ICESDA 2024 **PROCEEDINGS**
ISSN -3057-3912 PRINT
3057-3920 ONLINE

Community Mining: The Evolving Paradigm in the Ghanaian Small-Scale Mining Sector – The Case of Tokwae Community Mining Scheme in the Ashanti Region of Ghana

Track 6: Environmental And Social Governance Systems For Sustainable Development Of Africa

Simon Victory Quarcson Hamenoo[1], Theresa Y. Baah-Ennumh[2] and Rudith S. King[3]

[1,2]Department of Planning, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana.

[3]Centre for Settlements Studies, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana.

Abstract

Globally, Ghana is one of the major mining jurisdictions that has rolled out community mining schemes in response to curbing illegal small-scale mining. However, knowledge about the emerging paradigm in terms of their capacity, operations, and contribution (COC) is very opaque. Little is also known about the strengths, weaknesses, opportunities and challenges (SWOT) of scheme. Again, not much is known of the scheme's efforts towards inclusiveness, responsible and sustainable mining (IRS) in the quest of bringing to an end the long-standing problem of illegal small-scale mining. The scheme according to the Ministry of Lands and Natural Resources are intended to provide livelihoods for members in the mining communities, promote sustainable and responsible mining and bring to an end the problem of illegal mining. As a result, the paper sought to present the COC-IRS-SWOT analysis of the scheme as a basis for scaling-up of the scheme within mining communities in Ghana which will further form grounds and country study for replication within other mining jurisdictions in Africa. The study made use of the case study research approach in zeroing on the Tokwae community mining scheme. The study made use of content analysis, recursive abstraction, deductive reasoning, and triangulation of information to arrive at conclusion. The generally found that community mining schemes have the potential of employing several thousands of small-scale illegal miners in the country with improved working conditions, and contribution to reducing environmental degradation towards the achievement of the SDGs. The paper recommends that the scheme offers a good model for replication in other mining jurisdiction in Africa towards reducing the problem of illegal small-scale mining, environmental degradation and the sustainable development in Africa through the SDGs.

Keywords: Community mining, Capacity, Operation, Responsible, Sustainable, SWOT

Hamenoo, S. V. Q., Baah-Ennumh, T. Y. and King, R. S. (2024). Community Mining: The Evolving Paradigm in the Ghanaian Small-Scale Mining Sector – The Case of Tokwae Community Mining Scheme in the Ashanti Region of Ghana. In: Owusu-Manu, D., Adesi, M. and Acheampong, A. (Eds) Proceedings of the 1st International Conference on Environment, Social, Governance and Sustainable Development of Africa (ICESDA-2024), 26-29 March 2024, Kwame Nkrumah University of Science and Technology (KNUST)-Kumasi, Ghana, Green Communities International, 528-556.

Introduction

One major problem in the Ghanaian mining sector is illegal small-scale mining (Bach & Sundst, 2014; Obeng et al., 2015; Kuffour, Tiimub & Agyapong, 2018). The problem though has a long-standing history, it became intense in the last few decades due to the proliferation of Chinese and foreign nationals into

[1] simonvq5@gmail.com

ICESDA 2024 PROCEEDINGS
ISSN -3057-3912 PRINT
3057-3920 ONLINE

the country (Armah et al., 2013; Antwi, 2014), a surge in the need for mechanization in the mining process (Hilson and Garforth, 2013) and the customary nature and disposition of most Ghanaian lands (Schoneveld, 2010). The implications these trends leave on the environment is getting a growing momentum in empirical literature and its effects are tangible and long-term. Some studies have also shown that the main environmental problems associated with gold mining activities are mercury pollution (UNIDO, 2000; Babut et al., 2003; Nartey et al., 2011) from gold processing, ecosystems destruction and environmental degradation (Hilson, 2002; Hilson and Pardie, 2006; Asante et al., 2007; Hilson et al., 2007; Yeboah 2008) primarily from the small-scale mining. It is generally known that activities of small-scale mining (SSM) in Ghana often go side-by-side with subsistence farming (Hilson and Garforth, 2013). The mercury pollution could lead to the contamination of crops on or near polluted sites (Odai, 2008; Teschner et al., (2019) posing health implications to communities (Spiegel and Veiga, 2009; Richard et al., 2014; Hilson et al., 2007; UNEP, 2012) and food production and consumption (Donkor, 2015). In recent times, there's been widespread awareness of political interference in small-scale mining in Ghana. This knowledge stems from various sources such as investigative journalism, documentaries, national audit reports, and positions taken by traditional councils. There have even been reports of farmers willing to offer their cocoa farms for mining in exchange for cash. The issue of illegal mining and its environmental impact has become a significant concern for the Ghanaian government. Despite numerous attempts to address the problem, including task forces, drone surveillance, Operation Vanguard, and nationwide bans, the problem persists. It's been challenging to distinguish between legal and illegal miners, leading to a national ban in 2017 to sort out registered and unregistered operators. The Deputy Minister of Lands and Natural Resources for instance notes that 'Government is sanitizing the extractive industry with the introduction of the community mining scheme which will pave the way for the commencement of regulated, responsible, and sustainable community mining aimed at helping to get rid of illegal mining. The scheme is being operationalized in '*galamsey'* endemic areas of the country in Western, Ashanti and Eastern Regions of Ghana. The move is also expected to create 10,300 direct jobs and 21,000 indirect jobs' (Ministers' Press Briefing, Ministry of Information, 2021) and further expected to provide 'over 1,400 small-scale concessions capable of generating approximately 500,000 direct jobs' (Ministry of Lands and Natural Resources ((MoLNR), 2022: p.10). The only country to have had a study published on community mining is Indonesia as can be seen in the work of Narendra et al., (2021) though, [mere] mentions are made of the subject by Verbrugge (2014) of Philippines and other scholars like Cuddy and Seangly (2015) and Spiegel (2016) of Cambodia. That said, little is therefore known about the subject and its dynamics within the mining interface. The subject thus become a new line of research. Ghana, one of the major mining jurisdictions in the globe has rolled out a community mining scheme in recent times but knowledge about the emerging paradigm in the Ghanaian small-scale mining sector in terms of their capacity, operations, and contribution (COC) is very opaque. Little is further known about the strengths, weaknesses, opportunities and challenges (SWOT) of Ghana's emerging Community Mining Scheme. Again, not much is known about their efforts towards inclusiveness, responsible and sustainable mining (IRS) in the quest of bringing to an end the long-standing problem of illegal mining. The schemes according to the Ministry of Lands and Natural Resources 'are intended to

Track 6:
Environmental And Social Governance Systems For Sustainable Development Of Africa

Hamenoo, S. V. Q., Baah-Ennumh, T. Y. and King, R. S. (2024). Community Mining: The Evolving Paradigm in the Ghanaian Small-Scale Mining Sector – The Case of Tokwae Community Mining Scheme in the Ashanti Region of Ghana. In: Owusu-Manu, D., Adesi, M. and Acheampong, A. (Eds) Proceedings of the 1st International Conference on Environment, Social, Governance and Sustainable Development of Africa (ICESDA-2024), 26-29 March 2024, Kwame Nkrumah University of Science and Technology (KNUST)-Kumasi, Ghana, Green Communities International, 528-556.

ICESDA 2024 PROCEEDINGS
ISSN -3057-3912 PRINT
3057-3920 ONLINE

provide livelihoods for members in the mining communities, promote sustainable and responsible mining and bring to an end the problem of illegal mining'. As a result, the paper sought to establish whether the combined capacity, operation, and contribution (COC) analysis of the Tokwae community mining scheme in a mining district of the Ashanti region of Ghana amounts to or goes beyond small-scale mining and satisfy some minimum best practices. The paper also presents a SWOT analysis of this new paradigm in the SSM sector within the Ghanaian context. In addition, the paper presents an IRS analysis of this emerging mining cohort against the backdrop of responsible and sustainable mining as embedded in the Small Scale and Community Mining operational manual, 2021. This paper thus adds to the huge deficit of knowledge in literature on the subject of community mining.

Literature

Community mining – Definitions, Concepts and Scope

Community mining, as defined by the Minerals Commission of Ghana (2021), involves the collaboration of multiple small-scale mining groups within a community. It encompasses both permanent and seasonal artisanal and small-scale mining (ASM) activities carried out by local residents who rely on mineral resources for their livelihoods. There are two main types of community mining transitions: rush-type and shock-push mining (Hruschka & Echavarría, 2011). Rush-type mining occurs when people migrate to newly discovered mining areas in pursuit of higher earnings, often leading to the formation of new communities. Shock-push mining arises from poverty, triggered by factors like job losses, conflicts, or natural disasters. It involves individuals with limited education who turn to mining as a last resort due to lack of other opportunities, perpetuating a cycle of poverty. The definition of community mining lacks clarity, leading to improper implementation of regulations and contributing to illegal mining and environmental degradation (Narendra et al., 2021). In Indonesia, community mining licenses are granted either to individual local residents, with a maximum area of five hectares, or to cooperatives whose members are local residents, with a maximum area of ten hectares. The duration of these permits is initially ten years, with the possibility of two extensions, each lasting five years (Narendra et al., 2021). Conversely, in Ghana the scope of the concession of community mining is limited to 25.2 acres for five years and renewable after a satisfactory performance during the first term (Minerals Commission of Ghana, 2021).

Community mining - The Evolving Paradigm in the Ghanaian Small-Scale Mining Interface

From the legal perspective, small-scale mining includes 'mining by any method not involving substantial expenditure by an individual or group of persons not exceeding nine in number or by a cooperative society made up of ten or more persons' (PNDC Law 218, 1989). The Mineral and Mining Act 2006 (Act 703), permits small-scale miners to mine in areas that do not exceed 25 acres of land for a period of three to four years (Hinde, 2010). The legislative has therefore birthed two streams of the small-scale mining i.e. namely legal and illegal small-scale miners. The illegal small-scale mining has come to be known as 'galamsey'. The legal small-scale miners comprised those who have acquired mining licenses from the Minerals Commission of Ghana to operate on their concessions. This mining cohort undertakes operations carried out with a valid legal permit, in which operators are entitled to their concessions and sometimes, mine within with the permission of large-scale mining companies (Aryee

Track 6:
Environmental And Social Governance Systems For Sustainable Development Of Africa

Hamenoo, S. V. Q., Baah-Ennumh, T. Y. and King, R. S. (2024). Community Mining: The Evolving Paradigm in the Ghanaian Small-Scale Mining Sector – The Case of Tokwae Community Mining Scheme in the Ashanti Region of Ghana. In: Owusu-Manu, D., Adesi, M. and Acheampong, A. (Eds) Proceedings of the 1st International Conference on Environment, Social, Governance and Sustainable Development of Africa (ICESDA-2024), 26-29 March 2024, Kwame Nkrumah University of Science and Technology (KNUST)-Kumasi, Ghana, Green Communities International, 528-556.

ICESDA 2024 PROCEEDINGS
ISSN -3057-3912 PRINT
3057-3920 ONLINE

et al. 2003; Ofori & Ofori, 2018). The illegal ones or *galamseyers* are those who engage in unlawful gold mining activities without the involvement of mining companies. They manually dig small excavations such as pits, tunnels, and sluices. It's important to note that the depth and size of these excavations are generally limited and smaller compared to those of authorized mining companies. They operate without the necessary mining license and often conduct their activities on the concessions of other companies. According to the current laws in Ghana, *galamseyers* are prohibited from mining on land that has been granted as concessions or licenses to mining companies (Amankwah & Anim-Sackey, 2003). On the other hand, legal small-scale miners are individuals who possess mining licenses obtained from the Minerals Commission of Ghana, allowing them to operate on specific concessions. Interest in SSM for gold has been on the rise in Ghana due to the increase in gold price and demand, the dwindling livelihood choices in the country coupled with the general perception that mining is lucrative than farming (Minerals Commission of Ghana, 2021). That said, the sector is confronted with many environmental problems including illegal mining, land degradation, water pollution, heavy metal contamination, all cumulatively impacting the health of people in hosting communities. In response, different governments have attempted to address these problems but with ineffective outcomes. As a result, the Community Mining Scheme (CMS) was set out to be the basket for all these problems in the sector such that community members could have the opportunity to engage in SSM under certain defined code of practice and operational standards. This is a new paradigm in the Ghanaian mining interface which is intended to limit the environmental degradation associated with small-scale miners (Minerals Commission of Ghana, 2021). As at July 2023, a total of 21 community mining schemes were commissioned in Ghana but this increased to 23 as at March 2024 due to the commissioning of two more CMS in Manso Nkwanta and Moseaso in the Amansie West District of the Ashanti region (Ministry of Lands and Natural Resources, 2023). The Schee has the potential of employing between 1000-3000 SSM-illegal miners directly and at least 2000 people indirectly.

