the comprehensive category (Avramov et al., 2022). Some of these providers, such as MSCI and Sustainalytics, rate companies globally, while others focus on comprehensive ESG ratings data for a specific country or region (See Table 1). The Sustainable Investment Research Institute (SIRIS), for example, provides comprehensive ESG ratings data from companies in the Asia Pacific region. In the specialist provider category, the majority of ratings providers focus on climate-related concerns. Data vendors' rating systems can vary significantly, resulting in drastically different ratings for the same company. Berg et al illustrate that discrepancies in ratings between providers are primarily driven by measurement (i.e., what metrics are used to assess different ESG attributes), followed by differences in scope (i.e., what attributes are being assessed), and lastly by weight (i.e., the level of materiality the ratings provider assigns to each attribute) (Berg et al., 2022).

Table I. Major ESG rating agencies

Rating providers	Found year	HQ	Specialty/Methods	Company coverage	Data Source
Sustainable Fitch	2024	New York, US London, UK	A subsidiary of Fitch Group, a ratings agencies with 100 years' history; provide line-by-line weights and the scoring criteria for each step of the analytical process in a table format, both on an entity and on a debt framework level.	20000 companies	Inside Out (analyst based)
S&P Global ESG	2019	New York, US	Integrate its ESG analysis with its credit rating expertise. Cover across corporate, sovereign and municipal sectors, combined with real-time ESG monitoring capabilities.	8000 companies	Inside Out (analyst based)
FTSE Russell ESG Ratings	2018	London, UK	Data and index review used to calculate FTSE Russell ESG scores is gathered from publicly available sources at the entity level, including corporate reports, websites and press releases.	7000 companies	Inside Out (analyst based)
Bloomberg ESG Data	2009	New York, US	Real-time financial data, combine alternative data sources, including satellite imagery and social media sentiment analysis.	15000+ companies	Inside Out (analyst based)
Sustainalytics	1992	Amsterdam, Netherlands	One of the 'Big Three' ratings agencies, built around Fitch Group's century-long reputation in credit analysis.	4500 companies	Inside Out (analyst based)
MSCI	1969	New York, US	Identify factors in how well the company manages those risks and Access to Moody's comprehensive Orbis database.	2500 companies	Inside Out (analyst based)

Source: ESG rating agencies' websites

Firms often lack sufficient internal motivation to recognize the importance and value of ESG factors in their operations. Alternatively, external environmental influences and drivers, such as policy, investor expectations, and market forces, drive ESG-related investments (Lavin & Montecinos-Pearce, 2021). The root cause lies in the fact that achieving ESG-related objectives requires additional investment to enhance performance in terms of relevant metrics. In contrast, the correlation between ESG investment and short-term profit gains is not significant – indeed, it may even be negative. Although a growing body of research indicates a positive correlation between ESG advancement and financial performance, the long-term benefits of ESG investment may not be as readily apparent as short-term financial metrics (Financial Times, 2023). Consequently, some firms genuinely lack the intrinsic motivation to pursue ESG investments, which to some extent constrains the implementation of ESG (Gillan & Starks, 2021). ESG ratings providers can evaluate the same company in very different ways. Thus, investors should instead study the various ESG ratings providers' methodologies to select the provider whose ratings align more closely with the investor's own views on ESG.

3. ESG in Africa: a biased theory in real-world practices

Africa is a continent that confronts distinct socio-economic, environmental, and governance challenges (Sun & Weng, 2023). Unlike regions with long-established sustainability frameworks, Africa's ESG landscape is shaped by a mix of diverse political structures, varying levels of institutional capacity, and economic dependencies on natural resources (Fikru et al., 2024; Khalid et al., 2022). The geographical concentration of ESG research in developed economies reflects a systemic bias in how we understand and implement ESG practices in Africa. Most existing research has concentrated on economically advanced regions, such as the G7 or oil-producing countries, leaving developing regions, such as Africa, with their unique challenges

largely underexplored. The limited representation of emerging markets raises the question of whether ESG theory and measurement frameworks are impractical or potentially harmful when applied in developing economies (Mishra & Pandey, 2025). A Western-centric view of sustainability that may be fundamentally unsuited to different economic and cultural contexts.

Environmental metrics within the ESG framework conceal a significant paradox in Africa. For example, the history of colonial-era resource extraction in Africa, intertwined with modern governance models, has led to misaligned environmental policies with local ecological realities (Mkandawire, 2015). Similarly, informal social networks, which serve as the backbone of community livelihood resilience in rural areas, are often overlooked in international ESG frameworks. Building on the World Bank's Sovereign ESG Framework, Ko et al. examined 24 African countries over three decades, from 1990 to 2020, and found notable regional disparities and temporal shifts in ESG scores. Notably, significant improvements were observed in the social and governance dimensions in some African countries, such as Sierra Leone. Other countries, such as Libya and Niger, experienced declines in environmental performance (Ko et al., 2025).

Social resilience at the local level in Africa often operates within informal structures that are not adequately captured by formal indices. The social dimension of ESG, for example, has shown progress in improving healthcare, education, and community stability, with informal networks largely driving these improvements (Khalid et al., 2022). Grassroots initiatives, such as community health programs in Malawi and cooperative farming in Niger, continue to support approximately 80% of employment in Sub-Saharan Africa. This finding highlights the tension between ESG scores and the real-life experiences that rely on informal socio-economic systems, which formal indices may only partially represent (Ko et al., 2025).

The environmental and social dimensions provide a basis for debates on the controversy surrounding ESG in Africa and its implications for African policymakers. In theory, requiring investors and aid donors to pay attention to sustainability could accelerate innovation in Africa by encouraging recipients to adopt best practices and to leapfrog development stages (Lund, 2006). However, the risk is that imposing a bureaucratic scoring system could also force emerging markets into a directed, centralized form of capitalism - driving up costs, reducing efficiency, and ultimately curbing economic growth. Rather than relying on one-size-fits-all sustainability frameworks, an ESG approach tailored to regional and local contexts should be prioritized for Africa's policymakers (Teresa, 2024).

