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Energy Justice Concerns of Artisanal and Small-Scale Mining Amidst Energy Transition

Chioma V. Basil

Abstract The history of artisanal and small-scale mining is riddled with injustices ranging from tax avoidance to land grabs, pollution, deforestation, adverse impact on local communities and destruction of the world's carbon sinks. The benefits and adverse impacts associated with artisanal and small-scale mining are of global significance; often involving elements of technological, economic, environmental, health and safety, social, and governmental and political concerns. The exacerbated demand for metals used for low-carbon technologies as a result of climate change mitigation necessitates an intervention against the grave dangers associated with small-scale mining activities. Unfortunately, many governments do not attempt to control these activities, which are either outside their regulatory framework, or they lack the capacity to monitor or control these activities. This chapter examines the vital role of the artisanal and small-scale mining industry and the imminent relevance of energy justice

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application to this growing and unrecognised industry. It highlights how energy justice promotes the rights protection of artisanal and small-scale miners and communities, the redistribution of benefits, and environmental protection. Consequently, a social contract can be implemented to attain transformative change in the industry and ensure global well-being, hence, a just transition to a carbon-free economy.

Keywords Artisanal and small-scale mining · Energy justice · Critical raw materials · Climate change · Social contract

28.1 INTRODUCTION

With the prioritisation of the global energy transition, countries are investing in increased amounts of raw materials to decarbonise the energy sector, especially with the manufacture of green technologies, leading to the increased supply of critical materials like nickel, cobalt, lithium, and manganese.¹ Therefore, artisanal and small-scale mining (ASM) plays a vital role, as it is a significant contributor to the production of these minerals. According to the World Bank, ASM produces approximately 24% of the global cobalt used in electric vehicle batteries and 25% of tin² However, there is limited data on ASM, lacking the attention necessary to improve the conditions of artisanal miners and communities.³ More specifically, the Democratic Republic of Congo has significant

¹ Raphael Deberdt, Philippe Le Billon, (2023) ‘Green transition mineral supply risks: Comparing artisanal and deep-sea cobalt mining during the climate crisis’, *The Extractive Industries and Society*, Volume 14, 101232, ISSN 2214-790X, available at <https://doi.org/10.1016/j.exis.2023.101232>.

² Demetrios Papathanasiou, Kurt MacLeod, (2021) ‘To achieve decent work, we must improve the health and safety of “hidden” artisanal miners’, Thomson Reuters Foundation, available at <https://www.worldbank.org/en/news/opinion/2021/10/19/opinion-to-achieve-decent-work-we-must-improve-the-health-and-safety-of-hidden-artisanal-miners> [Accessed May 3, 2023].

³ Ibid.

ASM contributing as much as 40% of the nation's total cobalt contribution, employing more than 200,000 copper-cobalt miners.⁴ Moreso, Zimbabwe has some of the world's largest reserves of lithium deployed by both ASM and Large-Scale Miners (LSM).⁵ Despite this, labour-intensive sector is largely unregulated, dangerous, and riddled with injustices like poverty, lack of wealth redistribution, child labour, land grab, and inaccessibility to lands,⁶ necessitating recourse to energy justice.

28.2 ENERGY JUSTICE AND ARTISANAL AND SMALL-SCALE MINING

Energy justice aims to improve the world based on the five vital tenets of justice—procedural, distribution, recognition, restorative, and cosmopolitan justice, with a conscious application of human rights protection principles across the energy cycle.⁷ Injustices in ASM cut across the justice tenets of (a) distribution, that is, the fair allocation of social resources from the energy sector⁸; (b) procedural entailing focus on the legal process, compliance with due processes in addressing energy injustices, and policy-making⁹; (c) recognition necessitating the acknowledgement of the needs of various groups like local or indigenous communities

⁴ Trafigura, (2022) 'Accelerating transition: The case for formalising artisanal and small-scale mined cobalt in the DRC' whitepaper, available at https://www.trafigura.com/media/3403/2022_trafigura_accelerating_transition_the_case_for_formalising_asm_cobalt_in_the_drc_whitepaper.pdf.

⁵ Reuters, (2022) 'Zimbabwe bans raw lithium exports to curb artisanal mining', available at <https://www.reuters.com/world/africa/zimbabwe-bans-raw-lithium-exports-curb-artisanal-mining-2022-12-21/> [Accessed May 3, 2021].

⁶ Raphael Deberdt, Philippe Le Billon, (2023) 'Green transition mineral supply risks: Comparing artisanal and deep-sea cobalt mining during the climate crisis', *The Extractive Industries and Society*, Volume 14, 101232, ISSN 2214-790X, available at <https://doi.org/10.1016/j.exis.2023.101232>.

⁷ Raphael J. Heffron, (2021) *The challenge for energy justice: Correcting human rights abuses* (Palgrave Macmillan, ISBN 978-3-030-80097-0 (eBook), available at <https://doi.org/10.1007/978-3-030-80097-0>), P. 3.

⁸ P. Krütli, K. Törnblom, I. Wallimann-Helmer and M. Stauffacher, (2015) 'The ethics of nuclear energy. Risk, justice, and democracy in the post-Fukushima era', Cambridge University Press, P. 199.