Community Mining in Ghana – The Policy and Institutional Frameworks

The Community Mining Scheme (CMS) is a government policy introduced in 2021 to address the problem of illegal mining by promoting responsible, viable, and sustainable small-scale mining activities among local residents in mining communities. The aim is to encourage adherence to the provisions of the Minerals and Mining Acts, 2006 (Act 703). The implementation of the CMS is driven by the recognition that previous efforts to curb illegal small-scale mining, commonly known as "galamsey," have not yielded significant success. The CMS seeks to provide an alternative and more effective approach to tackling this issue. (Minerals Commission of Ghana, 2021). The objective of the Scheme is to promote meaningful involvement of local communities in small-scale mining (SSM) activities. By doing so, it aims to stimulate job creation and enhance the quality of life within the communities where mining takes place. Additionally, the Scheme seeks to enhance working conditions for miners and mitigate the environmental degradation often associated with SSM operations (Minerals Commission of Ghana, 2021).

Key Features Of The Scheme

According to the Operational Manual of Ghana's Community Mining Scheme (2021), the scheme;

Track 6:
Environmental And Social Governance Systems For Sustainable Development Of Africa

Hamenoo, S. V. Q., Baah-Ennumh, T. Y. and King, R. S. (2024). Community Mining: The Evolving Paradigm in the Ghanaian Small-Scale Mining Sector – The Case of Tokwae Community Mining Scheme in the Ashanti Region of Ghana. In: Owusu-Manu, D., Adesi, M. and Acheampong, A. (Eds) Proceedings of the 1st International Conference on Environment, Social, Governance and Sustainable Development of Africa (ICESDA-2024), 26-29 March 2024, Kwame Nkrumah University of Science and Technology (KNUST)-Kumasi, Ghana, Green Communities International, 528-556.

ICESDA 2024 PROCEEDINGS
ISSN -3057-3912 PRINT
3057-3920 ONLINE

- Must be community-based and operate as small-scale mining in line with sections 81-99 of the Minerals and Mining Act, 2006 (Act 703)
- Be governed by a Code of Practice as stated in Regulations 475 and 515 of the Minerals and Mining Regulation and shall be signed by operators of the Minerals Commission
- Can also be operated by Large Scale Mining Leases in line with the Tributer System
- Shall be supervised by a Community Mining Oversight Committee and other relevant state institutions as also proposed by Lahiri-dutt (2023).

Community Mining in other Jurisdictions

In countries such as the Philippines (Verbrugge 2014a), Indonesia (Spiegel 2012), and Cambodia (Cuddy and Seangly 2015; Spiegel 2016), there has been some level of policy backing for the issuance of community mining licenses and permits (Lahiri-dutt, 2023). In the Asia-Pacific region, Mongolia has been recognized as a leading country in the formalization of small-scale and community mining. This has been achieved through the implementation of specific measures, such as the issuance of licenses that allow individuals and communities to engage in mining activities (Purevjav 2011). In the midst of these few countries, Indonesia appears to be the only country which had had a study documented on community mining though mentions were made of other countries. In Mongolia for instance, the provision of small-scale and community mining licenses is seen as a step towards formalizing and regulating of the sector. These licenses enable small-scale miners and local communities to legally conduct mining operations within designated areas. By offering these licenses, Mongolia aims to bring informal mining activities into the formal economy. This approach has several potential benefits, including improved oversight and regulation of mining practices, increased revenue generation, and the promotion of sustainable development in the mining sector. Community mining in the Philippines has been a topic of discussion and research due to its impact on local communities and the environment. It is important to note that community mining practices can vary greatly in different regions and circumstances, and reviews or assessments of these practices can offer various perspectives. Indonesia is one of the countries endowed with many mineral and metal mining natural resources, including building material mining and easily exploited by the public starting from using simple technology to sophisticated technology (Hendrakusumah & Sukmayaningrum, 2020). Community mining has been a prominent sector, particularly in gold mining in Indonesia. It has been associated with various social and environmental challenges, such as inadequate regulations, land conflicts, unsafe working conditions, and environmental degradation. As a result, formalised community mining licence arrangements required significant paperwork, while local authorities applied extremely high surcharges for the permits. Limited to 25 hectares, community mining licensing also limit mobility and flexibility in developing new mine sites, and thus would seem more readily suitable to fixed hard-rock deposits, rather than for more mobile and ephemeral alluvial gold-mining (Lahiri-dutt, 2023). Miners therefore avoid formalization due to these reasons as similar to the case of illegal mining (*galamsey*) in Ghana. Recently, the Indonesian government has promised 1,500 community mining licences as a step towards greater formalization of the sector. However, the current permitting process for community mining areas and licences in Central Kalimantan is complex, costly

Track 6:
Environmental And Social Governance Systems For Sustainable Development Of Africa

Hamenoo, S. V. Q., Baah-Ennumh, T. Y. and King, R. S. (2024). Community Mining: The Evolving Paradigm in the Ghanaian Small-Scale Mining Sector – The Case of Tokwae Community Mining Scheme in the Ashanti Region of Ghana. In: Owusu-Manu, D., Adesi, M. and Acheampong, A. (Eds) Proceedings of the 1st International Conference on Environment, Social, Governance and Sustainable Development of Africa (ICESDA-2024), 26-29 March 2024, Kwame Nkrumah University of Science and Technology (KNUST)-Kumasi, Ghana, Green Communities International, 528-556.

ICESDA 2024 PROCEEDINGS
ISSN -3057-3912 PRINT
3057-3920 ONLINE

and poorly organized, the procedures are not adhered to and formal permits are only used by a few dozen miners. Under Indonesian Law No. 3/2020, the Minister is authorized to issue Community Mining Permits as a measure to address the widespread issue of illegal artisanal and small-scale mining. These permits are granted either to individual local residents, with a maximum area of five hectares, or to cooperatives whose members are local residents, with a maximum area of ten hectares. The duration of these permits is initially ten years, with the possibility of two extensions, each lasting five years (Narendra et al., 2021). The regulation regime of Indonesia is focused on the management of mineral and coal mining activities including guidelines for reclamation and community mining (Nugroho & Yassir, 2017). Nevertheless, the lack of a clear definition for community mining led to misinterpretation and improper implementation of these regulations. This situation, in turn, gave rise to illegal mining practices and neglected the important process of post-mining reclamation. The presence of weak legal sanctions, particularly against community miners, has resulted in numerous violations where proper reclamation measures were not carried out, resulting in significant damage to the land (Putra, Sulistijorini, & Aryanti, 2017). In Cambodia, community mining has also been a topic of interest, particularly in relation to gemstone and mineral extraction. Reviews or assessments of community mining in Cambodia might explore issues such as resource governance, legal frameworks, social dynamics, and environmental concerns. It is worth noting that the mining sector in Cambodia has undergone significant changes in recent years, and reviews may provide insights into evolving policies and practices (Lahiri-dutt, 2023).

Capacity, Operation and Contribution (COC) of Community Mining Schemes

The Scheme according to the Community Mining Operational Manual (2021) is reserved for Ghanaians only and shall be organized under corporate body arrangements, cooperatives or partnerships and sole proprietors based in the community. The group must demonstrate the capacity to invest at least a capital of GHc 100,000 and must provide basic structures and relevant amenities under the following; General Office, Clinic, Mechanical shop, other facilities and Ore processing area. Valid company registration documents, SSNIT certificate and insurance cover for staff shall be mandatory including the requisite licenses and permits from relevant authorities. Ghana's Community Mining Scheme is governed by a Code of Practice as stated in Regulations 475 and 515 of the Minerals and Mining Regulation and shall be signed by operators of the Minerals Commission, who serve as the primary implementers of the Scheme supported by a Community Mining Oversight Committee, Environmental Protection Agency, Water Resources Commission, Forestry Commission, Ghana Geological Survey Authority, Metropolitan Municipal District Chief Executives (MMDCEs), and Security Services. Community and small-scale mining have made enormous contributions to the economy of host countries worldwide by contributing significantly to national revenues and foreign exchange earnings, but pose great issues with safety and the environment that negatively affect people's quality of life (World Bank, 2013; Wilson et al., 2015; Amankwah et al., 2015; Marin et al., 2016; Hilson & McQuilken, 2014). For instance, SSM at Osiri mining village in Migori County, Kenya injects USD 1.9 million per year into the local economy. While at the Migori district level, ASM gold mining generates USD 37 million per year and at the national level USD 225 million per year. Gemstone mining in Taita

Track 6:
Environmental And Social Governance Systems For Sustainable Development Of Africa

Hamenoo, S. V. Q., Baah-Ennumh, T. Y. and King, R. S. (2024). Community Mining: The Evolving Paradigm in the Ghanaian Small-Scale Mining Sector – The Case of Tokwae Community Mining Scheme in the Ashanti Region of Ghana. In: Owusu-Manu, D., Adesi, M. and Acheampong, A. (Eds) Proceedings of the 1st International Conference on Environment, Social, Governance and Sustainable Development of Africa (ICESDA-2024), 26-29 March 2024, Kwame Nkrumah University of Science and Technology (KNUST)-Kumasi, Ghana, Green Communities International, 528-556.

ICESDA 2024 PROCEEDINGS
ISSN -3057-3912 PRINT
3057-3920 ONLINE

Taveta generates a production value of USD 120 million per year, of which roughly USD 50 million per year is spent locally. It is estimated that SSM gold and gemstone mining nationwide together generate a foreign exchange influx into the country in the range of USD 500 million per year. In Rwanda it was estimated that small-scale miners contributed approximately USD 39.5 million in the form of expenditures to the local economies in 2015. Similarly, in Uganda in one of its poorest regions, Karamoja, small scale gold mining provides 22,500 miners with an annual income that is significantly above the Gross National Income (GNI). Gold production in Karamoja is conservatively estimated at 845 kg per year, representing a London Bullion Market Association (LBMA) market value of USD 36 million. In Ghana, the growth and significance of the small-scale mining sector cannot be under-emphasized. The sector's contribution to wealth creation, employment and the economy makes it one of the nation's most important livelihood activities, employing an estimated one million people and supporting approximately 4.5 million more. It accounted for 35 per cent of Ghana's total gold production in 2014, contributing almost 1.5 million ounces of gold (McQuilken & Hilson, 2016). Besides, many SSM workings are said to be deficient in implementation of mine safety requirements, access to better mining equipment, recognition of the hazards inherent in mining as well as the safety regulations (Hilson et al., 2017). The most common methods of mining are therefore; underground mining and surface mining (Gibowicz & Kijko, 2013). The SSM work often takes place underground. Underground mining involves mining of hard rock from usually those containing metals. It places workers at risk of workplace accidents due to rock falls from roofs and side walls, lack of ventilation, entrapment, drowning, gas or dust explosions, gas and fuel fires, workers stumbling/slipping/falling and heavy manual work (Kurnia et al., 2014; Elgstrand et al., 2017; Bansah et al., 2016). Despite these security concerns, community and small-scale mining are crucial activity in developing countries, especially in regions where economic alternatives are insufficient as evidenced by the situation in China, India, Indonesia, Brazil, Peru, Papua New Guinea, Bolivia, Ecuador, Congo (DRC), Mali, and Ghana, where a sizable population is employed in the SSM sector (Hilson et al., 2014; Steckling et al., 2017). In Indonesia for instance, mining products contribute up to 17% per year of Indonesia's total export value, with coal mining contributing a value of 87.27% (Adriani et al., 2020). This is because the Indonesian coal industry is one of the world's largest coal producers and exporters, while the production of other minerals is developing more slowly (Kramadibrata, 2013; Narendra et al., 2021). Mining contributes around five percent to Indonesia's total GDP (Devi & Prayogo, 2013).