The 'G' in ESG has evolved significantly in recent years, making it increasingly complex to define. The governance pillar in the ESG often refers to a number of topics relating to the company's ethical values and conduct, including anti-bribery and anti-corruption, responsible

tax practices, sustainability due diligence, good business conduct, and corporate governance (Annesi, 2025). In Africa, the governance dimension of ESG has also been criticized for neglecting government performance, whether in investment-sourced or recipient countries. These international governance initiatives, such as the EITI, were first announced by the United Kingdom's Prime Minister, Tony Blair, at the World Summit on Sustainable Development in Johannesburg in 2002 and formally launched in London in 2003 (Pafadnam, 2024). The initiative promotes better resource revenue collection and greater accountability in using these resources to finance productive public expenditures, aiming to enhance robust economic growth and reduce poverty. Kolstad and Wiig found that greater exposure to EITI member countries increases the amount of negative media attention a company receives regarding ESG matters. The increased negative attention is unlikely to reflect a constructive exposure of companies to more transparent institutions. EITI exposure is, at best, inconsequential for corporate behavior and, at worst, contributes to the greenwashing of mining companies' conduct (Kolstad & Wiig, 2025). To address corporate governance challenges in resource-rich economies, these global initiatives on government behavior may imply that disclosures are voluntary in nature, focusing on transparency, and are weakly enforced, may have had their day. If initiatives of this kind are the only ones that can emerge from global, inclusive, consensual policy processes, the global approach to international regulation may have to be considered (Ioannou & Serafeim, 2023).

Lastly, the standards of most ESG frameworks are designed in the Global North and implemented in the Global South, such as Africa. Thus, the metrics and analytical lenses used for measurement are not realistic in the African context (Mishra & Pandey, 2025). The tremendous disparities across Africa argue that there is no one-size-fits-all approach to sustainable investment. Each country can establish a distinct hierarchy of environmental, social, and governance criteria, with some prioritizing nature conservation, others focusing on renewable energy security (as in Nigeria), and others prioritizing the regulation of the carbon tax regime (as in South Africa) (Teresa, 2024). In this case, tailored ESG standards to the African continent's context could encourage diversified, 'leapfrog' development while promoting homegrown innovations (Musampa, 2025).

4. Methodology

This paper adopts an integrative analytical approach to compare the ESG performance of mining firms in Africa, with a focus on critical mineral extraction in the DRC and Zambia (copper and cobalt). It draws on a review of secondary sources, including the corporate reports, policy documents, and media report, academic and gray literature, to synthesize region-wide patterns and identify country-specific trajectories. We combined our methods by conducting a document content-based case study analysis. To this end, we reviewed

several corporate documents, including ESG and sustainability annual reports from both Chinese and Western mining companies operating in the DRC and Zambia. However, these case studies aim only to illustrate the current situation in this dynamic field, which is crucial for paving the way and identifying pathways for future research, business, and practical implications in terms of ESG and sustainability. Likewise, the case studies aim to demonstrate the ESG performance of key mining companies from advanced economies, such as Canada, and emerging economies such as China. Future research may develop additional analyses and techniques, using quantitative data and case studies from various countries and minerals to examine sustainability, ESG variables, and their implications for the development of Africa's sustainable mining industry.

5. Comparison of mining firms' ESG performances in Africa

5.1 Increased awareness of ESG ratings in Africa's mining firms

Africa is estimated to hold about 30 percent of the world's proven critical mineral reserves (Hilson, 2002). A strong global demand for commodities set off a mining boom in Africa during the first decade of the 21st century, as metal and oil prices nearly tripled, largely driven by the rapid economic growth of emerging economies. Several African countries, such as the Democratic Republic of the Congo, Namibia, Zimbabwe and Zambia, remained key destinations for new exploration and mining projects. Extractive industries experienced strong growth, with the number of projects and total investment value increasing by approximately one-third (Weng, 2025). Although accounting for less than 2 percent of all projects, extractives contributed approximately 13 percent of total greenfield project value, with an average size exceeding \$700 million. Investment in extractives was concentrated, coming from a handful of investor home countries. Investors from Canada, France, the United Kingdom, and other advanced economies, in that order, accounted for approximately 80 percent of capital flows into the sector (UNCTAD, 2024). Critical minerals-rich countries will have a 20 to 30-year window to tap into expected investment flows; thus, the implementation of clean energy technologies presents practical opportunities to cultivate a growing industrial base for Africa (IEA, 2024).

China is considered the key driver of the acceleration in global demand for minerals since the early 2000s, with its rapid economic growth (Garnaut, 2012; Stuermer, 2018). China's dependence on certain mineral imports has increased rapidly, and it has become a major producer of various metals and minerals, including lithium, cobalt, rare earth elements, and copper. Initially, Chinese mining enterprises venturing abroad primarily engaged in mining operations, but they have since extended to encompass activities across the entire mining industrial chain, including the acquisition of mining machinery and equipment, infrastructure

construction, and the provision of services (Ericsson & Löf, 2020). Apart from that, China plays a dominant role in refining critical minerals globally, leading the world as a supplier of clean energy technologies and a net exporter for many of them (Castillo & Purdy, 2022). For instance, China holds at least 60% of the world's manufacturing capacity for most mass-manufactured technologies (e.g., solar PV, wind systems, and batteries), and 40% of electrolyser manufacturing (IEA, 2022). The energy transition will consume a huge amount of so-called critical minerals. It is likely that China's overseas expansion of mining investment will continue, enabling China to secure the supply of critical minerals worldwide.

The ESG has been accepted as an international benchmark for evaluating mining companies. Since the initial introduction of the ESG concept in 2004, sustainable investing has experienced steady growth in European and American markets over the past two decades. African governments, such as those of Zimbabwe, Botswana, and Ghana, introduce regulatory incentives for companies that meet higher ESG standards, thereby adding value to minerals and contributing to sustainable extraction in Africa. International mining firms are prioritizing ESG performance in their decision-making, encouraging African mining projects to enhance their practices. ESG has become a core component of business strategy rather than a peripheral concern (Musampa, 2025).