⁹ Benjamin K. Sovacool, Michael H. Dworkin, (2015) 'Energy justice: Conceptual insights and practical applications,' *Applied Energy*, 142, 435–444.

impacted by energy activities¹⁰; (d) restorative which requires the rectification of any injustices or damages resulting from energy activities of extraction, production, or operation¹¹; and (e) cosmopolitan ensures that all plans and policies consider international dimensions because of the global effect of all energy activities.¹²

Considering these, many countries with significant ASM activities (e.g. Congo—Cobalt) lack the opportunity to create more revenue through the refining of their resources or application to the development of its green mobility; instead, the mining communities suffer unstable and unsafe energy access,¹³ death, starvation, and homelessness. Equally, there is little or no recognition for children and women who populate the cobalt mines because of the need to support themselves in the absence of schools and employment.¹⁴ Hence, defeating the essence of recognition justice to provide attention to socially deprived groups through institutionalising a broader standpoint on who can be disadvantaged by the logic of the energy systems.¹⁵

Furthermore, ASM suffers from inadequate regulation, because very few governments have ASM policies¹⁶ where small-scale miners can be awarded a small-scale mining contract (Philippines) or artisanal mining

¹⁰ Maciej M. Sokołowski, Raphael J. Heffron, (2022) ‘Defining and conceptualising energy policy failure: The when, where, why, and how,’ *Energy Policy*, Volume 161, 112745.

¹¹ M. Hazrati, R.J. Heffron, (2021) ‘Conceptualising restorative justice in the energy transition: Changing the perspectives of fossil fuels,’ *Energy Research & Social Science*, Volume 78, 102115.

¹² Raphael J. Heffron, (2020) ‘The role of justice in developing critical minerals,’ *The Extractive Industries and Society*, Volume 7, 855–863, 859.

¹³ Wörmann, C. (2022) ‘Global energy justice: The case of cobalt,’ *Institute für Afrikastudien*, available at <https://home.uni-leipzig.de/~afrikastudien/2022/02/17/global-energy-justice-the-case-of-cobalt/> [Accessed May 5, 2023].

¹⁴ Benjamin K. Sovacool, Andrew Hook, Mari Martiskainen, Andrea Brock, Bruno Turnheim, (2020), ‘The decarbonisation divide: Contextualising landscapes of low-carbon exploitation and toxicity in Africa’, *Global Environmental Change*, Volume 60, 102028, ISSN 0959-3780, available at <https://doi.org/10.1016/j.gloenvcha.2019.102028>.

¹⁵ Maciej M. Sokołowski, Raphael J. Heffron, (2022) ‘Defining and conceptualising energy policy failure: The when, where, why, and how,’ *Energy Policy*, Volume 161, 112745.

¹⁶ The Republic of the Philippines, Congress of the Philippines Metro Manila, Eight Congress Republic Act No. 7076, An Act Creating a People’s Small-Scale Mining Program and for other Purposes, Small-Scale Mining Act (RA 7076).

permits (Indonesia).¹⁷ In contrast other governments either do not regulate ASM or marginalise small-scale miners. For example, the recent Zimbabwean Order¹⁸ places a ban on the export of raw lithium ores.¹⁹ As much as this is regarded as a step in the right direction, it is a targeted restriction on ASM and a denial of the livelihood of many small-scale communities. There needs to be a robust regulatory/policy reformation by governments with large ASM sectors to ensure the maximisation of the benefits of ASM to address the social, environmental, and climate needs of society.²⁰ Thus, energy justice application promotes the protection of the rights of ASM miners/communities, the redistribution of benefits, and environmental protection. With tools such as licences to operate and social contracts, special land areas can be designated for ASM; miners will be educated and guided through streamlined licensing processes; and there is an effective implementation of stakeholder dialogue and partnership with LSMs and administrative governments to facilitate the subsistence of mining communities. A social contract ensures that the obligations of a sustainable and just ASM sector are borne by the miners, the governments, and the partnering companies or LSMs; providing some assurance of environmental protection, maintenance of quality of life, and preservation of livelihood.²¹

¹⁷ Indah Dwi Qurbani, Raphael J. Heffron, Arrial Thoriq Setyo Rifano, (2021), ‘Justice and critical mineral development in Indonesia and across ASEAN’, *The Extractive Industries and Society*, Volume 8, Issue 1, 355–362, ISSN 2214-790X, available at <https://doi.org/10.1016/j.exis.2020.11.017>; In Indonesia, individuals or local communities are granted artisanal mining permits under the Article 67 of the Amendment Law No. 3/2020 of the mineral and Coal Mining Law.

¹⁸ Statutory Instrument 213 of 2022. [CAP. 21:05] Base Minerals Export Control (Lithium Bearing Ores and Unbeneficiated Lithium) Order, 2022, otherwise known as the Base Minerals Export Control (Unbeneficiated Lithium Bearing Ores) Order, 2022.

