Received: 16 June 2021 | Revised: 7 February 2022 | Accepted: 9 February 2022

DOI: 10.1002/jid.3643

RESEARCH ARTICLE

JOURNAL OF INTERNATIONAL DEVELOPMENT WILEY

Governing the artisanal gold mining sector in the Mano River Union: A comparative study of Liberia and Sierra Leone

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Abstract

This paper contributes to the growing literature on the dynamics and governance challenges of artisanal mining in sub-Saharan Africa. It examines the artisanal gold mining sector in Liberia and Sierra Leone, two neighboring post-war countries with extensive informal economies in the gold mining sector. This comparative case study explores factors that help reveal governance struggles, including the informality of the sector, the multiplicity of actors, ineffective monitoring, and gold price differences. It underscores the informality of the sector as a more pronounced problem that offers opportunities for corruption, smuggling of gold, human rights abuses, and exploitation.

KEYWORDS

artisanal and small mining (ASM), gold mining sector, governance, informality, Liberia, monitoring, Sierra Leone

1 | INTRODUCTION

Globally, there are more than 100 million people who depend on artisanal and small-scale mining (ASM) for their livelihood, especially in the developing world (Armah et al., 2016). Africa's diverse mineral resources have long attracted serious attention from governance actors, nongovernmental organizations, scholars, multinational corporations (MNCs), insurgent groups, and individuals for various reasons (d'Avignon, 2018; Hilson et al., 2017; Siegel & Veiga, 2009). The extractive sector in Africa is, however, contentious. On the one hand, it is a significant economic driver with substantial financial returns to governments and individuals. On the other hand, the sector is thought to have been a "resource curse" to many countries on the continent, as these countries are rich in mineral resources but remain poor, fully displaying "paradox of plenty" problems (Collier, 2008; Mailey, 2015; Siakwah, 2017). Regardless of its affluence in natural resources, Africa remains entangled in poverty with hundreds of millions of its people struggling to meet their needs. In many countries, natural resources have also been at the center of instability as causes and economies of civil wars, as in the cases of the Democratic Republic of Congo and Sierra Leone (Alao, 2007; Collier, 2008; Fiott, 2009; Rustad et al., 2016). While the "resource curse" concept is usually applied to large industrial mining, the economic stakes related to the exploitation of mineral resources tend to bring tensions and violence between miners and the actors that control the land. These conditions put mineral resource governance at the center of challenges to states' governance in resource-rich countries across sub-Saharan Africa.

ASM is carried out in different minerals like diamond, bauxite, and gold in the member states of the Mano River Union (MRU). The purpose of this article is to examine the artisanal gold mining sector, specifically in the countries of Liberia and Sierra Leone, because both countries have informal economies of the gold sector and form a cluster of countries with identical political and socio-economic features. Distinctively, both countries have only emerged from civil wars less than two decades ago in which the extractive sectors played a critical role in sustaining those conflicts. The artisanal gold sector could contribute significantly in meeting longstanding socioeconomic challenges in these countries, including employment, income inequality, and gross domestic product, if it is effectively and efficiently governed. Mineral proceeds make up a significant portion of the annual revenues to governments as well as individuals and household incomes across the sub-region. For example, in Liberia, in 2015–2016 total government revenue from the extractive sector was $56 million, of which mining contributed 49% (Extractive Industry Transparency Initiative [EITI], 2021). In Sierra Leone mineral exports contributed about 0.7% to the national GDP in 2018 (a decline from 2.7% in 2016) and accounts for 64% of total exports in 2018, (a decline from 91.1% in 2016). The country received $29 million in revenue from its mining industry operations (EITI, 2021). However, the sector is loosely regulated, raising concerns of economic leakages, exploitation, and social and environmental implications, which challenge artisanal miners, mining communities and governments' sustainable economic development drive (Hilson et al., 2017; Maconachie & Hilson, 2019; Siegel & Veiga, 2009).

What explains the governance problems of artisanal gold mining in Liberia and Sierra Leone? This article explores the factors that help reveal the governance struggles of artisanal gold sector in Liberia and Sierra Leone, including the informality of the sector, multiplicity of actors, ineffective monitoring, and price difference of the gold product within the MRU sub-region. The study underscores that the informality of the sector is a more pronounced problem that offers possibilities for corruption, smuggling of gold, human rights abuses, environmental degradation, and exploitation. The sector is also ineffectively monitored with a significant policy gap and faces sub-regional price differences of raw gold and different regulating actors as further governance problems. A more formalized gold sector would capture a specific policy framework on the sector locally and across the sub-region, which could address the governance problems of the sector. More specifically, formalization could involve "absorbing existing customary practices—developed informally by miners—into the mainstream of a country's legal and economic affairs" (Siegel & Veiga, 2009, p. 51). If governed effectively, the skills, knowledge, abilities and entrepreneurship found in the region's informal economy could alter the lives of millions of people. To unravel the governance difficulties in the artisanal gold mining sector, this study is grounded in scholarly discourse on the questions of domestic capacity and governance.

A qualitative comparative case study design for this article is based on evidence from similar cases with a political and socio-economic history of instability and underdevelopment. The study is built on the analysis of the official documents of the respective governments of both countries and published assessments of various stakeholders, including international organizations like the German Agency for Internalization Cooperation (GIZ), which is actively engaged in the sub-region's mining sectors. It starts with an overview of the governance problems, followed by the analytical framework, which discusses potential explanatory factors for the governance challenges. Next section presents the analysis of governance of the artisanal gold sector of Liberia and Sierra Leone, followed by a comparative assessment of both sectors. The article concludes by underscoring the need of formalization of the artisanal gold mining sector to improve working conditions and financial inclusion of the miners, as well as the chances of governmental revenue.