The worldwide adoption of ESG has a significant influence on Chinese investors' willingness to engage, as they will continue to integrate extraction, refining, and manufacturing, thereby cementing their dominant role over future supply chains (Weng, 2025). While many Chinese mining firms are still in the early stages of expanding their overseas operations, they are increasingly aware of the significance of incorporating ESG into their corporate strategy to support their global expansion ambitions. According to ESG ratings for the world's top 40 mining companies, disclosed by Bloomberg, Chinese mining firms rank relatively low overall compared to their international counterparts (Sun et al., 2025). Only three Chinese mining firms - Zijin Mining, Tianqi Lithium, and Jiangxi Copper - scored with the higher ESG ratings. Zijin Mining demonstrates significant environmental strengths, securing the highest score in the environmental dimension. All others show weaknesses in the social dimension (Chang et al., 2025).

The next section will provide three case studies of mining firms operated iextracting copper, cobalt and lithium in the DRC and Zambia. Based on the different ownership structures of mining firms, it aims to compare the ESG ratings, governance structures and performances between Chinese state-owned enterprise, joint venture firms and western mining firm, further reveal the differences of their ESG practices among mining firms.

5.2 Case one - Zijin Mining Group and Ivanhoe Mine in the DRC

The Kamo-Kakula Copper Mine is a near-surface, flat-lying and stratiform copper deposit with adjacent prospective exploration areas within the Central African Copper Belt, approximately 270 kilometres west of the provincial capital, Lubumbashi. Kamo-Kakula began producing copper concentrates in May 2021, and the first concentrate production from the Phase 3 concentrator reached commercial production early in 2024.

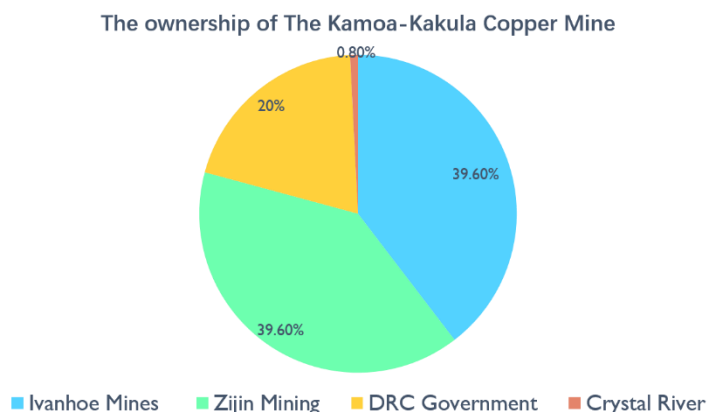


Figure 1. The ownership of Kamo-Kakula Copper Mine. Source: Kamo-Kakula copper mine website.

The copper mine is a joint venture between Ivanhoe Mines (39.6%), Zijin Mining Group (39.6%), Crystal River Global Limited (0.8%) and the Government of the Democratic Republic of Congo (20%) (See Figure 1). In May 2015, Zijin Mining indirectly acquired a 39.6% interest in the Kamo-Kakula project by purchasing a 49.5% stake in Kamo Holding Limited, which had previously been held by the Canadian mining company Ivanhoe Mines. Additionally, Zijin Mining holds a 13.59% stake in Ivanhoe Mines, making it the latter's second-largest shareholder. Through direct and indirect holdings, Zijin Mining controls approximately 45% of the economic interest in the Kamo-Kakula copper mine, making it the largest actual stakeholder in the project (The Kamo-Kakula Project Integrated Plan, 2023).

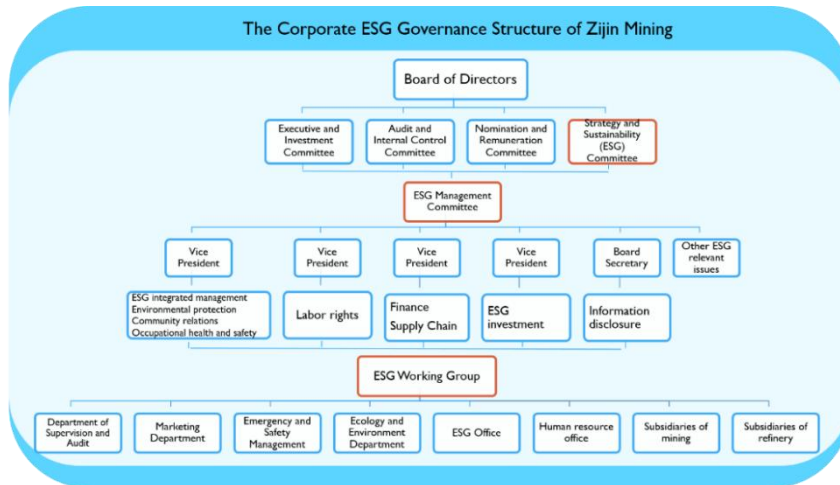


Figure 2. The ESG Governance Structure of Zijin Mining. Source: Author’s construct based on ESG report of Zijin Mining Group. (2023).

Since 2019, Zijin has produced ESG reports, but its ratings have remained low. They began to pay closer attention to these matters and subsequently enhanced and optimized ESG reporting (Xie, 2025). Zijin integrated ESG into the core of its corporate strategy, becoming one of the first Chinese mining companies to adopt internationally recognized standards in preparing its ESG report (Box 1). As Figure 2 demonstrates, under the leadership of the Board of Directors, Zijin has established a top-down ESG governance structure. The ESG Management Committee is responsible for developing and implementing the ESG strategy formulated by the Board of Directors. The ESG Committee comprises members who oversee ESG topics, including safety and environmental protection, business ethics, community relations, supply chain management, and human resource development. The ESG working group coordinates ESG management efforts across business units and subsidiaries through establishing an ESG coordination network (Zijin Mining Group, 2023).