The Inclusiveness, Responsible and Sustainable (IRS) Mining of the Scheme

From the point of theory and in practice, inclusiveness has everything to do with broad involvement of certain subjects/ individuals/ samples in a process or system. Bring this conventional perspective into the subject of community mining which involves different people in its value chain, one cannot under-emphasise the identification of all or most stakeholders within and outside the community encompassing such individuals from the national, regional, district, local and the community. According Innes (2004), the 'realistic set of principles intended to identify, and facilitate agreement between, all possible stakeholders in a project' describes what is termed inclusive planning methods (Dennis, 2011, pp. 2-3; Innes, 2004). Although many governments now mandate some form of

Track 6:
Environmental And Social Governance Systems For Sustainable Development Of Africa

Hamenoo, S. V. Q., Baah-Ennumh, T. Y. and King, R. S. (2024). Community Mining: The Evolving Paradigm in the Ghanaian Small-Scale Mining Sector – The Case of Tokwae Community Mining Scheme in the Ashanti Region of Ghana. In: Owusu-Manu, D., Adesi, M. and Acheampong, A. (Eds) Proceedings of the 1st International Conference on Environment, Social, Governance and Sustainable Development of Africa (ICESDA-2024), 26-29 March 2024, Kwame Nkrumah University of Science and Technology (KNUST)-Kumasi, Ghana, Green Communities International, 528-556.

ICESDA 2024 PROCEEDINGS
ISSN -3057-3912 PRINT
3057-3920 ONLINE

consultation with local communities, there is often a lack of clear guidelines regarding the quality and depth of these processes, as well as the qualifications of the personnel responsible for facilitating communication (Weber-Fahr et al., 2001). Inclusiveness requires that individual differences are not only tolerated but also handled with recognition and reverence (Fainstein, 2005)which depends on a vision of the city rather than simply a method of arriving at prescription; (2. The concept and the practice of responsible and sustainable mining appear to be closely related. In other words, mining cannot be sustainable if it is not responsibly done in the first place. Thus, responsible mining is a precursor to sustainable mining. The concept of 'responsible mining' refers to the practices adopted by mining companies to mitigate the adverse social and environmental effects of their operations while maximizing economic benefits. This involves measures to minimize pollution, reduce waste, and ensure that local communities derive positive outcomes from the presence of the mine (Narendra et al., 2021; Encore, 2022). Responsible mining is characterized by a recognition of the negative impacts associated with mining and a commitment to addressing these impacts (Responsible Mining Foundation (RMF), 2018). Various standards have been developed to promote responsible mining practices, such as the International Council on Mining and Metals' (ICMM), the Principles of Sustainable Development, the United Nations' Sustainable Development Goals (SDGs), and the Global Reporting Initiative's (GRI) Standards. These frameworks provide guidelines and benchmarks for mining companies to follow in order to uphold responsible practices in their operations. The Australian Centre for Sustainable Mining Practices (ACSMP) (Laurence, 2011) and the Responsible Mining Foundation (RMF) have also contributed to the development of responsible mining practices and indices which all call for planning (Langefeld & Binder, 2018; Knoche et al., 2019). By combining the above institutional indices, responsible mining can therefore be achieved through the combination of these factors with other country specific or site-specific practices (Wenig et al., 2005);

» To become more responsible, companies should adopt cleaner production technologies, invest in renewable energy sources, and implement post-mining land reclamation plans (Knoche et al., 2019) to mitigate their ecological footprint (Encore, 2022). Rehabilitation of mines can contribute to the restoration and improvement of riparian areas and vegetation, ultimately leading to healthier hydrological systems (Cane et al., 2015; Knoche et al., 2019).

The concept of sustainable mining actually takes inspiration from the concept of sustainable development. Embracing the principles of sustainable development, responsible mining strives to make a positive impact, create value, and preserve opportunities for future generations, ensuring a range of possibilities without compromising their ability to meet future needs (Langefeld & Binder, 2018). Sustainable mining thus entails minimizing the adverse environmental, social, and governance effects associated with mining activities while ensuring the viability of mining for future generations (Chugh et al., 2023). Sustainable mining therefore requires planning and conscious efforts (Knoche et al., 2019). Langefeld and Binder (2018) therefore believe that mining industry has a crucial role to play in assuming sustainability in the conduct of mining. Recent studies (Chugh, Schladweiler & Skilbred, 2023; Narendra et al., 2021) also show that sustainable mining can be achieved through; Ensuring communities thrive beyond the life of mine; Restoring the land to its natural state; Combatting illegal

Track 6:
Environmental And Social Governance Systems For Sustainable Development Of Africa

Hamenoo, S. V. Q., Baah-Ennumh, T. Y. and King, R. S. (2024). Community Mining: The Evolving Paradigm in the Ghanaian Small-Scale Mining Sector – The Case of Tokwae Community Mining Scheme in the Ashanti Region of Ghana. In: Owusu-Manu, D., Adesi, M. and Acheampong, A. (Eds) Proceedings of the 1st International Conference on Environment, Social, Governance and Sustainable Development of Africa (ICESDA-2024), 26-29 March 2024, Kwame Nkrumah University of Science and Technology (KNUST)-Kumasi, Ghana, Green Communities International, 528-556.

ICESDA 2024 PROCEEDINGS
ISSN -3057-3912 PRINT
3057-3920 ONLINE

mining and its impact and communities and the environment; Lowering CO2 emissions by transitioning to renewable energy; Water conservation; and Reusing mine waste for other purposes (Chugh et al., 2023). By integrating these elements, the mining sector can contribute to a more sustainable and responsible approach that safeguards the welfare of communities and the environment (Woźniak, & Pactwa, 2018; Chugh et al., 2023).

SWOT of the Scheme

SWOT Analysis is a widely used and straightforward framework for assessing the strengths, weaknesses, opportunities, and threats associated with a specific project, business, firm, or industry (Teece, 2018). SWOT Analysis is a strategic planning framework utilized to evaluate an organization, plan, project, or business activity (Teece, 2018; Benzaghta et al., 2021). It is a 'simple but powerful tool for sizing up an organization's resource capabilities and deficiencies, its market opportunities, and the external threats to its future' (Thompson et al., 2007: 97; Afifah & Sopiany, 2017). It serves as a valuable tool for conducting a situation analysis and helps managers identify both internal and external factors affecting the organization (Gürel, 2017). The internal dimension of SWOT Analysis focuses on the strengths and weaknesses of the organization, while the external dimension encompasses the environmental factors, commonly known as opportunities and threats (Rozmi et al., 2018; Wu, 2020).

By employing SWOT analysis, organizations can identify the factors that contribute to achieving their objectives and recognize the challenges and barriers that need to be addressed or minimized to attain desired outcomes (Singh, 2010; Ommani, 2011). Nevertheless, within the context of this study, SWOT analysis will be employed in assessing the strengths, weaknesses, opportunities and threats of the community mining scheme.Top of Form

Bottom of Form

Theoretical foundation of the study

The theoretical foundation of the present study is hinged on community development theories. Community development is a collaborative process in which agencies assist community members in identifying and addressing issues that hold significance to them. It aims to empower individuals within the community, fostering a sense of strength and interconnectedness, thereby building more resilient and closely-knit communities (Australian Institute of Family Studies, 2017). The concept of community development inherently involves a deliberate and purposeful process of bringing about change. The ultimate goal is to enable communities to develop economic, ecological, and social independence and capabilities (Meirinawati, Prabawati & Pradana, 2018; Supriyanto & Subejo, 2004). These understandings in line with community mining thus leads us to the Asset Based Community Development (ABCD) theory which is an approach to community development that focuses on identifying and mobilizing the existing strengths and assets within a community. It emphasizes recognizing and leveraging the skills, knowledge, capacities, and resources that individuals and community organizations possess (McKnight, 2017; Foot & Hopkins, 2009). Based on these expositions, the Community-Based Development (CBD) Theory and Participatory Planning (PP) Theory have been adopted for the study. Community-based development theory has gained significant attention in

Track 6:
Environmental And Social Governance Systems For Sustainable Development Of Africa

Hamenoo, S. V. Q., Baah-Ennumh, T. Y. and King, R. S. (2024). Community Mining: The Evolving Paradigm in the Ghanaian Small-Scale Mining Sector – The Case of Tokwae Community Mining Scheme in the Ashanti Region of Ghana. In: Owusu-Manu, D., Adesi, M. and Acheampong, A. (Eds) Proceedings of the 1st International Conference on Environment, Social, Governance and Sustainable Development of Africa (ICESDA-2024), 26-29 March 2024, Kwame Nkrumah University of Science and Technology (KNUST)-Kumasi, Ghana, Green Communities International, 528-556.

ICESDA 2024 PROCEEDINGS
ISSN -3057-3912 PRINT
3057-3920 ONLINE

Hamenoo, S. V. Q., Baah-Ennumh, T. Y. and King, R. S. (2024). Community Mining: The Evolving Paradigm in the Ghanaian Small-Scale Mining Sector – The Case of Tokwae Community Mining Scheme in the Ashanti Region of Ghana. In: Owusu-Manu, D., Adesi, M. and Acheampong, A. (Eds) Proceedings of the 1st International Conference on Environment, Social, Governance and Sustainable Development of Africa (ICESDA-2024), 26-29 March 2024, Kwame Nkrumah University of Science and Technology (KNUST)-Kumasi, Ghana, Green Communities International, 528-556.

various fields, including the mining sector. One fundamental aspect of community-based development theory is the recognition of the importance of community participation in decision-making processes. Very close to the CBD theory is the PP theory. Participatory planning theory is a widely recognized approach to development that involves the active and comprehensive engagement of development agents in making decisions about development processes or projects that impact people's living conditions (Smith, 1973; Maričić, Cvetinović & Jean-Claude, 2018). It provides a conceptual framework for addressing complex planning scenarios involving multiple stakeholders, with the goal of finding mutually beneficial solutions (Yang, Yang, & Ma, 2022). **Top of Form .**Linking the theories to the present study, it can be seen that CBD theory emphasizes the importance of involving local communities in decision-making processes and empowering them to actively participate in community mining activities. In addition, the link between participatory planning theory and community mining lies in their shared principles of community engagement, empowerment, and sustainable development. Participatory planning theory advocates for the inclusion of community members in decision-making processes, enabling them to have a voice in shaping development initiatives. Similarly, in community mining, the involvement of local communities is crucial for achieving sustainable outcomes and addressing social, economic, and environmental concerns. This is because collaborative planning with affected stakeholders can help companies to ensure sustainable futures and positive legacies not only when their mining operations cease (Chugh et al., 2023) but when it is even ongoing (Cane et al., 2015; RMF, 2018).