¹⁹ Art 4, Statutory Instrument 213 of 2022. [CAP. 21:05] Base Minerals Export Control (Lithium Bearing Ores and Unbeneficiated Lithium) Order, 2022. A violation of the provision is punishable by a 3× fine of the value of the intended mineral export or imprisonment for 2 years.

²⁰ Tony Corbett, Ciaran O’Faircheallaigh, Anthony Regan, (2017), ‘Designated areas’ and the regulation of artisanal and small-scale mining, *Land Use Policy*, Volume 68, 393–401, ISSN 0264-8377, available at <https://doi.org/10.1016/j.landusepol.2017.08.004>.

²¹ Raphael J. Heffron, Louis De Fontenelle, Chioma Basil, Inigo Del Guayo Castiella, Sufyan Droubi, Mohammad Hazrati, Halima I. Hussein, Diane Kraal, Darren McCauley, Alicia Phillips, Emmanuelle Santoire & Xavier Arnauld de Sartre (2023), ‘Pathways of scholarship for energy justice and the social contract’, *Journal of Energy & Natural*

28.3 CHALLENGES AFFECTING THE IMPLEMENTATION OF ENERGY JUSTICE

Like any other sector, there are challenges that hinder the transformation of energy injustice in the ASM sector, including but not limited to:

- **Environmental impact of ASM:** ASM has a reputation for negative social and environmental impact resulting from landslides, and deforestation leading to the extinction of flora and fauna.²² This is because there is a lack of regulatory provisions on environmental obligations for ASM activities, licensing, and no technical support or awareness to build the capacity of miners for rehabilitation. Thus, abandoned pits lead to accidents, and toxic chemicals contaminate water sources and air without any remedy options.²³
- **Bureaucratic and complicated licensing processes:** In a bid to formalise the ASM sector, some processes for permit grants are too complex for the miners. Moreso, miners will only formalise and register their operation if there is some benefit to doing so.²⁴
- **Lack of Fair market access:** ASM has poor access to markets, finance, and support services, especially for export.²⁵ This was emphasised in the recent United Nations International Resource Panel reports on Minerals Resource Governance, where private

Resources Law, Volume 41, Issue 2, 211–232, available at <https://doi.org/10.1080/02646811.2023.2190689>.

²² Malavika Vyawahare, Will clean-energy minerals provoke a shift in how mining is done in Africa? March 30, 2023, available at <https://news.mongabay.com/2023/03/will-clean-energy-minerals-provoke-a-shift-in-how-mining-is-done-in-africa/> [Accessed May 4, 2023].

²³ World Bank. 2020, 2020 State of the Artisanal and Small-Scale Mining Sector. Washington, D.C.: World Bank, <http://www.delvedatabase.org/2020report>.

²⁴ The International Institute of Environment and Development, The Mining, Minerals and Sustainable Development Project MMSD, ‘Artisanal and Small-scale Mining’, Chapter 13, available at <https://www.iied.org/sites/default/files/pdfs/migrate/G00905.pdf>.

²⁵ Ibid.

sectors and governments were encouraged to implement transparent practices across supply chains to integrate ASM.²⁶

- **Conflict financing:** In some situations, ASM activities and miners are controlled by armed groups who use the resources extracted for financing conflicts and insurrection with the government or LSM operators in any case of land disputes and resource access.²⁷

28.4 CONCLUSION

No doubt these challenges may hinder the formalisation of the ASM sector and the involvement of miners through social contracts. However, the implementation of a social contract in this sector will not only protect the rights and well-being of miners but will deliver a just transition to a low-carbon economy. ASM will continue to play a vital role in the future of cobalt and lithium supply with the growing demand for the automotive sector,²⁸ and encapsulates the mineral enigma at the base of the green technology revolution as the world decarbonises.²⁹ According to Collegium Ramazzini at the UN COP 26 meeting, there is an urgent need for the mitigation of the neglected hazards and grave dangers of ASM to meet global demands for minerals, and that involves all tiers of governments, stakeholders, and mineral customers.³⁰

²⁶ European Commission, Social Dimension of Mining (Raw Materials Information System RMIS, Research and Innovation), available at <https://rmis.jrc.ec.europa.eu/employment-ebfea3> [Accessed May 4, 2023].

²⁷ Ibid.

²⁸ World Bank. 2020, 2020 State of the Artisanal and Small-Scale Mining Sector. Washington, D.C.: World Bank, <http://www.delvedatabase.org/2020report>.

²⁹ Andy Home, (2021), 'Column: Cobalt, Congo and a mass artisanal mining experiment', Reuter Energy, available at <https://www.reuters.com/business/energy/cobalt-congo-mass-artisanal-mining-experiment-andy-home-2021-05-13/> [Accessed May 4, 2023].

³⁰ Landrigan, P., Bose-O'Reilly, S., Elbel, J. et al. (2022), 'Reducing disease and death from Artisanal and Small-Scale Mining (ASM)—The urgent need for responsible mining in the context of growing global demand for minerals and metals for climate change mitigation'. *Environmental Health*, Volume 21, 78, <https://doi.org/10.1186/s12940-022-00877-5>.

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