Box 1. Structural ownership of Zijin Mining Group

Zijin Mining Group transformed from a state-owned enterprise through restructuring to incorporate private capital, successfully listed on the stock exchange, and ultimately developed into a multinational mining corporation. A pivotal milestone occurred in 1998 when Zijin Mining restructured from a completely State-owned enterprise into a state-controlled limited liability company, reducing state shareholding from 100% to 87%. In 2000, Zijin introduced private enterprise capital, becoming a joint-stock company with the state shareholding further reduced to 48%. Following its listing on the Hong Kong stock market in 2005, the state shareholding was just over 30%.

Zijin Mining Group diversified its ownership structure by listing on the capital markets, through introducing private capital to implement shareholding reforms. The structural transformation has brought its operational practices into market-oriented operations, and decision-making has become significantly influenced by market mechanisms and shareholder interests.

Source: Zijin Mining Group.

Progress was made in Zijin's international rating performance. In international ratings, for instance, MSCI assessed a B rating. Other agencies, such as Morningstar and S&P, assign us upper-middle ratings, categorizing Zijin as a medium-risk company. Notably, Refinitiv previously listed Zijin in the top global ranking (Zijin Mining Group, 2023). Data showed that China's leading mining firms received systematically low ESG ratings across multiple categories. This may stem from the lack of a well-established equilibrium between ESG ratings and corporate value; specifically, the correlation between ratings and corporate performance remains relatively weak (Xie, 2025). Leveraging the ESG working group, Zijin has effectively decomposed its ESG strategic objectives, with fast policy dissemination, and established dynamic and effective risk prevention and communication mechanisms to drive the implementation of ESG practices. Zijin becomes one of the few exceptional Chinese mining firms recognized for its relatively high ESG performance in accordance with international standards (Chang et al., 2025).

5.3 Case two - Chinese State-owned enterprise CNMC in Zambia

The State-owned China Nonferrous Metal Mining Group (abbreviated as 'CNMMG') is the first Chinese enterprise to invest in Zambian copper mines since Zambia began privatizing its mining industry in the late 1990s. In 1998, the subsidiary of the CNMMG, China Nonferrous

Mining Corporation Limited (CNMC), acquired the Chambishi copper mine, valued at USD 15 million, marking China's first overseas investment in a nonferrous metal mine (China Nonferrous Metal Mining Group, 2011). Currently, there are approximately 20 Chinese mining companies registered for mining exploration and exploitation in Zambia. CNMC dominates the largest share of the mining sector, with a focus on copper extraction and refining (Brautigam, 2021). It became the first Chinese enterprise to operate in Africa with a vertically integrated industrial chain encompassing copper mining, beneficiation, hydrometallurgical processing, pyrometallurgical processing, and exporting sales.

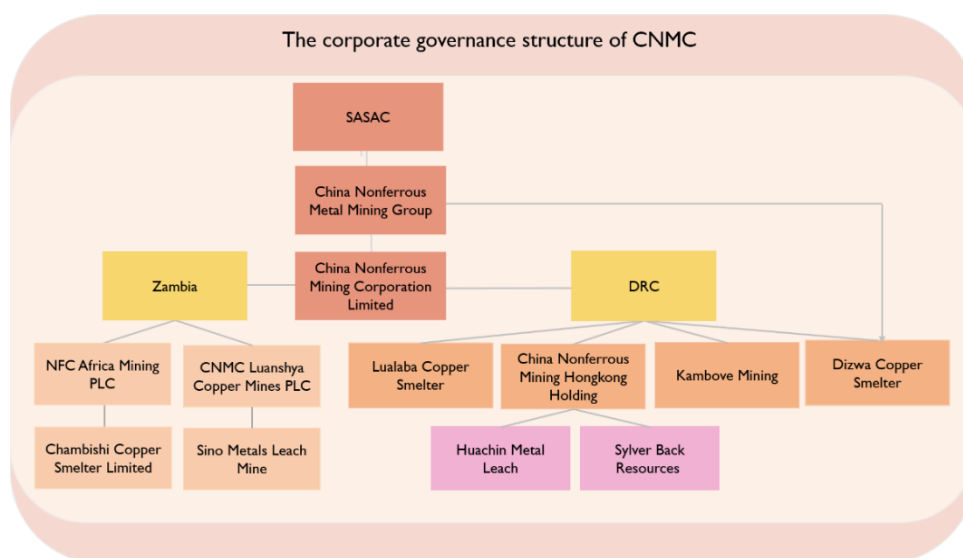


Figure 3. The corporate governance structure of CNMC Source: the CNMC web

The Company's (CNMC) controlling shareholder is China Nonferrous Metal Mining Group Co., Ltd. (CNMMG), a large central State-owned enterprise directly managed by the State-owned Assets Supervision and Administration Commission (SASAC) (See Figure 3). CNMC Group is involved in the development of nonferrous metal mineral resources, construction engineering, and related trading and technical services in China and overseas. It also serves as CNMC Group's international platform for developing copper and cobalt resources. In 2019, China Nonferrous Metals Group invested in and completed construction of the Lualaba Copper Smelter in the Democratic Republic of the Congo (DRC) - the first modern large-scale pyrometallurgical copper smelter built in the country. One year later, another copper mine project, invested in by China Nonferrous Metals Group in the country, the Dizwa Copper Smelter, was completed and commenced production, yielding its first batch of cathode copper (China Nonferrous Metal Mining Group, 2020).

As shown in Figure 4, regarding the ESG performance, CNMC has established a top-down ESG governance structure. The Board Compliance Committee conducts research, analysis,

and risk assessments on matters related to the CNMC’s ESG initiatives, oversees the development and implementation of the CNMC’s ESG systems and plans, and submits them to the Board for deliberation. The Board of Directors, as the highest decision-makers for ESG matters, is responsible for formulating the CNMC’s ESG strategic planning and institutional policies, ensuring the effective implementation of relevant policies, and bearing responsibility for related policies, regulations, and information disclosure (China Nonferrous Metal Mining Group, 2024).