Conceptual Framework of the study

The conceptual foundation (CF) of the present study is presented in Figure 1. It is based on the huge deficit of knowledge in literature on community mining culminating into various knowledge gaps on the subject. These knowledge gaps are premised on three areas of the emerging mining paradigm in Ghana focusing on the Tokwae CMS within the Ashanti region. These include the capacity, operation, and contribution (COC) dimension of the CM, the Inclusiveness, Responsible and Sustainable (IRS) of CM and the Strengths, Weaknesses, Opportunities and Threats (SWOT) of CM. The framework sought to establish whether the combined capacity, operation, and contribution (COC) of the Tokwae community mining scheme in a mining district of the Ashanti region of Ghana amounts to or goes beyond small-scale mining and satisfy some minimum best practices. The capacity dimension sought to unravel the human resource, technical, financial and natural resource (concession) options of the Tokwae CMS. How these capacities inform the operation of the Scheme in Tokwae becomes important for this study. The type of mining, License regime, Administration, Concessions, Technicians, Safety & Health care provision, Food supply for workers, working durations and days, and Production thus constitute the operational aspect of the Scheme that are empirically worth investigating. What the CF further sought to unravel is the contribution of the Tokwae CMS towards economic development in relation to Job creation, Household income, Job security, and Job Satisfaction. The contribution of the Scheme to social development in terms of Reduction in social vices, Reduction in hunger, Reduction in child labour and Community Development become important. What the CF also sought to bring to light in this new line of research and knowledge is the extent of the Inclusiveness, Responsibility, and

ICESDA 2024 PROCEEDINGS
ISSN -3057-3912 PRINT
3057-3920 ONLINE

Sustainability (IRS) of the Tokwae CMS. In order for the Scheme to be Inclusive, it ought to have certain level of reception and consideration for Gender, Age, Political affiliation Community participation, Engagement of people outside the community, Involvement of state/government institutions, Involvement of community leaders, and Benefit sharing among relevant stakeholders. What is further paramount in this present research is the conduct of mining operation by the Scheme within the ambit of responsibleness and Sustainability. As early defined and expatiated in literature, responsible mining involves the awareness of the negative impacts of mining operation and the commitment towards bringing under a certain minimum control such potential impacts in the course of mining operations. On this score, the following parameters were investigated; Mercury pollution, Underground water acidity, Surface water contamination, Waste water discharge, Destruction to farms, Destruction to water bodies, Land degradation, Mining confined to only concession, Provision of personal protective equipment, and Safety of the miners. How the Tokwae CMS honours sustainable mining practices thus constitute the empirical evidence upon which such conclusions are drawn. This dimension of the conceptualization is founded on the tenets that for the Scheme to be operationally sustainable, it ought to have conscious consideration for the following parameters; Land reclamation, Water reclamation, Waste water discharge, Water acidity, Destruction to farms, and Surface water destruction. That the presence of these parameters, where applicable thus renders the Scheme operational sustainable within the boundary of sustainable mining literature. What is further significant in the CF is its position of the SWOT assessment of the Scheme, which is measured for the following parameters and indices; **Strength** (Employment and Livelihood, Better income, better working condition); **Weakness** (Partisan politics and exclusion); Opportunities (Could limit illegal mining, National Acceptance), and **Threats** (Surface mining, Land degradations, Change in government & policy). These pieces of empirical evidence cumulatively present the conceptual position of this study towards the contribution to knowledge in this emerging line of research.

Track 6:
Environmental And Social Governance Systems For Sustainable Development Of Africa

Hamenoo, S. V. Q., Baah-Ennumh, T. Y. and King, R. S. (2024). Community Mining: The Evolving Paradigm in the Ghanaian Small-Scale Mining Sector – The Case of Tokwae Community Mining Scheme in the Ashanti Region of Ghana. In: Owusu-Manu, D., Adesi, M. and Acheampong, A. (Eds) Proceedings of the 1st International Conference on Environment, Social, Governance and Sustainable Development of Africa (ICESDA-2024), 26-29 March 2024, Kwame Nkrumah University of Science and Technology (KNUST)-Kumasi, Ghana, Green Communities International, 528-556.

ICESDA 2024 PROCEEDINGS
ISSN -3057-3912 PRINT
3057-3920 ONLINE

Track 6:
Environmental And Social Governance Systems For Sustainable Development Of Africa

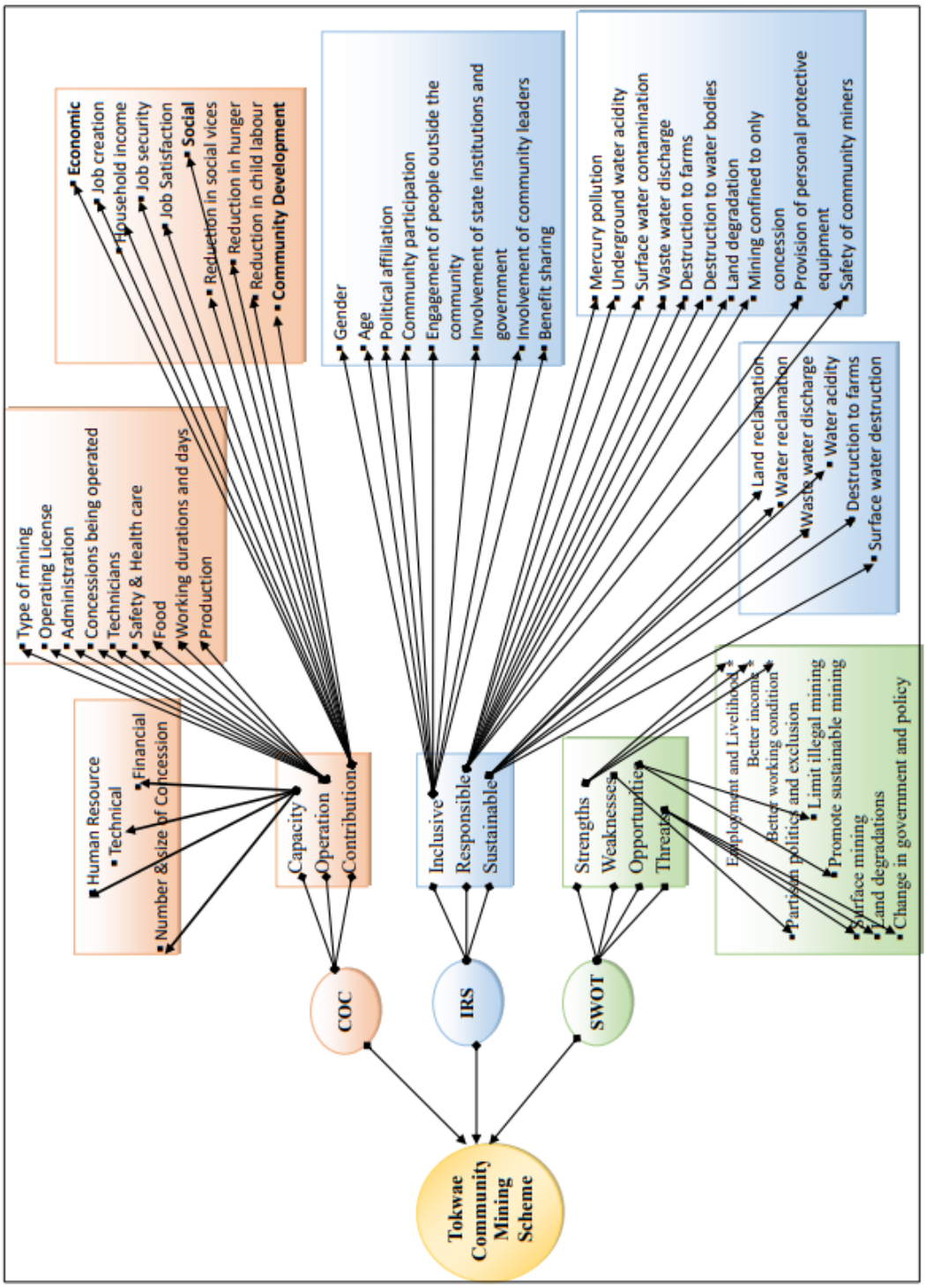

Figure 1: The Conceptualization of the Study

Hamenoo, S. V. Q., Baah-Ennumh, T. Y. and King, R. S. (2024). Community Mining: The Evolving Paradigm in the Ghanaian Small-Scale Mining Sector – The Case of Tokwae Community Mining Scheme in the Ashanti Region of Ghana. In: Owusu-Manu, D., Adesi, M. and Acheampong, A. (Eds) Proceedings of the 1st International Conference on Environment, Social, Governance and Sustainable Development of Africa (ICESDA-2024), 26-29 March 2024, Kwame Nkrumah University of Science and Technology (KNUST)-Kumasi, Ghana, Green Communities International, 528-556.

ICESDA 2024 **PROCEEDINGS**
ISSN -3057-3912 PRINT
3057-3920 ONLINE

LEGEND: All Arrows and lines are direct connections showing linkages between constructs, proxies and the variables

Source: Authors' Construct, 2024

Study Site Description

The study was conducted in the Asante Akyim South District (Figure 2). The district is situated in the eastern part of the region and is the 'gateway to Ashanti region' from the Eastern and Greater Accra Regions. It covers a total surface area of about 1,153.3 square which form about five percent (5%) of the total area of the Ashanti Region, and 0.5 percent of the total area of the country (Annual Performance Report, 2012). It shares boundaries with the Asante Akim Central Municipal in the North, Asante Akim North District in the Northwest and the Bosome-Freho District in the southwest, all in Ashanti Region. Its neighbours on the eastern border that coincides with the boundary between the Ashanti and Eastern Regions. The district is predominantly made up of farmers in both food and cash crops mainly, cocoa. The land is suitable for food and cash crops like maize, cassava, plantain, cocoa, coffee, oil palm and vegetables. Economic deposits of gold and diamonds have been reported at Banka, Tokwai, Ofoase, Morso, Kurofa, Asankare and the Pra River basin. These mineral deposits are not exploited on large scale however there is the existence of pockets of illegal mining operations in the district. Besides, granite rocks extend from Yawkwei through Juaso, Obogu, and Banso. Currently, two companies are extracting granite chippings for the construction of roads throughout the country (Ghana Statistical Service, 2014).

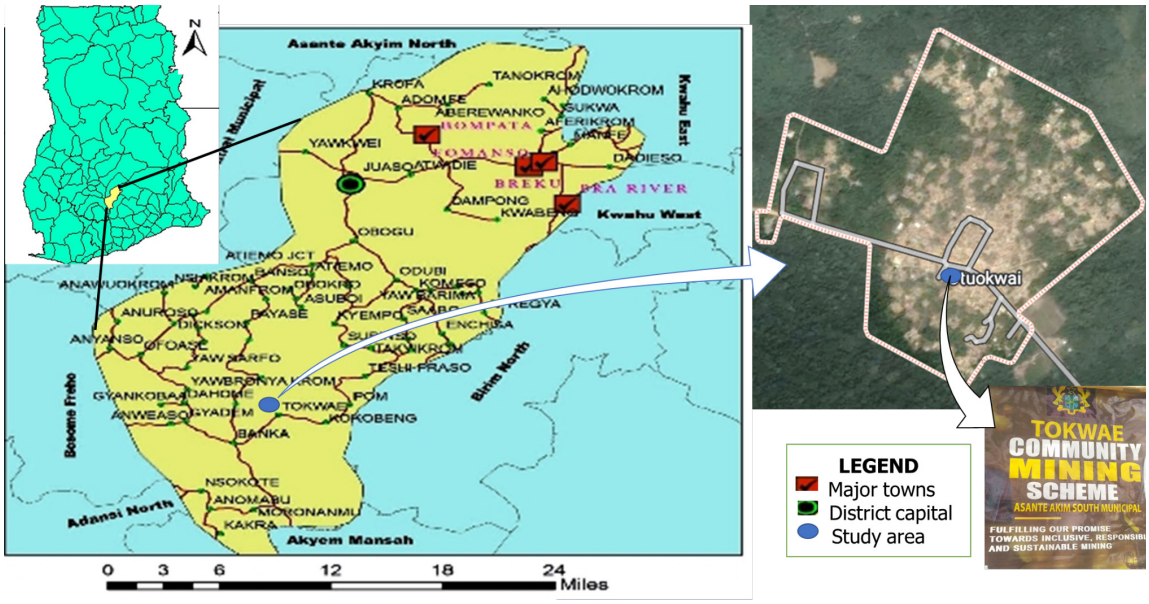

Figure 2: Map of Asante Akyim North showing study site

Source: Authors' Construct, 2024

Track 6:
Environmental And Social Governance Systems For Sustainable Development Of Africa

Hamenoo, S. V. Q., Baah-Ennumh, T. Y. and King, R. S. (2024). Community Mining: The Evolving Paradigm in the Ghanaian Small-Scale Mining Sector – The Case of Tokwae Community Mining Scheme in the Ashanti Region of Ghana. In: Owusu-Manu, D., Adesi, M. and Acheampong, A. (Eds) Proceedings of the 1st International Conference on Environment, Social, Governance and Sustainable Development of Africa (ICESDA-2024), 26-29 March 2024, Kwame Nkrumah University of Science and Technology (KNUST)-Kumasi, Ghana, Green Communities International, 528-556.