2 | ARTISANAL MINING GOVERNANCE PROBLEMS: AN OVERVIEW

Africa has experienced a boom in mineral extraction with states and MNCs leaping at investment in the industry, a condition many studies described as the "scramble" for Africa's mineral resources or the "new colonialism" (Curtis, 2016; Ojukutu-Macauley & Keili, 2008; Okeke, 2008; Rooyen & Solomon, 2007). Many companies, such as those listed on the stock exchanges of Toronto, Johannesburg, and London, have extended mining operations in the continent unprecedentedly (d'Avignon, 2018). This surging external interest in the continent's extractive sector comes along with growing governments' need to meet the expectation of their citizens. While this external presence is highly formal, local engagement can be informal in the form of ASM, which is a thriving constituent of the extractive sector in many parts of Africa. ASM involves a wide range of mining activities with differing status and interrelated features from country to country. About 10 million artisanal miners, as of today, exist across Africa operating without a license in minerals such as gold, diamond, and bauxite (d'Avignon, 2018; World Bank, 2020). A study of the institutional and legal environment in 58 resource-rich countries across the world found ineffective natural resources governance a general problem, but more so in Africa as all 20 African countries in that study were found to have poorly managed natural resources sectors (Mailey, 2015).

What is artisanal mining? The term has been defined according to different features such as "techniques ('low tech'), labour requirements ('no mechanization' or 'labour-intensive'), or legal status ('absence of formalization', 'illegal', or 'lack of adequate regulatory framework')" (d'Avignon, 2018; Hilson et al., 2017). According to the research presented by the World Bank, ASM is the most primitive type of informal, small-scale mining that is undertaken by individuals or groups that usually exploit minerals illegally using the simplest equipment (Barry, 1996; d'Avignon, 2018; Hentschel et al., 2001; Hunter, 2020). Sierra Leone defines ASM by the depth of the operations (hole dug) as "mining operations that do not exceed a depth of ten metres" (Mines and Minerals Act, 2009, p. 2). ASM is usually labor-intensive, informal, sometimes illegal, with limited capital investment and subsistence. This article defines ASM as being informal, ineffectively monitored, less supported, and done without or with mechanized tools and on a small scale.

There are many factors to the governance problems of mineral mining in Africa, especially in ASM. Governance is broadly understood as the interaction of structures, processes, and traditions that determine the exercise of power, decision-making, and how citizens and different groups have their say in society (Vymětal, 2007). Good governance denotes the recognition of such principles as broad-based participation, transparency, accountability, the rule of law, consensus orientation, responsibility, equity, inclusiveness, effectiveness, and efficiency (Gisselquist, 2012; Prabakaran, 2021). In the context of artisanal gold mining, governance signifies the process of decision-making and implementation, as well as the productive outcomes of those decisions in the sector. ASM in Africa is characterized by formal and informal actors and regulations in governing the sector with varying degrees of control emanating from different actors, including the government, corporations, land owners, and traditional authorities. This condition has always brought about issues of unequal power relations between artisanal miners and multinational corporations, as well as other license owners, which often lead to conflict between artisanal miners and MNCs (Katz-Lavigne, 2019). Moreover, the population dynamics associated with these localities build numerous connections between rural areas, cross border relations through mining, and trade and consumption as part of the broader governance challenge in the continent. However, the vast majority of miners are either excluded or incorporated in ways that worsen their already vulnerable conditions (Fisher, 2008), as in Liberia and Sierra Leone where the sector is largely unsupported and exploited.

The mineral mining in Africa echoes a pessimistic view of natural resources as few influential individuals or groups in society may capture resource wealth (Fiott, 2009), which is often a reason for societal acrimony and consequent natural resource conflicts. Especially in the ASM sector, despite important contributions to main mineral supply chains, small-scale miners are some of the world's most relegated workers, and their input to the global economy gathers little consideration (Hilson & McQuilken, 2014). Informality of the sector, a continuous governance problem, exposes ASM operators to dangerous and difficult working conditions. From mercury exposure to landslides to intense manual rock crushing, miners remain unprotected or under-protected on the work sites. Absence of technical and financial support for mine site improvements and occupational health and safety training for miners and their communities aggravates the situation (World Bank, 2020).

Illicit financial flows (IFF) from Africa's extractive sector represent another major problem for governance. Between 1970 and 2008, illicit flows were estimated above $1 trillion, an amount that surpasses annual combined developmental assistance and foreign direct investments inflows into the continent over the same period (Igbatayo, 2019). In 2015, the African Union and the United Nations Economic Commission for Africa (UNECA) Conference of African Ministers of Finance, Planning and Economic Development produced the Mbeki Report that claims that "the various means by which IFFs take place in Africa include abusive transfer pricing, trade mispricing, misinvoicing of services and intangibles and using unequal contracts, all for purposes of tax evasion, aggressive tax avoidance and illegal export of foreign exchange" (United Nations Economic Commission for Africa, 2015, p. 24). There are a number of drivers that enable IFFs, which include poor regulation of the financial system, trade openness in the framework of insufficient regulation and poor governance, and inadequate institutional quality and significant dependence on commodity exports (United Nations Conference on Trade and Development [UNCTAD], 2020). Because Africa receives 85% of its resources from the extractive sector and because most IFFs are happening in that sector, the continent loses between $30 billion and $52 billion per year (UNCTAD, 2020). In a study of IFF from the extractive sector that elaborated the level of risks associated with IFF, ASM as a subsector reports grand corruption at medium range, but a high petty corruption as a result of the diffuse resource flows, except by official export channels. Because the ASM sector in the majority of cases operates outside formal legal and economic structures and because individual miners depend on the sector for their survival, the overall economic, social and environmental impacts of ASM are likely to be more complicated. For instance, in Sierra Leone, although estimated to create considerable economic value, artisanal gold mining is a large source of IFFs and money-laundering with negligent taxation revenue for the government (Hunter & Smith, 2017).