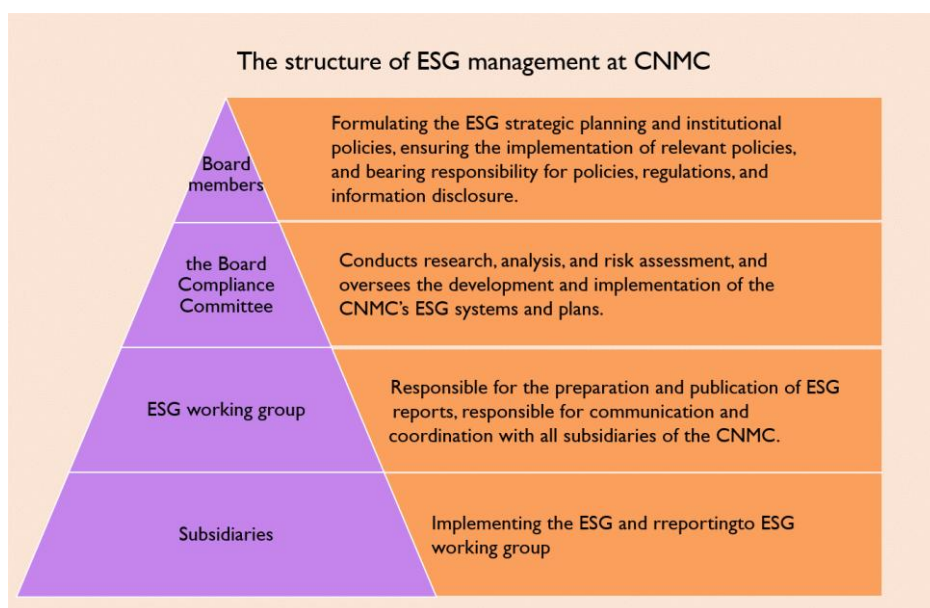


Figure 4. The Structure of ESG Management at CNMC. Source: Author’s construct based on the ESG report of CNMC Group. (2024).

Regarding the selection and assessment of the ESG indicators, CNMC primarily referenced previous ESG topics, thoroughly considering multiple dimensions, including regulatory disclosure requirements, the United Nations Sustainable Development Goals, and issues of concern to rating agencies. The selected topics are compiled into questionnaires for the assessment of internal and external stakeholders, who are involved in the CNMC’s headquarters and subsidiaries. The assessment results are submitted to the Board of Directors for review. In 2024, the China Chamber of Commerce for Metals, Minerals & Chemicals Importers & Exporters officially released the Summary Report on Responsible Management Assessment of the Copper and Cobalt Supply Chain of Gangbof Mining Co., Ltd. Gangbof Mining was awarded an “AA” rating certificate (See Table 2).

5.4 Case three – First Quantum Minerals in Zambia

First Quantum Minerals Ltd., based in Canada, is a mining company in the Diversified Metals industry, operating mines in multiple countries, including Zambia, Panama, Spain, Finland, and

Australia. With a focus on ESG, the company specializes in mineral exploration, mine engineering, construction, and mining operations, producing a range of metals, including copper, nickel, gold, and zinc. The Board executes many of its responsibilities through its Committees (See Fig. 5). (1) Environment, health and safety and corporate social responsibility committee is responsible for reviewing sustainability-linked policies and practices in accordance with applicable laws and regulations, the effectiveness of risk management; (2) Nominating and governance committee is in charge of reviewing the Company’s corporate governance practices, and oversees Board succession and also Board refreshment with a mandate to improve diversity. (3) human resource committee is responsible to recommend executive compensation for Board approval. (4) Audit committee is responsible for assisting the Board in fulfilling its financial reporting, control responsibilities as well as monitoring the internal control environment (Environmental, Social and Governance Report, 2024).

First Quantum’s ESG report disclosures have been prepared in accordance with the following standards: the GRI indicator framework, the Sustainability Accounting Standards Board, and the Sustainable Development Goals. In its ESG report, FQM has adopted the Corporate Sustainability Reporting Directive (CSRD), a new EU directive that requires large, listed companies to report on ESG issues, aiming to drive accountability and transparency (See Figure 5). It requires companies to report on their sustainability impacts in accordance with the European Sustainability Reporting Standards (ESRS), which were published in 2023. In preparation for the reporting, FQM engaged with the International Sustainability Standards Board (ISSB) by undertaking a Double Materiality Assessment (DMA) approach to gain a comprehensive understanding of sustainability impacts and to effectively address the interests and concerns of all stakeholders.



Figure 5. The Structure of ESG Governance at FQM. Source: FQM Environmental, Social and Governance Report 2024.

The company already has extensive sustainability programs and reports on its environmental and social impact. It will need to align these efforts with the detailed reporting requirements of the CSRD, which mandates specific disclosures for sustainability-related performance for investors in the European Union. However, FQM has received varying ESG ratings from different sources. Some agencies classify it as 'high risk' (such as Know ESG), while others, such as S&P Global and Fitch Ratings, rate it as medium to high risk. A significant factor affecting its ratings is the shutdown of the Cobre Panama mine in Colón Province, Panama City, which faced opposition from environmentalists due to its impacts on biodiversity and water depletion, resulting in a significant impact on its credit standing and ESG rating.

5.5 Are Chinese mining companies different in ESG assessment?

This study selected two Chinese mining companies and two Canadian mining companies operating in Africa. One of the Chinese firms is a multinational joint venture, another is a state-owned enterprise, and two Canadian mining firms, all of which are involved in the extraction of critical minerals in Africa, especially lithium, copper and cobalt in the DRC and Zambia. Compared to more experienced international mining firms, Chinese companies, as ESG latecomers, have developed a localization strategy characterized by 'leveraging local resources' adaptively. For instance, Zijin Mining, a multinational joint venture, has adopted this approach in its mining investments in the DRC (Box 2). In the Kamo-a-Kakula copper mine project, Zijin Mining and Ivanhoe Mines have leveraged their respective advantages to establish an international cooperative framework. In the project development, Zijin Mining and its numerous contractors and suppliers fully utilize their advantages in construction, efficiency, and technology. In operational management, Ivanhoe leads the advancement of government relations, ESG initiatives, brand communication, and corporate image strategy (Zhou, 2025). As a result, by leveraging Ivanhoe's established government relations networks and community coordination mechanisms in the DRC, the project's social legitimacy and acceptance were mainly enhanced at the community level. Drawing on the experience and resource networks of international pioneers will help Chinese enterprises build trust with local communities. This requires Chinese mining companies to demonstrate a proactive willingness and learning capacity to absorb best practices from international peers, alongside establishing organizational structures and incentive mechanisms within their governance frameworks to drive the localization process (Deng & Zhao, 2007).