ICESDA 2024 PROCEEDINGS
ISSN -3057-3912 PRINT
3057-3920 ONLINE

Methodology

Design

The study made use of the case study research approach and the cross-sectional research design in studying in detail the Tokwae community mining scheme. The case study approach was adopted due to its flexibility with multiple data collection methods, in-depth data exploration and analysis techniques (Creswell, 2007; Bhattacherjee, 2012), empirical nature in investigating a contemporary phenomenon within real-life context (Yin, 2006) thereby providing researchers with opportunities to triangulate data in order to strengthen the research findings and conclusions. As a result, the Tokwae community mining scheme was selected for the present study to understand the COC, IRS and SWOT dimensions of the emerging paradigm in the SSM sector. cross-sectional design was utilized primarily because data for the study were collected from a

Methods

Participants

Given the case study nature of this research, participants that were available on site were interviewed. At the time of data collection, 48 permanent workers and two supervisors of the Tokwae community mining scheme (TCMS) on-site were interviewed as also found in previous studies (Ritchie et al. 2003; Yin, 2006; and Kruger et al. 2008), where between 30–50 respondents were seen to have been ideal for an in-depth analysis or case studies. Five focus groups of ten members (with one group totalling 8 members) were held on the COC, IRS and SWOT aspects of the research. Each interview session lasted about an hour. The two supervisors of the workers were also isolated and interviewed on all aspects of the research for triangulation purposes. Creswell (1998) have also okayed 25 participants to be adequate for phenological studies in arriving at reliable conclusions. The present study therefore purposively selected 50 participants who were all males and permanent staff of the TCMS based on their provision of "relevant and valuable data" (Kelly, 2010: 317). More specifically, expert sampling was operationalized in selecting the 50 participants who were experts with different skills (Patton, 2002; Palinkas et al., 2015) in the mining sector for instance.

Materials

Participatory research tools such as key informant interviews (KIIs), Focus Group Discussion (FDG) and open-ended questions were used to solicit data from the respondents.

Analysis

The study made use of content analysis (Hsieh & Shannon, 2005), recursive abstraction (Polkinghorne & Taylor, 2022), deductive reasoning (Johnson-Laird, 2010), and triangulation (Honorene, 2017) of information to arrive at a solid conclusion. The qualitative data gathered was analyzed using the Dey's three-tier analytical approach of transcription, categorization and interconnection (Dey 1993). Important quotes and themes were developed from the transcripts as evidences to buttress points made by beneficiaries. COC, IRS and SWOT analyses were also performed to understand the CMS within the Tokwae community as illustrated in Fig 1 and detailed in Table 1.

Track 6:
Environmental And Social Governance Systems For Sustainable Development Of Africa

Hamenoo, S. V. Q., Baah-Ennumh, T. Y. and King, R. S. (2024). Community Mining: The Evolving Paradigm in the Ghanaian Small-Scale Mining Sector – The Case of Tokwae Community Mining Scheme in the Ashanti Region of Ghana. In: Owusu-Manu, D., Adesi, M. and Acheampong, A. (Eds) Proceedings of the 1st International Conference on Environment, Social, Governance and Sustainable Development of Africa (ICESDA-2024), 26-29 March 2024, Kwame Nkrumah University of Science and Technology (KNUST)-Kumasi, Ghana, Green Communities International, 528-556.

ICESDA 2024 PROCEEDINGS
ISSN -3057-3912 PRINT
3057-3920 ONLINE

COC Measurement and Analysis

Within the COC analysis, four indices/ proxies were developed to measure the **Capacity** of the CMS (i.e. directors, managers, permanent staff and temporal staff) whilst nine indices and proxies were developed to measure the **Operation** of the CMS (i.e. Number of CM schemes in the district, License regime, Administration, Type of mining, Concessions, Technicians, Safety &Health care, Food, and Working days). Seven indices and proxies were also developed to measure the **Contribution** of the CMS namely, Job creation, Household income, Job security, Job Satisfaction, Graded Road, Reduction in Social vices, Reduction in hunger.

IRS Measurement and Analysis

In addition, five indices and proxies were developed to measure the **Inclusiveness** variable namely; Gender, Age, Political affiliation, Community participation, and Engagement of people outside the community. This was followed by eight indices and proxies used to measure the **Responsible mining** variable namely; Mercury pollution, Underground water acidity, Surface water contamination, Waste water discharge, Destruction to farms, Destruction to water bodies, Limited land degradation, and Mining Confined to concession. Besides, six indices and proxies were developed to measure the **Sustainable mining** variable of the CMS namely; Land reclamation, Water reclamation, Waste water discharge, Water acidity, Destruction to farms, and Destruction to surface water.

SWOT Measurement and Analysis

SWOT (Strengths, Weaknesses, Opportunities and Threats) measurement was done during and after the field interviews and data collections. The SWOT analysis was done using recursive abstraction from the data collected and field notes.

Table 1: Parameters, Proxies and Measurement

COC INDICES/ PROXIES			
No.	**Capacity**	**Operation**	**Contribution**
1	Directors	Number of CM schemes in the district	Job creation
2	Managers	License regime	Household income
3	Permanent staff	Administration	Job security
4	Casual staff	Type of mining	Job Satisfaction
5		Concessions	Graded road
6		Technicians	Social vices
7		Safety &Health care	Reduction in hunger
8		Food	
9		Working days	
IRS MINING INDICES/ PROXIES			

Track 6:
Environmental And Social Governance Systems For Sustainable Development Of Africa

Hamenoo, S. V. Q., Baah-Ennumh, T. Y. and King, R. S. (2024). Community Mining: The Evolving Paradigm in the Ghanaian Small-Scale Mining Sector – The Case of Tokwae Community Mining Scheme in the Ashanti Region of Ghana. In: Owusu-Manu, D., Adesi, M. and Acheampong, A. (Eds) Proceedings of the 1st International Conference on Environment, Social, Governance and Sustainable Development of Africa (ICESDA-2024), 26-29 March 2024, Kwame Nkrumah University of Science and Technology (KNUST)-Kumasi, Ghana, Green Communities International, 528-556.

ICESDA 2024 PROCEEDINGS
ISSN -3057-3912 PRINT
3057-3920 ONLINE

No.	Inclusiveness	Responsible mining	Sustainable Mining
1	Gender	Mercury pollution	Land reclamation
2	Age	Underground water acidity	Water reclamation
3	Political affiliation	Surface water contamination	Waste water discharge
4	Community participation	Waste water discharge	Water acidity
5	Engagement of people outside the community	Destruction to farms	Destruction to farms
6		Destruction to water bodies	Destruction to surface water
7		Limited land degradation	
8		Mining Confined to concession	

SWOT INDICES/ PROXIES				
No.	**Strengths**	**Weaknesses**	**Opportunities**	**Threats**
	▪ Able to absorb several hundreds of illegal SSM miners at the community level.	▪ The scheme is being politicized. ▪ Lack of land reclamation though embedded in their operational manual	▪ Has the potential of reducing the spreading effect of SSM illegal mining ▪ Has the potential of reducing environmental destructions, deforestations, farm losses, et al.,	▪ Lack of access to land for concession. ▪ Land litigation in some communities. ▪ Rejection of the scheme in some communities

Source: Authors' Construct, 2024

Results

The COC Analysis of Tokwai Community Mining Scheme

Capacity

» Human resource

The Scheme has 50 permanent staff (all men), and 2000 (majority being men) temporal workers during peak explorations.

Track 6:
Environmental And Social Governance Systems For Sustainable Development Of Africa

Hamenoo, S. V. Q., Baah-Ennumh, T. Y. and King, R. S. (2024). Community Mining: The Evolving Paradigm in the Ghanaian Small-Scale Mining Sector – The Case of Tokwae Community Mining Scheme in the Ashanti Region of Ghana. In: Owusu-Manu, D., Adesi, M. and Acheampong, A. (Eds) Proceedings of the 1st International Conference on Environment, Social, Governance and Sustainable Development of Africa (ICESDA-2024), 26-29 March 2024, Kwame Nkrumah University of Science and Technology (KNUST)-Kumasi, Ghana, Green Communities International, 528-556.

ICESDA 2024 **PROCEEDINGS**
ISSN -3057-3912 PRINT
3057-3920 ONLINE

» Technical

The scheme has one Director, one Deputy Director, two Supervisors, a Public Relations Officer, Engineers in charge of Mining, Electricals, and Maintenance. The scheme has a clinic for free treatment for all workers. It has a rest room for staff, kitchen where two chefs cook for all the permanent staff daily. The food is sent to the site by the Chef when ready. The scheme has extended a step-down electricity from the mains to the yard and to the main site for their operations. Two moveable mercury-free plants are available in addition to the one moveable Compressor for drilling holes for blasting purposes. Plates 1 and 2 depict the mercury free processing machines/plants used for mining operations at TCMS and the buildings consisting of workers' clinic, kitchen and rest rooms in an open yard for the Scheme. /

Plate 1: Mercury free rock processing plant

Plate 2: Clinic, kitchen, office yard

» Financial

The permanent staff are on payment plans such that at least GHc 3000 is what one receives at minimum. That minimum amount worked out by the number of permanent staff alone amounts to GHc 150,000 per month which is equivalent to USD 1154 per month. This amount plus the operational expenses on food, health care, utilities, fuel and others, point to the financial capacity of the Community Mining Schemes – in this case, the Tokwai CMS.

» Concession and regulatory compliance

The Scheme has two concessions each totalling 25 acres, put together, amounting to 50 acres. This however appears to be in contravention with the concession benchmark value set out in the Operational Manual of the Scheme. That said, prospecting works are ongoing on these concessions including blasting activities.

Operations

Table 2: Operational parameters of the Tokwai CMS

Indices/ proxies	Results
Number of CM schemes in the district	One, Tokwai
Type of mining for the Scheme	Underground with prospecting for surface explorations subject to full surface operations based on prospecting outcomes.

Track 6:
Environmental And Social Governance Systems For Sustainable Development Of Africa

Hamenoo, S. V. Q., Baah-Ennumh, T. Y. and King, R. S. (2024). Community Mining: The Evolving Paradigm in the Ghanaian Small-Scale Mining Sector – The Case of Tokwae Community Mining Scheme in the Ashanti Region of Ghana. In: Owusu-Manu, D., Adesi, M. and Acheampong, A. (Eds) Proceedings of the 1st International Conference on Environment, Social, Governance and Sustainable Development of Africa (ICESDA-2024), 26-29 March 2024, Kwame Nkrumah University of Science and Technology (KNUST)-Kumasi, Ghana, Green Communities International, 528-556.