The ASM sector also reports high illegal exploitation due to mineral accessibility and high tax evasion owing to smuggling (Igbatayo, 2019). Due to its high value, low weight and tradability on international markets, gold is at high risk of money-laundering by organized crime networks and smuggling (UNCTAD, 2020). The risks are present from exploration to the awarding of contracts, through production, processing, selling, and final export (Brugger & Engebretsen, 2019). Gold mining is an essential mechanism for trans-border exchange within the Mano River Region as well (Maconachie & Hilson, 2019), and the border commonalities between these countries aid the movement of people, goods, and services at an easier pace, which is also helpful in the smuggling of gold. This is not far from the fact that the sub-region struggles with border porosity (Afolabi & Idowu, 2018). Finance and lending systems remain informal and unregulated, leaving poor people susceptible to exploitation. Market mechanisms for buying gold remain poorly-developed and are dominated by informal buyers who operate outside the legal domain (Maconachie & Hilson, 2020). However, governments are now attempting certain measures to control smuggling. For instance, the Sierra Leone government has deployed mine monitors and is thinking about employing drones in order to stop the smuggling of diamonds and gold across its borders into neighboring Liberia and Guinea (Njini et al., 2020). Liberia Gold and Diamond Broker Association claims that the smuggling of the minerals by individuals and dealers is mostly to avoid the 5% tax (Genoway, 2018).

Poverty has also been a crucial factor often used to explain the reasons that push people into ASM activities (Hilson et al., 2017). Contemporary documentation of ASM emphasizes economic livelihood as a reason for ASM mining than its normative evolution as a cultural way of life for miners (Bryceson & Geenen, 2016). For example, as a measure of \$1.9 purchasing power parity in 2011, poverty level in Sierra Leone was 40.6% in 2019 and was projected to increase to 44.2% in 2020 (Sattar, 2020). In Liberia, it is expected to increase to 52% in 2021 from 50.9% in 2016 (Uematsu, 2021). However, poverty alone offers inadequate explanation why people engage in ASM (Musah-Surugu et al., 2017). Other factors include institutional failure, which can explain external takeover, and low political and regulatory environment as compelling factors to engage in ASM. Institutions as sets of rules, norms, and operating practices channel actors behavior by constraining or enabling them in a given society. Institutions are expected to ensure participation, inclusion, and continued engagement, which remain a significant challenge throughout the ASM value chain. There are considerable imbalances in the power and voice of actors in the sector, where individual miners and ASM communities continue to be the least heard and able to participate (World Bank, 2020). Lack of knowledge, understanding, constructive engagement of main stakeholders and the insufficient support of decision-makers contribute to inadequate governance mechanisms. Additionally, policy design and implementation in the ASM sector continue to be fragmented and often pushed by international agendas and market demand, leading to distressed local adaptation strategies (Musah-Surugu et al., 2017; World Bank, 2020).

Other challenges border on human rights. The ASM sector is a documented arena of human rights abuses. Child labor is ubiquitous, so is gender-based violence (Rofles, 2013). An estimated one million children work in Africa's small-scale gold mines for as little as \$2 a day (Rofles, 2013). Child labor in ASM is a shared result of domestic poverty, cultural practices, and a transition away from farming toward mining (Hilson, 2008, 2012). Women constitute a considerable part of the ASM workforce and suffer from specific forms of workplace discrimination. Adverse side effects of mercury use, unequal pay for similar work, physical abuse, sexual harassment, and inability to own land or mining titles without permissions (World Bank, 2020). Women also suffer price discrimination due to their low level of negotiating skills. "Social norms, institutions, and networks greatly influence male and female's participation in ASM" (World Bank, 2020, p. 92). As ASM has become a growing phenomenon in Africa, the governance challenges, especially the ones hindering the formalization of the sector, need to be addressed.

3 | ANALYTICAL FRAMEWORK

Artisanal gold sector constitutes an important economic source for thousands of individuals and households in Sierra Leone and Liberia, and their mining population has grown exponentially since the end of their civil wars in 2002 and 2003, respectively (Johnson, 2012; Utas & Jörgel, 2008). Despite being associated with a multitude of environmental, health and safety, and social concerns, this article is focused on a range of other governance related factors, including: the informality of the sector, multiplicity of actors, ineffective monitoring, and differences in the price of gold in Liberia and Sierra Leone. The debate on informal economy since it was first conceptualized by Keith Hart in 1973 has produced many terms, describing it as "subterranean, hidden, grey, shadow, informal, clandestine, illegal, unobserved, unreported, unrecorded, second, parallel, and black" (Feige, 1990). In other words, informal activities are those that fall beyond the scope of the state (Sinha & Kanbur, 2012). In the context of artisanal gold mining, this study understands the informality of the gold sector as low-tech, low productivity, and mostly unsupported and unregulated by the government.

The multiplicity of actors generally refers to individuals or groups that have direct or indirect impacts on the sector in diverse ways: either as miners, traders/dealers, or supporters of mining activities, local government officials, and traditional leaders (chiefs).

Monitoring is a systematic and purposeful activity to know how activities of a program are being implemented to identify challenges and address them amicably (Bartle, 2011). In the context of the ASM gold sector, monitoring is understood as the systematic observation of the sector, including activities like mining and trade by the government to ensure that standard or acceptable practices are upheld.