CNMC, a subsidiary of CNMMG, which is a state-owned enterprise under the administration of the State-owned Assets Supervision and Administration Commission of the State Council (SASAC). As state-owned enterprises, their ESG governance structures are primarily guided by national policies and strategies, with a greater priority placed on safeguarding the development of strategic emerging industries (Zhang, 2024). In 2024, the SASAC issued the

‘Guiding Opinions on Central Enterprises Fulfilling Social Responsibilities to High Standards in the New Era,’ which emphasizes strengthening environmental, social, and governance (ESG) work (SASAC, 2024). The issuance of the guideline aims to accelerate the establishment of an ESG framework within state-owned enterprises and integrate ESG principles into corporate strategy and operations by embedding ESG concepts into SASAC’s supervision and management framework.

Box 2. ESG practice of Ivanhoe (joint venture with Zijin) in the DRC









In the DRC, given Ivanhoe’s more extensive experience in ESG matters and its strong cooperative relationship with the Government of the DRC, Ivanhoe and its local teams in the DRC are managing government relations and community relations for the Kamoakakula copper project. In managing community relations, Ivanhoe has established a dedicated community relations management team that fosters community understanding and participation in projects through regular meetings, and project updates, thereby strengthening the company’s local legitimacy and credibility. Ivanhoe has also established a community development pathway centered on its Sustainable Livelihoods Program. Third, Ivanhoe promotes community employment through capacity building. In collaboration with the National Institute for Professional Preparation (INPP) of the DRC and local NGO Alpha Congo, they provide community members with practical skills needed to apply for jobs or establish micro-enterprises. Last, by introducing a local procurement reporting mechanism, Ivanhoe integrates capacity building with local supply chain development, embedding community relationship management into corporate operational systems and entrepreneurial supply chains. This provides lessons and reference for the ESG management of Zijin Mining in its overseas expansion activities.

Source: ESG reports of Zijin Mining Group and Ivanhoe Mines

The Chinese government has incorporated ESG into a national strategy, rigorously requiring and accelerating corporate adoption of sustainable practices. While there is no mandatory ESG disclosure requirement for state-owned enterprises, these policy guidelines facilitate the establishment of an authoritative ESG strategy at the national level (Sun et al., 2025). As a key player, CNMC positions itself to safeguard national strategic resource security and ensure the supply of non-ferrous metals and new materials. As a result, CNMC will prioritize its alignment with SASAC’s policy guidelines, actively fulfilling national missions, and executing state directives. In the meantime, CNMC’s vision is to become a globally competitive, world-class mining firm (China Nonferrous Metal Mining Group, 2025). As ESG performance has emerged as a critical success factor for attracting investment and capital in financial markets, driving growth in market capitalization, this necessitates aligning China’s ESG disclosure practices with international standards (Zhang, 2024). Given this context, as Chinese state-owned enterprises

expand globally, they must balance political responsibilities with benchmarking international practices. By tailoring approaches to the specific conditions and developmental stages of host countries with mineral resources, their international competitiveness might be enhanced.

Table 2. Comparison of mining firms' ESG ratings

ESG Rating Providers	Ivanhoe	FQM	Zijin	CNMC
 MSCI	A	B	B	/
 S&P Global	42	51	64	/
 Sustainable Fitch	B	B	BB+	/
 ISS ESG	C-	C-	/	/
 CDP	B-	/	/	/
 中证指数 CHINA SECURITIES INDEX	/	/	A	/
 上海华证指数信息服务有限公司 Sino-Securities Index Information Service (Shanghai) Co., Ltd	/	/	/	A
 中诚信国际 CCXI	/	/	/	AAA

Source: ESG rating agencies and firms' websites

ESG is no longer optional but mandatory. As Chinese buyers' outbound M&A deal-making surged, Chinese investors became more sophisticated in their investment and operational strategies (Ericsson et al., 2020). Chinese companies have become adept at acquiring mining assets from Western rivals in recent years, often being willing to take a longer-term view on valuations and invest in riskier regions (Financial Times, 2025). For instance, CNMC, the penetration of State-owned enterprises into the mining sectors has renewed fears that they will become invisible instruments of profit for foreign Governments. In the meantime, most of the outbound investments go into minority stakes, indicating that the Chinese are not yet ready to take full and undivided control of new ventures abroad. Taking the medium and small-scale mining companies as an example, they invested in Africa in a later period, and a lack of experience and capital restricted their engagement in Africa's market (Xie, 2025). There is, however, no doubt that Chinese mining investors will gain experience from both their foreign investments and domestic mines as they introduce modern, large-scale mining methods to modernize and expand their operations. When this happens, they will also most probably be prepared to take a larger share of control over foreign operations (The Oregon Group, 2025).

Although both Zijin and CNMC are Chinese companies, Zijin is a publicly listed company while CNMC is a state-owned and non-listed entity. Consequently, the ESG standards that both of

them reference are not aligned with the same framework. For instance, CNMC is a state-owned asset supervised by the State-owned Assets Supervision and Administration Commission of the State Council (SASAC). They implement the ESG guidelines issued by SASAC without needing to follow up on international ESG standards. Zijin is also a state-owned enterprise, but it is a state-controlled enterprise, which means that SASAC regulates Zijin Mining's stake through oversight of state-owned shares (Xie, 2025). This could also explain why, when evaluating Chinese SOEs within the international ESG assessment framework, their performance differs from that of international mining firms.