ICESDA 2024 PROCEEDINGS
ISSN -3057-3912 PRINT
3057-3920 ONLINE

Operational License	Prospecting in wait for main mining license before end of 2023
Administration and structure	Government, State institutions (FC, LC, EPA, MC, WRC), Directors, Supervisors, Public Relations Officers (PROs)
Concessions	Two concessions totaling 50 acres, each being 25 acres
Technicians	Maintenance, Electrical, Mining, Explosives, Blasters
Safety & Health care	Working gears (boots, head lamps, electricity, ventilators, water pumps, and free clinic
Food	Two male Chefs who cook for the permanent workers daily

Source: Fieldwork, August 2023

Plate 3: One of the underground mining pits

Plate 4: A section of the permanent staff at the site

Source: Fieldwork, 2023

Hamenoo, S. V. Q., Baah-Ennumh, T. Y. and King, R. S. (2024). Community Mining: The Evolving Paradigm in the Ghanaian Small-Scale Mining Sector – The Case of Tokwae Community Mining Scheme in the Ashanti Region of Ghana. In: Owusu-Manu, D., Adesi, M. and Acheampong, A. (Eds) Proceedings of the 1st International Conference on Environment, Social, Governance and Sustainable Development of Africa (ICESDA-2024), 26-29 March 2024, Kwame Nkrumah University of Science and Technology (KNUST)-Kumasi, Ghana, Green Communities International, 528-556.

ICESDA 2024 PROCEEDINGS
ISSN -3057-3912 PRINT
3057-3920 ONLINE

Contributions

Table 3: Contribution parameters of the Tokwai CMS

Proxies	Results	
Economic	Job creation	There are a total of 50 permanent staff and about 2000 temporal workers of the Scheme. This amount to job creation for the youth in and around Tokwai community
	Household income	The job creation thus translates into access to household income for the workers
	Job security	There seem to be production prospects of the Tokwai CMS which thus amounts to job security
	Job Satisfaction	All the respondents were satisfied with their employment at the TCMS.
	Local economy Development	The overall effect on the community is seen in terms of developing housing infrastructure and improved housing conditions, availability of food, and children of school going age going to school.
Social	Reduction in social vices	Reduction in community vices in the form of theft, and gambling have been mentioned.
	Reduction in hunger	Hunger at the household level used to be a common phenomenon at the minor cocoa season but has been reduced due to the TCMS
	Reduction in child labour	Previously, children are allowed to take part in *galamsey* and artisanal mining but community mining scheme excludes children

Source: Fieldwork, August 2023

The IRS Analysis of Tokwai Community Mining Scheme

Table 4: Inclusiveness parameters of the Tokwai CMS

Proxies	Inclusiveness
Gender	All participants were men. The Scheme excludes women's engagement.
Age	Age bracket of workers fall between 20-50 years. Individuals below this range (teenagers and minors) and above (adults or elderly) are excluded.
Political affiliation	Members of other political parties are part of the scheme.

Hamenoo, S. V. Q., Baah-Ennumh, T. Y. and King, R. S. (2024). Community Mining: The Evolving Paradigm in the Ghanaian Small-Scale Mining Sector – The Case of Tokwae Community Mining Scheme in the Ashanti Region of Ghana. In: Owusu-Manu, D., Adesi, M. and Acheampong, A. (Eds) Proceedings of the 1st International Conference on Environment, Social, Governance and Sustainable Development of Africa (ICESDA-2024), 26-29 March 2024, Kwame Nkrumah University of Science and Technology (KNUST)-Kumasi, Ghana, Green Communities International, 528-556.

ICESDA 2024 PROCEEDINGS
ISSN -3057-3912 PRINT
3057-3920 ONLINE

Community participation and recognition of indigenous rights	Community participation is above average as majority of the temporal workers are indigenes of Tokwai.
Involvement of community leaders	Community leaders were involved at the initial stages of the launching of the Scheme at Tokwai during community consultation.
Engagement of people outside the community	Most the of the permanent staff were from other communities outside Tokwai.
Involvement of state institutions	The following government agencies are deeply involved in the activities of the Scheme; LC, FC, WRC, MC and EPA
Indices/ proxies	**Responsible Mining**
Mercury pollution	Not seen due to the use of mercury free plants
Surface water contamination	Negligible
Waste water discharge	Discharged into cocoa farms on site
Destruction to farms	Nil
Destruction to water bodies	Nil
Land degradation	Negligible
Mining confined to only concession	Yes. No incidence of haphazard mining as is the case in *galamsey*
Provision of personal protective equipment	Yes. Head lamps, boots, tools, etc., are provided for the miners
Safety of community miners	This is taken into consideration and aided by the provision of clinic for the workers.
Indices/ proxies	**Sustainable Mining**
Land reclamation	Nil
Waste water discharge	Pumped from the underground pit and discharged into farms nearby
Destruction to farms	Nil
Destruction to surface water	Nil

Source: Fieldwork, August 2023

Track 6:
Environmental And Social Governance Systems For Sustainable Development Of Africa

Hamenoo, S. V. Q., Baah-Ennumh, T. Y. and King, R. S. (2024). Community Mining: The Evolving Paradigm in the Ghanaian Small-Scale Mining Sector – The Case of Tokwae Community Mining Scheme in the Ashanti Region of Ghana. In: Owusu-Manu, D., Adesi, M. and Acheampong, A. (Eds) Proceedings of the 1st International Conference on Environment, Social, Governance and Sustainable Development of Africa (ICESDA-2024), 26-29 March 2024, Kwame Nkrumah University of Science and Technology (KNUST)-Kumasi, Ghana, Green Communities International, 528-556.

ICESDA 2024 PROCEEDINGS
ISSN -3057-3912 PRINT
3057-3920 ONLINE

SWOT Analysis of Tokwai Community Mining Scheme

Table 5: SWOT analysis of the scheme

SWOT Results				
	Strengths	Weaknesses	Opportunities	Threats
1	Independent operational manual and Administration of the Scheme towards smooth implementation	Partisan politics	Could limit SSM illegal mining by absorbing large numbers of illegal miners	Community agitations and rejection of the scheme in certain areas over environmental destruction concerns.
2	Job creation for the youth and able to absorb large labour force and illegal miners	Conflicts with existing mining concessions for mining companies	Could offer solutions for responsible in the SSM sector	The Scheme could face dissolution due to change in national government
3	Household Income for the youth	Lack of available mining lands	Could offer solutions for sustainable SSM	Regulatory conflicts with Minerals Commission due to political interference
4	Combined Technicians	Lack of sustainability plans	Could have national acceptance if best practices are followed	Could face agitation from land owners and custodians on royalty payments.
5	Better Safety & working conditions	Lack of post-mining land reclamation plans	Technological Advancements	Could be seen as another form of illegal mining if best mining practices are compromised
6	Provision of mercury free plants		Could serve as a road map and a country-level example for handling illegal mining	Could trespass into forest reserves and restricted lands given political backing
7	Potential to absorb large number of SSM illegal mining cohorts.		Government support and replication in other communities	
8	No pollution to water bodies and destruction of farms		Could limit land degradation.	
9	No haphazard mining approach i.e. mining is controlled and restricted		Could have positive influence on the SDGs	

Track 6:
Environmental And Social Governance Systems For Sustainable Development Of Africa

Hamenoo, S. V. Q., Baah-Ennumh, T. Y. and King, R. S. (2024). Community Mining: The Evolving Paradigm in the Ghanaian Small-Scale Mining Sector – The Case of Tokwae Community Mining Scheme in the Ashanti Region of Ghana. In: Owusu-Manu, D., Adesi, M. and Acheampong, A. (Eds) Proceedings of the 1st International Conference on Environment, Social, Governance and Sustainable Development of Africa (ICESDA-2024), 26-29 March 2024, Kwame Nkrumah University of Science and Technology (KNUST)-Kumasi, Ghana, Green Communities International, 528-556.

ICESDA 2024 PROCEEDINGS
ISSN -3057-3912 PRINT
3057-3920 ONLINE

10	Supports responsible mining		Could limit the mercury pollution in the environment due to the use of mercury-free plants	
11	Promotes sustainable mining and environmental sustainability			

Source: Fieldwork, August 2023

Discussion

The Community Mining Scheme has demonstrated the capacity of employment creation for both men and women within or near mining communities. One major capacity of the Scheme is its ability to engage a few thousands of SSM-illegal miners and offer them better working conditions with improved technologies. These technologies thus limit the health impacts on the workers and the environment. He organised nature of the Scheme offers permanent workers' salaries and regular income. The Scheme has been designed to operate with an industrial set up so as to maximize the work output of workers. This can be seen in terms of the services of Chefs or cooks provided to take care of the meals of the workers. Provision of mining clinics and first aids tool kits to manage accidents and injuries at sites thus makes the operation of the Scheme unique. Trained mining technicians such as welders, mechanics, and electricians for instance, thus make the scheme operationally attractable to SSM-illegal miners and the unemployed youths at the community levels. This therefore explains the large numbers of the illegal miners on the Scheme. What is further promising about the operation of the Scheme is its ability to send electricity from the national grid to the various sites as to facilitate the operations. This is as a result of government support to make the Scheme succeed. Plate 3 and 4 show the use of electricity at one of the community mining sites being used to power the water pumps and charge the cell phones of the workers. These facilities and benefits are not possible with the SSM illegal mining as some of the miners have indicated as follows;

"Under the community mining scheme, we are assured of regular income, free medical care, feeding, no buying of fuels, and so on. We are not under pressure and do not fear the police who previously chase us for illegal mining and cease our excavators and machines. There is nothing like taskforces chasing community miners and so it is far better than working as an illegal miner.." [FGD, SSM illegal miners, August 2023] The major contributions of the community mining apart from job provision for the youth household income. If one community scheme could employ more than 2000 people, then the replication of the scheme in other mining communities has implication for SDGs. For instance, the haphazard nature typical of illegal mining that has been ranked as the major contributor land degradation, environmental degradation, water pollution, and farms destruction, will thus be reduced as mining is now confined under the Scheme. This will therefore limit the effect on poverty (SGD 1), hunger (SDG 2), good health (SDG 3), clean water and sanitation (SDG 6), good jobs and economic growth (SDG 8), and Life on land (SDG 15). Job security and job satisfaction for workers cannot be

Hamenoo, S. V. Q., Baah-Ennumh, T. Y. and King, R. S. (2024). Community Mining: The Evolving Paradigm in the Ghanaian Small-Scale Mining Sector – The Case of Tokwae Community Mining Scheme in the Ashanti Region of Ghana. In: Owusu-Manu, D., Adesi, M. and Acheampong, A. (Eds) Proceedings of the 1st International Conference on Environment, Social, Governance and Sustainable Development of Africa (ICESDA-2024), 26-29 March 2024, Kwame Nkrumah University of Science and Technology (KNUST)-Kumasi, Ghana, Green Communities International, 528-556.