Price differential is the different prices for the same commodity and unit by different customers based on different reasons such as payment patterns, product form, taxes and import duties, perceived value, and customer segment (Sawajhani, 2020). In the context of this study, price differential is understood as the differences in the price of gold per the same unit, such as kilogram within the Mano River sub-region. The study does not investigate why the price of gold differs across the sub-region but rather examines it as a phenomenon that may explain governance problems in the gold sector of Liberia and Sierra Leone. These problems may collectively impact the proper governance of the artisanal gold sector in both countries.

A comparative case study methodology is used to develop greater understanding of the governance challenges in the ASM sector in Liberia and Sierra Leone. Patterns, trends, similarities, and differences are examined to assess the relationships of the above identified factors between the two countries. Comparing and contrasting processes and institutions of two similar countries allows the isolation of specific national variants. The study is grounded upon empirical evidence gathered from the literature.

4 | GOVERNING ARTISANAL GOLD SECTOR IN THE MANO RIVER SUB-REGION

4.1 | Liberia

Artisanal gold mining in Liberia is a longstanding engagement from alluvial placers with a production of more than 30 000 oz per annum at its peak in the 1940s. The mining sector, generally, contributed about 60% of export income and 25% of the gross domestic product between 1960 and 1980 (Wilson et al., 2017). The boom in production was interrupted by the civil war (1989–2003) with plummeted output between 2010 and 2015 estimated at 18 500 oz. per annum (Gunn et al., 2018). The country's ASM sector is estimated to have some 100 000 miners, including diamond and gold subsectors (Republic of Liberia Ministry of Mines and Energy, 2020). The gold reserve is estimated at three million ounces (Wilson et al., 2017). Growing attention of mineral exploration is directed to gold, and current licenses are distributed over the Archaean and Proterozoic terranes, with a concentration on major regional shear zones and belts of identified alluvial gold (Gunn et al., 2018). Mining activities fall within the scope of ASM, medium-size domestic enterprises, large-scale, and exploration companies, and 1142 (88.3%) of the 1293 mining operations are small-scale artisanal operations (Wilson et al., 2017).

The responsibility to manage the mineral sector of Liberia rests upon the Ministry of Lands, Mines, and Energy (MLME) for statutory oversight on the energy, land, and water sectors, including the formulation and implementation of policies and granting of mining licenses. The Mining and Minerals Law of 2000, which governs the mining sector, is complemented by Exploration Regulations and the Minerals Policy 2010. Together they outline the national expectations for all stakeholders' contribution in managing the sector (Wilson et al., 2017). The Mineral Policy 2010 seeks a framework for the sustainable management of mineral resources, direct intervention by national institutions as well as other stakeholders, outlines sector expectations to contribute to revitalizing the economy, social regeneration and enhance democratic culture (Mineral Policy of Liberia, 2010).

The ASM sector is addressed under Section 9 of the Mineral Policy, yet in a very declarative and broad manner. The Mining and Minerals Law of 2000 identifies five types of mining licenses, including Prospecting, Exploration, Class “C,” Class “B,” and Class “A” licenses. These licenses differ by the type and scale of operations, size of production areas, validity periods, etc. (see Wilson et al., 2017; Mineral Policy of Liberia, 2010). ASM operations are regulated through the granting of prospecting license, which is given when an area has not already been subject to a valid mineral right granted to another person and the area granted cannot exceed 100 acres; and Class “C” license, which defines the production area to 25 acres for small-scale operations, by the MLME. This right is only limited to Liberians with restriction to secondary deposit and on ASM only without heavy-duty or earth moving equipment. Artisanal small-scale miners may apply for a maximum of four of those licenses on a total area of 100 acres of land (Small, 2012; Wilson et al., 2017). However, disputes over land and overlaying mining claims create significant problems. While some of the most profitable mines are located in distant and hard to reach areas, the government is short in the capacity to monitor and regulate mining activities or enforce mining laws and regulations. In 2016, the Ministry of Mines and Energy produced a guidance to regulate ASM miners to urge them to join cooperatives, which could potentially upgrade working conditions. The implementation of the guidance began late in 2020 by creating some training programs for mining agents and mineral inspectors and issuance of ID cards to ASM miners across the country (International Trade Administration, 2021). While the ASM sector has the potential to provide significant employment, bolster the economic wellbeing of individuals, and limit rural–urban migration, miners require training in business and technical skills for sustainable mining, financial skills for income diversification, and to procure lawful access to deposits and markets. They also need information about fair prices for their products, which is essential in promoting good mining practices and preventing exploitation by buyers (Mineral Policy of Liberia, 2010). Gold mining locations are remote, and high transportation cost creates avenues for dependency on informal buyers who purchase gold at production sites. Financial lending systems are informal and unregulated, thus exposing the miners to exploitation and miners took loans from buyers who receive gold in exchange for their loans at a lower price than what exists in the actual gold market (Maconachie & Hilson, 2020).

There is absence of a coherent system to effectively manage the mining sector as different agencies along with the MLME have complex and competing mandates and authority, and unclear responsibilities within the MLME and low-skilled personnel make it difficult for inter and intra agency coordination to attain the sector's full potential (Karamira & Mattner, 2017). These issues undermine efficient administrative function. For instance, mining licenses have long been granted without clear-cut legal guidance of the process, and mining inspectors do not have related training, though it is required to conduct technical monitoring of the sector appropriately. Additionally, payment for licenses and royalties are made to the Liberia Revenue Agency, but revenue authorities did not report non-payments of revenues to past institutions, which undermines the government's revenue collection without previous records (Karamira & Mattner, 2017). However, the Mining Cadastre Administration Support Project (MCAP) program mitigates challenges that relate to organizational delivery by creating a centralized database for all license holders and enabling data sharing between revenue agencies in the mining sector (Global Delivery Initiative and the World Bank, 2019; Karamira & Mattner, 2017).