6. Balancing ambition and reality: Develop Africa's ESG standards

After decades of development, ESG standards have proliferated globally. However, due to significant differences between various disclosure frameworks and standards, ESG comparability remains low across industries and companies. A commentary published in the Financial Times, titled 'Rating the ESG rating agencies' conflicts of interest, divergent assessments even on the same company, resulting in goal confusion, all of which is attributed to an unholy mess of ESG ratings (Financial Times, 2023). Proponents argued that none of these factors mentioned are the root causes. The fundamental issue with ESG ratings is that they attempt to simplify something complex. For Africa, ESG reflects concerns that have come to weigh more heavily on Western agendas but do not always align with the expectations and choices of Africans, who face more urgent challenges (Fikru et al., 2024). As several recent cases have demonstrated, the prevailing energy and food insecurity in developing countries may render compliance with sustainability criteria incompatible with ESG standards for social equity, and vice versa. For citizens and entrepreneurs trying to overcome poverty, unemployment, energy and food insecurity, low connectivity and a general lack of infrastructure, adapting to the demands of ESG may seem an unnecessary expense. African policymakers need to rebalance the weight of ESG standards in their considerations and ensure African needs are better reflected in their framework.

6.1 Too many policies and too few spaces?

The European Union and the United States have made substantial progress in establishing and implementing ESG disclosure and rating assessment. Based on data from the Carrots & Sticks global database of mandatory and voluntary ESG policies, in 2024, 2677 policies were issued from 132 countries, representing a 9% increase from the 2023 database (Carrots & Sticks, 2024). This growth is attributed to the addition of 214 new policies (See Figure 6). Among the policies, 816 are issued related to the sector of Mining, Quarrying, Oil & Gas Extraction. Internationally, 195 policies have been issued related to the ESG. Regionally, Asia

(173) and Europe (170) have published the largest number of ESG policies, while Africa has released 54 policies (See Figure 7).

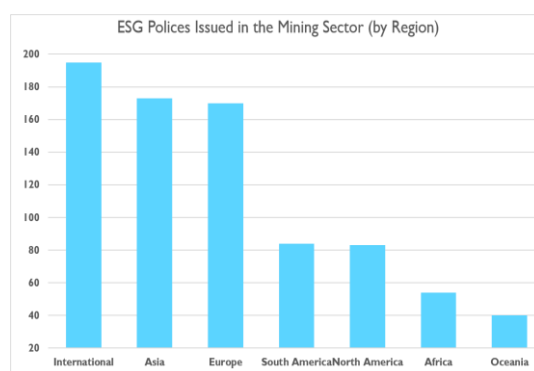
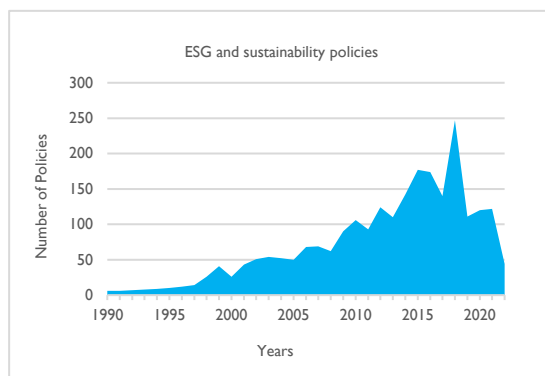


Figure 6. ESG and sustainability policies.

Figure 7. ESG policies in the Mining sector.

Source: Carrots & Sticks, 2024.

Among these policies, the ESG assessment criteria come from different sources (see Table I). There are voluntary frameworks, such as the OECD Guidelines for Multinational Enterprises on Responsible Business Conduct, and mandatory regulations, such as the EU’s Corporate Sustainability Reporting Directive. Companies listed on stock exchanges are often required to report their ESG performance; this is mandatory for some stock exchanges, such as the Johannesburg Stock Exchange, and voluntary for others, such as the New York Stock Exchange, which instead provides guidelines to support its listed companies with ESG or sustainability reporting (Acheampong, 2024).

In Africa, the various ESG standards arising from these myriad sources pose a challenge to host governments. Host governments must monitor and enforce their national laws and regulations, while mining companies must adhere to the ESG standards from both host countries and their own home jurisdictions (Ko et al., 2025). The lack of universal standards has created an uneven playing field among mining companies. European and OECD countries have higher ESG standards, partly because they have joined voluntary international initiatives (Acheampong and Logan, 2025). These countries require their companies to have responsible supply chains, adhere to ethical business practices, and reduce their carbon footprints, among other requirements.

In practice, strict ESG requirements often translate into obstacles such as prolonged permit and approval processes. They can increase project costs or cause costly delays, potentially stalling the project and reducing its overall feasibility (Fikru et al., 2024). It is undeniable that the incorporation, compliance, and reporting requirements of ESG bring more regulation, bureaucracy, and higher costs, posing additional challenges to African companies

(Acheampong and Logan, 2025). Although African countries have strengthened their legal and regulatory frameworks and most African countries, such as the DRC and Zambia, have entrenched certain ESG requirements in their national legislation. Governance standards are often less prominent than environmental and social standards in national laws and regulations, although both countries are making progress on aspects such as public disclosure of beneficial ownership. Government capacity to effectively enforce ESG regulations is also a challenge, particularly in the DRC and Zambia.

6.2 Too high standards or too low?

African policymakers are increasingly aware of the importance of implementing ESG standards in foreign mining investment (Fikru et al., 2024). The European Union continues to strengthen its revision of sustainability-related policies and regulations. Beyond the long-established EU Taxonomy and Sustainable Finance Disclosure Regulation (SFDR), the Corporate Sustainability Reporting Directive (CSRD) officially took effect on January 5, 2023. This directive requires companies to disclose information on their environmental, social, and governance (ESG) performance, including their impact on climate change, biodiversity loss, and human rights violations (Acheampong, 2024).

Furthermore, the EU Corporate Sustainability Due Diligence Directive (CS3D) has been approved by the Council of the European Union on May, 2024. Following its entry into force, EU member states will have two years to transpose it into national law, with implementation commencing as early as 2027. The directive will be phased in to regulate enterprises of varying sizes in compliance with its provisions (Acheampong, 2024). The EU views its ESG commitment as an element that helps make its offer unique and superior compared to other countries. However, African stakeholders do not see European companies as distinctive because they view large multinational companies from other OECD countries (notably Canada and Australia) as being bound to equally high ESG standards (Baranzelli et al., 2022). For example, they consider companies from OECD countries to have relatively better business practices than some Chinese competitors, who are more frequently associated with environmental and social violations (although Chinese companies are not the only ones to commit such violations).