ICESDA 2024 PROCEEDINGS
ISSN -3057-3912 PRINT
3057-3920 ONLINE

underemphasized. These have therefore led to the reduction in social vices the community levels. The Scheme is gender inclusive though men dominate the scheme as conventional in the mining sector. Political diversity is one inclusive aspect of the scheme that goes beyond the polarized partisan nature of doing business with the government in power. Community participation and engagement of individuals outside of the communities on the scheme thus makes it inclusive. That said, no disabled persons have been enrolled on the scheme. The Scheme's capacity to comply with regulations and some best practices were observed in their discharge of waste water, mercury usage, and safety regulations. There was no evidence of destruction to surface water bodies or discharging waste/ contaminated water into downstream. There was no evidence of destruction to farms, and vegetations. This therefore makes the scheme responsible. The scheme subscribes to a code of practice that has provision on land reclamation in its operational manual which makes it sustainable though yet to carry out land reclamation. The TCMS also makes use of underground water without trespassing into surface water as part of its sustainability mechanism. SWOT results thus show that the strengths of Ghana's community mining scheme outweigh its weaknesses whilst the opportunities also outweigh the threats. These findings show that the scheme as an emerging paradigm has prospects for eradicating Ghana's problem of SSM illegal mining. The analysis also means that the Scheme is a panacea for the country's major problem of land degradation and its associated effects in the environment. The stand-alone operational manual for the scheme serves as the roadmap for the administration of the scheme and a benchmark against which it can assessed. The manual was developed because community is new in Ghana and has to be made to fit into existing mining laws. Because, the scheme was a novel creation of the government of Ghana, it was made to find space within the already existing legal and institutional frameworks but there seemed to be a political drive and the spearheading of the administration of the scheme in conflict with the mandate of the Minerals Commission in some cases. One major strength of the scheme is its ability to engage several thousands of SSM illegal mining cohorts across different communities, particularly those heavily prone to illegal mining. One community mining scheme could employ a few thousands of illegal miners. This thus serves as the assurance for household income. The scheme offers better working conditions under safe and controlled concession with improved technologies such Mercury-free plants, crushers, gold catcher, generators and electricity, security, cooks, et al. So far, the operation of the scheme has not polluted waterbodies, not destroyed farms, and spilled mercury, washed loads in the rivers as typical of the illegal mining activities in Ghana. This paradigm shift thus makes the scheme environmentally friendly, and responsible. In the midst of these substantial strengths, there are certain core weaknesses that could compromise the sustainability of the scheme in Ghana. These include partisan politics which could trigger the exclusion of illegal miners appearing to have affiliations with non-ruling government. There are also reported cases of conflicts with existing mining concessions belonging to resident mining companies in the communities. A typical case is the community mining scheme in Asuadei within the Amansie South District that faced termination over land litigation with Asanko Gold Mine, a large-scale mining company. That said, availability of lands for community mining concessions (25.2 acres) appears to be lacking in some hotspot mining communities which has resulted in the shifting of the scheme to different communities and their implementation without due

Track 6:
Environmental And Social Governance Systems For Sustainable Development Of Africa

Hamenoo, S. V. Q., Baah-Ennumh, T. Y. and King, R. S. (2024). Community Mining: The Evolving Paradigm in the Ghanaian Small-Scale Mining Sector – The Case of Tokwae Community Mining Scheme in the Ashanti Region of Ghana. In: Owusu-Manu, D., Adesi, M. and Acheampong, A. (Eds) Proceedings of the 1st International Conference on Environment, Social, Governance and Sustainable Development of Africa (ICESDA-2024), 26-29 March 2024, Kwame Nkrumah University of Science and Technology (KNUST)-Kumasi, Ghana, Green Communities International, 528-556.

ICESDA 2024 PROCEEDINGS
ISSN -3057-3912 PRINT
3057-3920 ONLINE

process and formalization/ licensing by the Minerals Commission as is the case in the Nsiana community in the Amansie West District in the Ashanti region of Ghana. The implementation of the Scheme is spearheaded by an ad hoc Committee set up by government. Another shortfall of the scheme has to do with the question of sustainability plan and post-mining land reclamation plan (Hamenoo, Baah-Ennuhm & King, forthcoming). The Scheme seemed to have no sustainability and reclamation plans in place. Though, land reclamation is placed in the Scheme's Operational Manual, there is yet to be one pot-mining land reclamation attributable to the Scheme (Hamenoo, Baah-Ennuhm & King, forthcoming). The opportunities of the Scheme outweigh the Threats it poses to the country. As shown in existing and current literature (Aryee et al., 2013; Obeng et al., 2015; Ghana Chamber of Mines, 2015; Kuffour, Tiimub, & Agyapong, 2018; Ministry of Lands and Natural Resources, 2017; Multilateral Mining Integrated Project, 2017; Frimpong-Boateng, 2021; Hamenoo, Baah-Ennuhm & King, forthcoming). The Scheme has by far demonstrated the capacity of absorbing several thousands of SSM illegal miners within Ghana's hotspot mining areas. This has the potential of attracting other mining communities in the country to follow same in response to curbing the increasing impact on the land, farms, waterbodies and vegetation. The consequence is that responsible and sustainable mining can be better achieved by the Scheme within the Ghanaian SSM interface. The Scheme's provision of improved technologies such the Mercury-free plants and rock crushers for instance are indicative of its potential for continuous use of improved technology. The implication is that more environmentally friendly mining technologies i.e. provision of Mercury-free plants will be imported into the country towards the mining operation of the scheme. This could provide business for individual importers and also make Ghana market for such environmentally-friendly mining equipment. The overall effect is that Mercury spillage in the environment with its associated health hazards and impacts will be mitigated as a result of the Scheme. The corresponding effect these turn-out have on land and environmentally linked SDGs are promising. The scheme is therefore at the heart of the current government of Ghana though could face audit and re-structuring due to change in government. The Scheme is however faced with community revolt and rejection in some mining areas in Ghana on the grounds that it the Scheme is not different from illegal mining and could lead to the problem of land and environmental degradation confronting the country. This turn-out is also being crusaded by the land owners and chiefs who serve as custodians of the lands in Ghana. What this means is that community leaders are becoming very concerned about the destruction of their lands due to mining and the non-practice of post-mining reclamation. This emerging observation could constrain the replication of the Scheme in other mining areas in the country. The scheme given its political undertone, could be trespass into protected areas and forest reserves when communities fail to offer lands for the Scheme.

Conclusion and Policy Recommendation

Community mining schemes have the capacity of job creation for thousands of Ghanaian youths within mining communities which has the prospects of eradicating illegal mining in the country given its modus operandi and incentives. The scheme thus has the potential of reducing mining-related land degradation in Ghana. The implication this paradigm has on the SDGs, responsible and sustainable

Track 6:
Environmental And Social Governance Systems For Sustainable Development Of Africa

Hamenoo, S. V. Q., Baah-Ennumh, T. Y. and King, R. S. (2024). Community Mining: The Evolving Paradigm in the Ghanaian Small-Scale Mining Sector – The Case of Tokwae Community Mining Scheme in the Ashanti Region of Ghana. In: Owusu-Manu, D., Adesi, M. and Acheampong, A. (Eds) Proceedings of the 1st International Conference on Environment, Social, Governance and Sustainable Development of Africa (ICESDA-2024), 26-29 March 2024, Kwame Nkrumah University of Science and Technology (KNUST)-Kumasi, Ghana, Green Communities International, 528-556.

ICESDA 2024 PROCEEDINGS
ISSN -3057-3912 PRINT
3057-3920 ONLINE

mining cannot be underemphasised. The scheme's contribution to environmental management, social governance, and sustainable development in Ghana is getting momentum. The replication of the scheme in other mining communities Ghana therefore needs a scaling-up so as to double the gains so far seen. This paradigm thus serves as case study for other mining jurisdiction in Africa confronted with the problem of illegal small-scale mining. The scheme's evidence of inclusiveness, responsible and sustainable mining practices thus makes it suitable for replication in other mining jurisdictions in Africa towards sustainable development. That said, the strength and opportunities of the scheme far outweigh its weaknesses and threats, making it suitable for replication in other mining jurisdictions.

Recommendation

Given the prospects of the scheme, there is still the need to continuously engage and involve mining communities before rolling it out the scheme as the success of any development agenda require the participation of the primary stakeholders. The scheme needed replication in other mining jurisdiction in Africa towards reducing the problem of illegal small-scale mining, environmental degradation and the regional efforts of achieving the SDGs.

References

Afifah, I., & Sopiany, H. M. (2017). SWOT ANALYSIS: A THEORETICAL REVIEW. *The Journal of International Social Research*, *87*(1,2), 149–200.

Adisasmita, R. (2013). Theories Of Economic Development (Yogyakarta: Graha Ilmu)

Adriani, E.; Gustaman, S.; Saputri, D.R.; Kusnadi, E.; Suheri; Emo, M. Export Commodity Analysis, 2012–2019, Agriculture, Industry and Mining Sector; Statistics Indonesia: Jakarta, Indonesia, 2020

Amankwah, R. K., & Anim-Sackey, C. (2003). Strategies for sustainable development of the small-scale gold and diamond mining industry of Ghana. *Resources Policy*, 29(3), 131-138.

Asante Akim South District Assembly (2012). Annual Performance Report. AASDA, Juaso.

https://gna.org.gh/2023/07/23rd-community-mining-scheme-launched-7500-direct-jobs-to-be-created-lands-ministry/#google_vignette

Australian Institute of Family Studies. (2017). Practice Guide. Expert Panel Resource Sheet

Published by the Australian Institute of Family Studies

https://aifs.gov.au/resources/practice-guides/what-community-development#:~:text=Community%20development%20is%20a%20process,stronger%20and%20more%20connected%20communities.

Benzaghta, M. A., Elwalda, A., Mousa, M. M., Erkan, I., & Rahman, M. (2021). SWOT analysis applications: An integrative literature review. Journal of Global Business Insights, 6(1), 55-73. https://www.doi.org/ 10.5038/2640-6489.6.1.1148

Bhattacherjee, A. (2012). *Social Science Research: Principles, Methods, and Practices* (Second Edi). Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License.

Cane, I., Schleger, A., Ali, S., Kemp, D., McIntyre, N., McKenna, P., Lechner, A., Dalaibuyan, B., Lahiri-Dutt,

Track 6:
Environmental And Social Governance Systems For Sustainable Development Of Africa

Hamenoo, S. V. Q., Baah-Ennumh, T. Y. and King, R. S. (2024). Community Mining: The Evolving Paradigm in the Ghanaian Small-Scale Mining Sector – The Case of Tokwae Community Mining Scheme in the Ashanti Region of Ghana. In: Owusu-Manu, D., Adesi, M. and Acheampong, A. (Eds) Proceedings of the 1st International Conference on Environment, Social, Governance and Sustainable Development of Africa (ICESDA-2024), 26-29 March 2024, Kwame Nkrumah University of Science and Technology (KNUST)-Kumasi, Ghana, Green Communities International, 528-556.

ICESDA 2024 PROCEEDINGS
ISSN -3057-3912 PRINT
3057-3920 ONLINE

K., & Bulovic, N. (2015). *Responsible Mining in Mongolia : Enhancing Positive Engagement* (Issue JUNE).

Chugh, Y. P., Schladweiler, B. K., & Skilbred, C. (2023). Sustainable and responsible mining through sound mine closure. *International Journal of Coal Science & Technology*, *10*(14), 1–11. https://doi.org/10.1007/s40789-023-00572-x

Dennis, E. P. (2011). Collaborative Planning Theories and Criticisms. *Planning Theories*. http://www.yeahokthen.com/2011/05/collaborative-planning-theories-and.html

Devi, B.; Prayogo, D. Mining and Development in Indonesia: An Overview of the Regulatory Framework and Policies; International Mining for Development Centre: Queensland, Australia, 2013

EnCore Energy (2022). 4 Ways You Can Apply Responsible Mining in the 21st Century.

https://encoreuranium.com/mining/responsible-mining-in-the-21st-century. (accessed 12/12/23).

Fainstein, S. S. (2005). Planning Theory and the City. *Journal of Planning Education and Research*, *25*(2), 121–130. https://doi.org/10.1177/0739456X05279275

Foot, J. & Hopkins, T. (2009). A glass half-full: how an asset approach can improve community health and well-being. Improvement and Development Agency (IDeA). Available https://www.local.gov.uk/asset-approach-community-wellbeing-glass-half-full

Ghana Statistical Service (2014). District Analytical Report. Asante Akyem South District. 2010 Population and Housing Census.

Gürel, E., (2017). SWOT Analysis: A Theoretical Review. Journal of International Social Research.

Doi: 10.17719/jisr.2017.1832

Healey, P. (1997) Collaborative planning: shaping places in fragmented societies, MacMillan Press: London.