The Minerals and Mining Law 2000 also did not offer a clear definition of artisanal mining. The Law provides only a broad definition of ASM, stating that "Small-Scale Operation' shall mean a Mining Operation other than an industrial operation (Section 1.3 [ccc])." It does not provide any detailed legal frameworks that should guide artisanal miners and be held accountable (Bockstael, 2014). Alternatively, the Class "C" licence gives a license holder the right to conduct mining "predominantly" as a small-scale operation. The only mention of artisanal mining in the law was in the 2004 addition of the 40th chapter that provides for controls on the export and import of rough diamonds based on the minimum requirements of the Kimberley Process Certification Scheme (KPCS) (an initiative that regulates international trade in diamond by certifying that diamonds are not conflict-related) (Bockstael, 2014). The law empowers the Central Bank of Liberia to occasionally promulgate regulations to govern the import and export of minerals obtained from small-scale operations, which explains the absence of a substantive law that consistently guides artisanal mining operation specifically (Minerals and Mining Law 2000). Conditions that may warrant the promulgation of these irregular regulations are unclear. Considering that many legal changes and innovation have occurred independently since the Minerals and Mining Law 2000 was adopted, such as the Revenue Code 2009 and 2010 Mineral Policy and has not been amended to reflect this changes may constitute a gap in the legal framework that it needs revisited (Bockstael, 2014).

The lack of clarity in the definition of ASM creates room for misinterpretation as miners, who used earthmoving equipment for a short time and who may also consider themselves as Class C miners, were sometimes required to attain a more advanced or costly industrial Class "B" licenses (Bockstael, 2014). This condition causes grievance between miners and the law, which the MLME had tried to resolve by creating a way for cooperatives to limited earthmoving equipment on Class "C" mining licenses (Bockstael, 2014). The approval to use such equipment is only beneficial to the handful of those miners who already have the capital to consider using such equipment.

The Mineral Policy of Liberia states that ASM miners "need help in procuring lawful access to deposits, to markets and to information about fair prices for their products" (Mineral Policy of Liberia, 2010, p. 12). This aspect needs improvement to enhance product value and mineral benefits to artisanal miners. While it is believed that dealers and buyers would sell gold at close to the world market price, different studies indicate that there was a large range in prices buyers paid miners and diggers for gold. Foreign national buyers and illicit actors are usually willing to pay more than the world market rate for gold (Hunter, 2020).

Additionally, illicit artisanal gold miners are a major governance issue. These are individuals who mined without a license, and some of them carried out their operations in remote locations, where supervision is difficult. The Gola Forest National Park, which stretches between Liberia and Sierra Leone has been impacted by local miners, including Sierra Leoneans across the border who illegally encroached by engaging in active mining operations (David, 2019). Most of the artisanal miners fall within the category of informal or illegal miners as only a handful of them possess mining license, and part of the government's effort in tackling this challenge is encouraging miners to carry out their operations through cooperatives, which is essentially a move to formalize the sector (International Trade Administration, 2021). It is believed that official gold flows sourced from ASM are small in comparison to the scale of informal ASM flow (Hunter, 2020). Gold smuggling is prevalent along the Liberia-Guinea border, where a fair amount of gold is smuggled to Guinea, which has better prices for gold than Liberia (Herbert, 2009). It is estimated that roughly 90% of gold is smuggled out of the country at a value of $159 million to $455 million (Hunter, 2020, p. 9). The artisanal gold sector also grapples with human rights and environmental challenges. There are reports of gang groups extorting and assaulting miners at mining locations, death resulting from mudslides, and child labor (Bureau of International Labor Affairs, 2019; Herbert, 2009; Shilue, 2019).

Liberia's artisanal gold sector has been an enduring economic sector. However, its informality and inconsistency in governing the sector means that the country has not only lost meaningful revenue through illicit activities but also through ineffective mining practices that undermine productive returns.

4.2 | Sierra Leone

Mining became prominent in Sierra Leone in the 1930s with chromite, diamond, and gold before exploration, which goes on to determine the extent of mineral deposits in the country (D'Angelo, 2015; Wilson, 2013). Gold deposits were first discovered in 1926 in the Makoke River near Masumbiri, and initial prospecting occurred in the 1930s with many companies engaged in the alluvial gold production, which continued with low-tech mining between 1930 and 1956 with an official production of 342 784 oz (Maconachie & Hilson, 2011). However, it experienced a decline in the late 1950s, as the government implemented the Alluvial Diamond Mining Scheme (ADMS) in 1955, which granted indigenous Sierra Leoneans the right to apply for diamond mining licenses for the first time (Maconachie & Hilson, 2011). This went on to influence a mining shift from gold to diamond. Prospecting activities undertaken by the Sierra Leone Geological Survey Division disclosed the further extent of gold in the country as plentiful in the granite-greenstone terrain in many regions, including the Sula Mountains (Maconachie & Hilson, 2020).

In terms of governance, the Ministry of Mines and Mineral Resources (MMMR) provides policy guidance for artisanal mining, and the National Minerals Agency (NMA) provides primary regulatory responsibility for the sector. The Ministry of Finance, Ministry of the Environment, and the Environmental Protection Agency (EPA) are also key players in managing the artisanal sector. An average 80 000 people are active in ASM and consist mainly of youths with a significant number of women who are mainly single mothers (Stylo et al. 2020).