The most common complaints against Chinese mining companies include providing inadequate protective gear for staff, offering lower wages than OECD firms and having more frequent environmental accidents. A case in point is the recent catastrophic collapse of a tailings dam (which stores mining waste) in Chambishi, Zambia: it released over 50 million litres of acidic pollution into the Mwambashi River. In contrast, Zambian stakeholders highlighted Canadian mining company First Quantum Minerals as one of the leading employers in the country, due

to perceptions that it prioritises health and safety, pays decent wages, provides staff housing, and fosters professional development opportunities for its workforce. Nonetheless, as mentioned above, the FQM has been rated high risk according to S&P rating, due to its Panama mine. Thus, the accidents that happened in the real world indicated that even though OECD firms have better ESG practices, not all mining firms from OECD are superior to non-OECD firms. In this case, ESG standards that are too high or too low are equally insignificant for Africa's development.

6.3 Define ESG standards in Africa's context

There are notable discrepancies among EU, Asian, and African countries in how they balance ESG standards against other policy priorities (Li & Polychronopoulos, 2020). For the EU, authorities place primary importance on ESG standards. Market- and investor-driven initiatives rely on ESG ratings as key factors in their investment decisions, focusing on corporate financial performance and shareholder returns. Whereas policymakers in Africa consider ESG standards alongside other policy priorities, notably job creation, industrialization, poverty reduction, and economic growth (Fikru et al, 2024; Acheampong & Logan, 2025). These issues are beyond the remit of current ESG frameworks but are of considerable concern to African policymakers in their development agenda. Mineral-rich African countries, such as the DRC and Zambia, are determined to capitalize on the surge in demand for critical minerals to advance their other policy priorities (Weng, 2025). ESG standards should be leveraged to spur productive investments rather than to curb the economic benefits of the mining sector. The EU's strict ESG standards leave no room for trade-offs, even where this would better accommodate the policy priorities of African partners.

The same logic applies to the case of Chinese mining investments. For China, a government-led approach positions the government and state-owned enterprises as key drivers of ESG implementation. The Chinese corporate ESG practices are aligning with international practices, but they also emphasize their Chinese characteristics, tailored to national priorities, and are often tied to policy compliance (Xie, 2025). For instance, the ESG reporting disclosure rate for listed companies controlled by State-Owned Enterprises reached 100%, far exceeding the 35% rate among private enterprises. The driving force stems from the China Securities Regulatory Commission's disclosure guidelines rather than market forces.

Neither of their ESG metrics and practices is grounded in the realities of African nations, particularly failing to adequately account for local-level practices (Musampa, 2025). In Africa, many natural resource deposits are located far from the coasts in remote rural areas, and local communities affected by mining activities have often been neglected. Governments have been enforcing mineral development policies without consultation with the communities living

around these mines. Engaging with local communities around mine sites has become a reputational and political imperative for mining companies. This has been marginalized in the current ESG metrics.

The governance dimension of ESG frameworks is technically limited to the company's governance; it does not encompass the host country's governance of the mining sector or the country's governance more broadly (Khalid et al., 2022). However, references to governance under ESG often imply a broad definition, whereby governance becomes a catch-all for everything that is not environmental or social. For example, host government transparency in the allocation of mining licenses is not an ESG issue as it does not pertain to a company's business practices. Thus, governance in Africa's mining sector becomes more important than corporate governance defined in the ESG standards (Acheampong & Logan, 2025).

7. Conclusion

ESG concepts are criteria that guide mining companies to adopt more responsible and sustainable business practices. They are used to assess a company's social and environmental sustainability, as well as its governance aspect. They help mitigate social and environmental risks, making companies more attractive to investors. Adhering to these standards signals that mining companies manage their risks effectively and are committed to improving their sustainability and good business practices. Demonstrated compliance with ESG standards also enables companies to access a wider range of financing sources, allowing them to secure more investment.

The dominance of China in the critical minerals supply chain poses geopolitical and mineral security threats to Western countries, who are now playing catch-up as geopolitical rivalries driven by energy security intensify around the supply of critical minerals. Environmental pollution, human rights issues, and a lack of transparency are all aspects that are criticized mainly by the Western media regarding China's investment in Africa, particularly in the mining industry. Standardizing the ESG framework will have a positive impact on regulating China's mining investment in Africa. As Chinese buyers' outbound M&A deal-making surged, Chinese investors became more sophisticated in their investment and operational strategies. Chinese companies have become adept at acquiring mining assets from Western rivals in recent years, often being willing to take a longer-term view on valuations and invest in riskier regions. However, Chinese enterprises' ESG practices are still in the imitative learning process; this requires Chinese mining companies to demonstrate a proactive willingness to learn from international peers, alongside balancing political responsibilities with benchmarking international ESG practices.

The African continent is increasingly becoming a battlefield in the race between developed and

emerging economies to secure their supply of critical minerals. The importance of addressing global inequality and vulnerability, especially in the Global South, needs to be re-examined, as wealthy nations often promote their own economic development under the guise of green growth at the expense of developing countries. The policies, acts, and regulations of the ESG framework are creating new barriers to inequality under the guise of 'environmental benefits.' The implementation of these policies is grounded in the principle of indiscriminate shared responsibility, which fails to adequately account for local-level practices within a specific development context.

History has shown that a one-size-fits-all approach is not viable, especially since either the West or China predominantly sets these standards, thereby excluding Africa and rendering them inherently incompatible with the continent's realities. Currently, ESG research in the Global South remains marginalized. Africa needs its own ESG framework, and it must not come at the expense of African nations' interests. Nor should ESG be weaponized amid geopolitical rivalry, becoming yet another pretext to hinder Africa's climb up the ladder.

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