Hendrakusumah, E., & Sukmayaningrum, C. C. and I. (2020). Utilization of post mining land towards sustainable development. *Mater. Sci. Eng*, *830*. https://doi.org/10.1088/1757-899X/830/3/032072

Honorene, j., (2017). "Understanding the Role of Triangulation in Research," *Scholarly Research Journal for Interdisciplinary Studies* 4, no. 31s: 91–95, www.srjis.comwww.srjis.com. https://www.srjis.com/pages/pdfFiles/149544238718.%20HONORENO%20JOHNSON.pdf (accessed 12/12/23).

Hruschka, F., & Echavarría, C. (2011). *Rock-Solid Chances For responsible artisanal mining*. Alliance for Responsible Mining.

Hsiu F. H., & Shannon, S. E. (2005). "Three Approaches to Qualitative Content Analysis," *Qualitative Health Research* 15, no. 9: 1277–1288. https://www.researchgate.net/publication/7561647_Three_Approaches_to_Qualitative_Content_Analysis (accessed 12/12/23).

Innes, J. E. (2004). Consesus Building: Clarifications for the Critics.Planning Theory, 3 (1), 5-20.

Intergovernmental Forum on Mining, Minerals, M. and S. D. (2018). *Global Trends in Artisanal and Small-Scale Mining (ASM): A review of key numbers and issues*.

Track 6:
Environmental And Social Governance Systems For Sustainable Development Of Africa

Hamenoo, S. V. Q., Baah-Ennumh, T. Y. and King, R. S. (2024). Community Mining: The Evolving Paradigm in the Ghanaian Small-Scale Mining Sector – The Case of Tokwae Community Mining Scheme in the Ashanti Region of Ghana. In: Owusu-Manu, D., Adesi, M. and Acheampong, A. (Eds) Proceedings of the 1st International Conference on Environment, Social, Governance and Sustainable Development of Africa (ICESDA-2024), 26-29 March 2024, Kwame Nkrumah University of Science and Technology (KNUST)-Kumasi, Ghana, Green Communities International, 528-556.

ICESDA 2024 PROCEEDINGS
ISSN -3057-3912 PRINT
3057-3920 ONLINE

Johnson-Laird, p., (2010). "Deductive Reasoning," *Wiley Interdisciplinary Reviews: Cognitive Science* 1, no. 1: 8–17, https://www.researchgate.net/profile/Phil-Johnson Laird/publication/227547309 (accessed 12/12/23).

Knoche, D., Rademacher, A., & Schlepphorst, R. (2019). Best practice report on environmental protection and post-mining land reclamation. In *TRACER* (Issue December).

Kramadibrata, S. Review of the mineral development in Indonesia. Procedia Earth Planet. Sci. 2013, 6, 6–7.

Kelly S. (2010) Qualitative interviewing techniques and styles. In: Bourgeault I, Dingwall R, de Vries R. (eds) *The Sage Handbook of Qualitative Methods in Health Research*, Thousand Oaks: Sage Publications.

Lahiri-dutt, K. (2023). Chapter Title: Reassembling Reassembling informal gold-mining for development and sustainability? Opportunities and limits to formalisation in India, Indonesia and Laos. Book Subtitle: Informal, artisanal and small-scale mining in the contemporary world. In K. LAHIRI-DUTT (Ed.), *Between the Plough and the Pick.* (Issue May 2023). ANU Press.

Langefeld, O., & Binder, A. (2018). Responsible mining. *Mining Report*, *1*(154), 185. https://doi.org/10.1016/S2213-2600(14)70058-X

Laurence, D. (2011). A Guide to Leading Practice Sustainable Development in Mining. In *Leading Practice Sustainable Development Program*.

Maričić, T., Cvetinović M., Jean-Claude B. (2018). Participatory Planning in the Urban Development of Post-Socialist Serbia. A Support to Urban Development Process. Online at http://spuds.edu.rs/downloads/1eng.pdf

Minerals Commission of Ghana. (2021). *Small-Scale and Community Mining Operational Manual*.

McKnight, J. (2017). Asset-Based Community Development: The Essentials, ABCD Institute. Available: https://resources.depaul.edu/abcd-institute/publications/publications-bytopic/Documents/ABCD-%20The%20Essentials%20-2.pdf

Ministry of Lands and Natural Resources (MoLNR). (2022). *MEDIUM TERM EXPENDITURE FRAMEWORK (MTEF) FOR 2022 - 2025*.

Narendra, B. H., Siregar, C. A., Turjaman, M., Hidayat, A., Rachmat, H. H., Mulyanto, B., Maharani, R., Rayadin, Y., & Prayudyaningsih, R. (2021). Managing and Reforesting Degraded Post-Mining Landscape in Indonesia : A Review. *Land*, *10*(658), 1–29.

Nugroho, A.W.; Yassir, I. (2017). Policy study on post coal mining reclamation assessment in Indonesia. J. Anal. Kebijak. Kehutan. 14, 121–136

Obeng, S., Amoako-Arthur, Isaac Buabeng Yaw, I., Gyasi-Tenkorang, J., Adusei, R., & Sosi, H. (2015). *Effects of Illegal Small Scale Gold Mining Activities on the Environment : Case Study of Selected Communities in the Amansie West District*. KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY.

Track 6:
Environmental And Social Governance Systems For Sustainable Development Of Africa

Hamenoo, S. V. Q., Baah-Ennumh, T. Y. and King, R. S. (2024). Community Mining: The Evolving Paradigm in the Ghanaian Small-Scale Mining Sector – The Case of Tokwae Community Mining Scheme in the Ashanti Region of Ghana. In: Owusu-Manu, D., Adesi, M. and Acheampong, A. (Eds) Proceedings of the 1st International Conference on Environment, Social, Governance and Sustainable Development of Africa (ICESDA-2024), 26-29 March 2024, Kwame Nkrumah University of Science and Technology (KNUST)-Kumasi, Ghana, Green Communities International, 528-556.

ICESDA 2024 PROCEEDINGS
ISSN -3057-3912 PRINT
3057-3920 ONLINE

Ofori, D. R., & Ofori, J. J. (2018). Digging for Gold or Justice ? Misrecognition and Marginalization of " Illegal " Small Scale Miners in Ghana. *Social Justice Research*, *31*(4), 355–373. https://doi.org/10.1007/s11211-018-0313-x

Ommani, A. R., (2011). Strengths, weaknesses, opportunities and threats (SWOT) analysis for farming system businesses management: Case of wheat farmers of Shadervan District, Shoushtar Township, Iran. African Journal of Business Management Vol. 5(22), pp. 9448-9454, 30 September, 2011 Available online at http://www.academicjournals.org/AJBM

Oxford University Press on behalf of the Agricultural & Applied Economics Association.

Online at https://www.jstor.org/stable/1237310 (accessed 12/12/23).

Padangaran A M 2011 Project Management For Community Development. The concept, Theory and Applications (Kendari: Unhalu Press)

Palinkas LA, Horwitz SM, Green CA, et al. (2015) Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. Administration and Policy in Mental Health and Mental Health Services Research 42(5): 533–544.

Patton, M. Q. (2002). Qualitative Research and Evaluation Methods (3rd ed.). SAGE Publications.

Polkinghorne M., & Taylor, J., (2022). "Recursive Abstraction Method for Analysing Qualitative Data," *Encyclopedia of Tourism Management and Marketing.* 636–638, https://eprints.bournemouth.ac.uk/35096/1/Recursive%20Abstraction.pdf (accessed 12/12/23).

Prabawati M. I. & Pradana, G W (2018). Strategy community development based on local resources. The 2nd International Joint Conference on Science and Technology (IJCST) 2017 IOP Publishing. IOP Conf. Series: Journal of Physics: Conf. Series 953 (2018) 012158 doi :10.1088/1742-6596/953/1/012158

Putra, H.F.; Sulistijorini; Aryanti, N.S. (2017). Landscape function of post tin-mining land after reclamation in Bangka, Indonesia. IOP Conf. Ser. Earth Environ. Sci. 58, 012018.

Responsible Mining Foundation (RMF). (2018). *Responsible Mining Index*.

Roland L. Warren (1968). Theory and Practice in Community Development. American Journal of Agricultural Economics, Dec., 1968, Vol. 50, No. 5, Proceedings Issue (Dec., 1968), pp. 1226-1238

Rozmi, A. N. A., Nordin, A., & Bakar, M. I. A. (2018). The perception of ICT adoption in small medium enterprise: A SWOT analysis. International Journal of Innovation Business Strategy, 19(1), 69-79

Supriyanto and Subejo 2004 Harmonization of Rural Community Empowerment with Sustainable Development Extensia Bulletin Vol 19/Th Xi/2004

Smith, R.W. (1973). A theoretical basis for participatory planning. *Policy Sci* **4**, 275–295 https://doi.org/10.1007/BF01435125

Singh N (2010). SWOT Analysis – A Useful Tool For Community Vision A concept paper of central Himalayan village. Res., 2(9): 16-18.

Track 6:
Environmental And Social Governance Systems For Sustainable Development Of Africa

Hamenoo, S. V. Q., Baah-Ennumh, T. Y. and King, R. S. (2024). Community Mining: The Evolving Paradigm in the Ghanaian Small-Scale Mining Sector – The Case of Tokwae Community Mining Scheme in the Ashanti Region of Ghana. In: Owusu-Manu, D., Adesi, M. and Acheampong, A. (Eds) Proceedings of the 1st International Conference on Environment, Social, Governance and Sustainable Development of Africa (ICESDA-2024), 26-29 March 2024, Kwame Nkrumah University of Science and Technology (KNUST)-Kumasi, Ghana, Green Communities International, 528-556.

ICESDA 2024 PROCEEDINGS
ISSN -3057-3912 PRINT
3057-3920 ONLINE

Teece, D.J. (2018). SWOT Analysis. In: Augier, M., Teece, D.J. (eds) The Palgrave Encyclopedia of Strategic Management. Palgrave Macmillan, London. Onine at https://doi.org/10.1057/978-1-137-00772-8_285 (accessed 12/12/23).

Weber-Fahr, M., Strongman, J., Kunanayagam, R., McMahon, G., & Sheldon, C. (2001). *Mining and Poverty Reduction* (pp. 1–38). http://www.intussen.info/OldSite/Documenten/Noord/Internationaal/WB/PRSP Sourcebook/20 Mining and poverty reduction.pdf

Wenig, M. M., Reilly, K. O., & Chambers, D. (2005). *The Mining Reclamation Regime in the Northwest Territories: A Comparison with Selected Canadian Contributing author.*

Wu, Y. (2020, February 17). The marketing strategies of IKEA in China using tools of PESTEL, Five Forces Model and SWOT Analysis [Paper Presentation]. International Academic Conference on Frontiers in Social Sciences and Management Innovation, Beijing, China

Woźniak, J., & Pactwa, K. (2018). Responsible Mining—The Impact of the Mining Industry in Poland on the Quality of Atmospheric Air. *Sustainability*, *10*(4), 1184. https://doi.org/10.3390/su10041184

Yang, J., Yang, L., & Ma, H. (2022). Community Participation Strategy for Sustainable Urban Regeneration in Xiamen, China. *Land*, *11*(5), 600. https://doi.org/10.3390/land11050600

Track 6:
Environmental And Social Governance Systems For Sustainable Development Of Africa

Hamenoo, S. V. Q., Baah-Ennumh, T. Y. and King, R. S. (2024). Community Mining: The Evolving Paradigm in the Ghanaian Small-Scale Mining Sector – The Case of Tokwae Community Mining Scheme in the Ashanti Region of Ghana. In: Owusu-Manu, D., Adesi, M. and Acheampong, A. (Eds) Proceedings of the 1st International Conference on Environment, Social, Governance and Sustainable Development of Africa (ICESDA-2024), 26-29 March 2024, Kwame Nkrumah University of Science and Technology (KNUST)-Kumasi, Ghana, Green Communities International, 528-556.