The Artisanal Mining Policy of 2018 intends to provide a clear framework that will improve the artisanal mining sector in aspects of governance and management that will concern environmental protection, livelihood skills for miners, community and occupational health and safety, fair market deals for minerals, and strengthening linkages between the sector and other sectors of the economy. Though the policy identified the need for a robust artisanal mining sector, it relies on the National Minerals Agency to meet its goals, an institution that is already challenged with inadequate resources in discharging its regulatory role of the mineral sector. The policy also acknowledges that the Mines and Minerals Act 2009, which is the principal legislature, needs to be revised to precisely define artisanal mining governance and to reflect the realities in the sector. These are indicators of a potential malfunctioning policy by relying on a legal base, which should have been first reviewed to ensure an effective and efficient policy implementation. Though a formalized gold sector is understood to bolster the country's economy, it suffers neglect from the government (Maconachie & Hilson, 2011). The Poverty Reduction Strategy Paper, a major development agenda, did not emphasize the economic impact of the gold sector and the need to review it, and the 2007 and 2008 Annual Progress Report made no mention of the sector at all.

Government's effort to govern the sector combines it with other mining subsectors, mainly diamond, which is arguably the most popular mineral in the country even though these sectors differ in many ways, including product value, mining processes, and different markets. Government has not formulated a gold mining policy to regulate the sector specifically. Maconachie and Hilson (2011, 2020) note that without a formalized system, gold from Sierra Leone, especially from three main gold mining districts in the north of the country, Bombali, Koinadugu that borders with Guinea and Tonkolili remain largely exposed to smugglers from Guinea and Mali, through the largely porous borders.

The legal framework for extractive governance is the Mines and Minerals Act 2009, and this gives authority and guidelines to artisanal miners to operate. This Act treats artisanal mining broadly and artisanal gold mining is only implied. It further requires that application for artisanal mining license document evidence that shows Chiefdom Mining Allocation Committee or rightful occupiers of the land have consented to give the land for mining purposes (Section 85[2] [c]). With this, it prioritises consent from Chiefdom Mining Allocation Committee over landowners and occupiers, and it is unclear who constitutes the Chifdom Mining Allocation Committee as the Act does not define it (Section 96[2] [b]). These differences may serve as a window of conflict in governing the sector. Sierra Leone is also a member of the African Mining Vision and the Extractive Industry Transparency Initiative, which also impacts artisanal gold mining activities by encouraging and requiring best practices in the sector. Regardless of all these, there is ineffective regulatory oversight of artisanal gold operations as compared to large scale and small scale mining operations, especially diamond, iron ore, and rutile. Artisanal mining governance is interspersed with localized approaches, including Mining Committees and Supporters who fund artisanal mining operations, where mining rights holders are financially incapable, are not recognized by law (The Republic of Sierra Leone Artisanal Mining Policy, 2018).

Gold is an essential medium of exchange in West Africa in the absence of a standardized regional currency and facilitates trade across member states. Gold miners in Sierra Leone underlined the relevance of gold as a currency in Guinea for merchandise, and such movement of gold is aided by the close proximity of the border (Maconachie & Hilson, 2020). In importing finished goods from neighboring countries, as much as 90% of Sierra Leone's gold illegally departs to Guinea and Liberia before entering the formal supply chain (De Haan & Ronkainen, 2019; Maconachie & Hilson, 2011).

Miners are attracted by higher value for their products in those countries, especially Guinea, as a reason for trading their gold there (Hunter & Smith, 2017). The low incentives for gold dealers to export their product through official channels that are motivated by the remoteness of many gold producing areas, immobility of buyers, porous international borders, and low official buying prices arguably constitute the challenges of developing a comprehensive and effective gold industry in Sierra Leone (Maconachie & Hilson, 2011). Financial lending systems are informal in many mining areas, and lenders, many of whom are also buyers of gold, receive gold in exchange for their loan below the standard price of gold in the market (Maconachie & Hilson, 2020).

The National Minerals Agency enforces and manages mineral rights, collects fees, processes mining licenses, disseminates geological information, and regulates the trade in minerals (Hunter & Smith, 2017). However, there is little to no official database on artisanal gold production levels even though the law requires miners to submit to the Agency a form detailing production amounts from their mines (Hunter & Smith, 2017). While Mines Monitoring Officers should ensure that mining activities are carried out through legitimate channels, they face constraints of mobility and low salaries, which weaken their effectiveness and expose them to corrupt behaviors (Maconachie & Hilson, 2011).

The artisanal mining value chain provides a better way to understand the diversity of legal and illegal trade routes and actors in the artisanal gold sector. These actors take different roles depending on the situation. Internally, there are license holders, gang leaders/laborers, individual workers, small and bigger traders/agents, goldsmith, licensed exporters; and externally, there are regional refiners/buyers, and international refiners/buyers (De Haan & Ronkainen, 2019). Gold can be sold at mining sites by internal actors to small, unlicensed traders who are typically the agents of more prominent traders. Likewise, small, unlicensed traders may sell directly to the exporters. Gold traders (licensed/unlicensed) are largely unorganized with most preferred working with relatives and friends who may serve as buying agents for them (De Haan & Ronkainen, 2019).

Sierra Leone's artisanal gold sector is a means of legal and illicit income, as well exploitative source, which is largely due to ineffective governance and the multiplicity of the actors of the sector.

5 | DISCUSSION AND COMPARATIVE ANALYSIS

This section provides a comparative analysis of the factors that explains governance problems of artisanal gold sectors of Liberia and Sierra Leone.

5.1 | Informality of the sector

Governing the extractive sector requires effective policies, regulations, and structures to manage its activities. In both countries, the gold sector is a subsector of the extractive industry and differs in procedures to some extent with other subsectors, such as diamond and bauxite. Before the Artisanal Mining Policy 2018, Sierra Leone's artisanal mining sector was somewhat regulated by the Mines and Minerals Act 2009 and the Mining Core Policy 2010, which regulated all types of mining. Unlike Sierra Leone, Liberia does not have a specific artisanal mining policy. The whole extractive sector is regulated by the Mining and Minerals Law of 2000 and the Exploration Regulations and the Minerals Policy 2010. Artisanal mining is treated alongside other forms of mining under the same regulation. Section 9 of the Mineral Policy, which addresses the ASM sector, is highly declarative and generalistic, proposing mainly future actions and possibilities. In rural settings where a large part of the entire population relied on agriculture, artisanal gold mining is a crucial source of income to diversify their sources of economic livelihood. The prevailing difficult living conditions following the end of civil wars in both countries became a motivation for a growing involvement in the gold sector. The artisanal gold sector in both countries is low-tech and mostly unsupported.

In the absence of specific regulation on artisanal gold mining, the existing general mining policies are the applicable ones in governing the sector. Miners are required to obtain mining license from the institutions in charge of mineral resources, but mining policies are somewhat imprecise in terms of equipment to use, size of the workforce, and extent of mining operations (see, Liberia Minerals and Mining Law 2000; Sierra Leone Mines and Minerals Act 2009). Support for the artisanal gold sector may include the provision of effective machinery for miners, education on mining and the environmental protection, pricing and negotiation, demarcating productive mining areas, bringing illegal/irregular miners into the legal domain, and understanding the existing standards in the sector. The absence of these results in miners violate mining codes of conduct, low productivity, ineffective enforcement of current laws, and human rights abuse as child labor. The informality of the sector increases its vulnerability to irregularities such as exploitation of miners, disregard of social factors like environmental protection, and communal development as there is an absence of specific gold policy and/or ineffective and inefficient implementation of available ones. These conditions affirm informality as a major problem in the governance of artisanal gold sector in both countries though, on a different scale with Sierra Leone being a step ahead with the adoption of the Artisanal Mining Policy 2018. While it is not gold specific, the policy stands to address some of the challenges in the gold sector, which is absent in Liberia's case.

The informality of the ASM gold mining in Liberia and Sierra Leone is significant, making the sector vulnerable to instability, illicit activity and illicit financial flows. The informality has also given rise to a range of environmental and social problems, such as the water pollution, arable land degradation, as well as the negative health impacts. As such, formalizing the ASM sector is an important, timely and pressing developmental opportunity. For instance, in 2016 Ghana hosted the first global multi-stakeholder "action dialogue" on ASM, organized by the International Institute of Environment and Development (IIED) to promote the rights-based formalization of the sector (McQuilken & Hilson, 2016). In essence, it was found that while formalization should be largely concerned with the establishment of policy and regulatory frameworks to legalize ASM, purchase of a license, and management of activities, it also should address the extent to which such policies and regulations are successfully activated, implemented, and enforced by the relevant authorities. Additionally, identifying mechanisms to involve and consult with all of the various stakeholders could help produce more effective policy that is better connected to the realities on the ground and ASM communities as a whole (McQuilken & Hilson, 2016).

Formalization, however, brings a set of its own challenges, including human and financial commitment. The Alliance for Responsible Mining specifically identifies several important factors, which can serve as obstacles for ASM formalization, such as stakeholder motivation, costs of formalization, including access to capital and equipment, flawed national mining legislation, lack of experience and slow processes within ASM sector, as well as conflicts of interest among the stakeholders and lack of confidence among miners. ASM formalization must address these key problems, while also supporting and incentivizing miners to become formalized (Intergovernmental Forum, 2018).

5.2 | Multiplicity of actors

In Liberia, the MLME as the principal regulator of the extractive sector grants mining licenses. There has always been a contention on what constitutes artisanal mining based on the license issued. In Sierra Leone, the MMMR provides general management of the extractive sector and the NMA, which has administrative and regulatory power of the mineral sector. Paramount chiefs, chiefdom committees, and lawful occupiers of the land also exercise control over the sector through directly negotiating lease agreements, and through the Minerals Advisory Board as provided for by the Mines and Minerals Act 2009 (Section 11[2][m]). Paramount chiefs are regarded as custodians of the land to whom land right is entrusted on behalf of the local people and whose role has also been contentious. Chiefs sometimes grant surface rent certificates to potential miners and deny their opponents (Maconachie & Conteh, 2021).

With these different bodies of authority, miners often face the challenge of seeking and managing mining rights. Though the ministries issue licenses to miners they do not negotiate agreements between traditional leaders and landowning families and license owners on what the latter should offer as royalty fees to the former or as part of their corporate social responsibility (CSR). The Sierra Leone Mines and Minerals Act 2009 requires holders of small or large scale mining licenses to assist in developing mining host communities and promote the general welfare and quality of life of the inhabitants (Section 138). This is done in accordance with the Community Development Agreement, hence Community Development Fund as the Act provides. However, it is often conflicted with CSR, which is not mandated by law (Sierra Leone Minerals Policy 2018). Liberia is committed to enforcing CSR through its Mineral Policy 2010. These conditions open possibilities for confrontations and for exploitation on both ends based on negotiation skills. Since these agreements are not binding, parties may renege them without being reprimanded by the law. Miners also boycott state procedures to work with local authorities whom they could influence based on their needs (Stylo et al. 2020). The different actors with authority in the sector have been a gray area in governing the sector.

5.3 | Ineffective monitoring

Monitoring is an essential aspect of governance as it allows for the identification of gaps in activities and general progress of a program. In Liberia, the Ministry of Mines and Energy regulates ASM activities, as mandated by the Minerals and Mining Law. In Sierra Leone, the National Minerals Agency (NMA) has responsibility to implement policies adopted by the MMMR. The Mine Monitoring Officers who interface with actors in the field fall within the NMA. Both countries utilize the service of mines monitors who supervise mining activities to ensure that mining procedures are adhered to by license holders and all those who engage in mining activities. Such requirements include the observance of conditions as outlined on a mining license such as the extent to which they could mine, human rights and environmental protection, transparency and accountability, and license renewal once they expire. They also monitor to prevent illegal mining and expose offenders for legal actions (Maconachie & Conteh, 2021, p. 44).

Both countries share a similar issue of ineffective monitoring, leading to further problems in the sector, such as illegal mining, illegal transactions, and smuggling to other countries. The mines' monitors and traditional leaders (chiefs) are also accused of involving in manipulative acts with miners to operate illegally (Stylo et al., 2020). Miners are expected to report the total of their gold product for deduction of tax based on that total, but ineffective monitoring provides incentives for some miners to evade the process by underreporting or not reporting their actual gold quantity (Stylo et al. 2020). This is also a matter of integrity and honesty, transparency and accountability on the side of the miners to the mining communities and the government. The failure to renew licenses and mining beyond the provisions of those licenses undermine revenue generation. Licenses are granted to mine specific minerals, but the miners utilize the chance of ineffective monitoring to mine other minerals that are not permitted as per their license.

Large scale miners could also infiltrate the artisanal mining sector due to the weaknesses in monitoring of their activities. Illicit mining, especially by foreign nationals of both countries in each other's territory as well as smuggling of gold from both countries are also blamed on ineffective monitoring of the sector (Black, 2020). These encroachments and uncontrolled mining activities do not only explain violations of mining codes of both countries but also violate the environmental and wildlife regulations, thus demonstrating their vulnerability and incapacity to govern the mining sector effectively. But in all of these, the institutions are faced with challenges of inadequate personnel and remoteness of some mining locations, which are difficult to access. Also, mines monitors are poorly paid and could go for months without receiving a salary, which incentivizes corruption in the sector by granting illegal access, trade, and protection to miners contrary to mining protocols (Maconachie & Conteh, 2021).

5.4 | Difference in price for gold

The gold from Liberia and Sierra Leone is traded locally and internationally at different prices. In both countries, license holders are restricted to the purpose of their license in the sense that exporters do not buy gold products from local miners, but rather purchase from the local dealers. Local dealers buy from miners and sell their product to exporters, however they cannot export. Therefore, the local dealers occupy the space between the gold miners and the gold exporters. A challenge that miners face is taking their product to the dealers, who are mainly based in bigger towns far from the remote mining locations. Unlicensed dealers who move to those remote places to buy the gold from the miners, sometimes at mining sites buy at low prices. The transaction costs in gold in Sierra Leone and Liberia differ with neighboring Guinea and Ivory Coast. Guinea has a royalty rate of 0.5% and Liberia and Sierra Leone have 3%, respectively (Herbert, 2009; United Nations Industrial Development Organization, 2018).

Information asymmetry often leads to exploitative transactions as buyers being more knowledgeable of the gold prices than the producers. Sub-regional differences in the cost of the gold attract many miners, especially those that are very close to international borders to smuggle their gold to Guinea where they are sure to have a better bargain for their produce. There is a 5% export and sale tariff on gold in Liberia, 2% in Sierra Leone, and 1% in Guinea (Genoway, 2018).

Both countries, however, have employed various institutions, and they are members of different international initiatives, which offer policy directives and administrative oversight, to govern the gold sector. For instance, they are members of the EITI that promotes transparency and accountability in the sector by requiring and encouraging dealers and member states to publish what they pay and what they earn in the mineral trade. The GIZ helps address the challenges in organizational development through the implementation of the Mining Cadaster Administration Support Projects that offers an effective database for licenses.

6 | CONCLUSION

The case to effectively govern artisanal gold mining is not new across the MRU with member states facing growing challenges in managing the sector. Gold is a high demand mineral in the sub-region, and this study underscores how significant the artisanal gold sector has been to Liberia and Sierra Leone. It points out how nuanced artisanal gold mining informality can be, and how, in many cases, the policy, administrative and institutional barriers prevent successful governance of ASM. The persistence of ASM informality pushes many actors to develop "new ideas on how to bring the sector's operations into the legal domain, where, it is believed, they can be regulated, monitored and supported more effectively" (Hilson et al., 2017, p. 82). Improvements in economic and social performance of the artisanal gold mining sector depend on advancing legislation and formalization, organization, and effective and efficient monitoring of ASM activities. Improvements in governance through formalization also means upholding the rights to mine. Providing rights, securing licenses, equipping, and tracking the activities not only give benefits to miners, but also supports legal recognition, as well as imposes duties to conform to environmental, labor, and human rights standards. Because ASM nearly always develops in advance of the legal system, it is crucial for the MRU countries to review their mining laws to prioritize the gold sectors to realize their full potential. When the gold sector is effectively governed, it would help address the protracted problems of unemployment and poverty across the sub-region as miners would benefit more from their gold and the government would also gain more in taxation and export returns.

DATA AVAILABILITY STATEMENT

Data are derived from public domain resources.

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How to cite this article: Kalokoh, A., & Kochtcheeva, L. V. (2022). Governing the artisanal gold mining sector in the Mano River Union: A comparative study of Liberia and Sierra Leone. *Journal of International Development*, *34*(7), 1398–1413. https://doi.org/10.1002/jid.3643