

Stuck in transition? Artisanal mining, livelihood diversification and rural change in Sierra Leone

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Abstract

In mineral-rich regions of Sierra Leone, the diversification of livelihood portfolios is widespread, and rural communities have long pursued complex and dynamic strategies that involve the intertwining of mining and farming activities. In recent years, however, alluvial diamond deposits in the Eastern District of Kono have increasingly become ‘worked out’, and artisanal mining communities have had to adapt and demonstrate resilience. Building on a rich body of field-based research that the authors have carried out over the past 20 years, this paper critically explores both the constraints and opportunities that are currently shaping youth resourcefulness and self-reliance, as well as the government’s policy response to rapidly changing conditions in mining communities. It argues that although it remains the case that artisanal and small-scale mining (ASM) operations continue to dovetail with a wide range of other livelihood activities, they are fast becoming the alternative, as miners shift to other forms of livelihoods, including agriculture. This shift, the paper argues, is however not a smooth process, as miners making the transition are faced with a myriad of challenges including lack of access to finance and agricultural inputs. As a result, communities are ‘stuck’ in transition despite a renewed interest in farming driven by a parallel resurgence of associational life in rural areas. While the problem of youth marginalization and unemployment in Kono have long received considerable attention from both the government and civil society, whether or not the evolving policy response is able to keep up with the current rapid pace of change in artisanal mining communities remains open to question.

Key words: Artisanal mining, diamonds, livelihood diversification, farming, youth resilience, Sierra Leone

Introduction

Artisanal and small-scale mining (ASM) – low tech, labour-intensive mineral extraction and processing – has been a key livelihood activity in Sierra Leone’s mineral-rich regions for decades, directly employing an estimated 300,000 people (Government of Sierra Leone, 2018; De Jong et al, 2020). The ASM sector also plays a significant role in mineral export revenues: in 2022, ASM contributed an estimated 30 percent of total official diamond exports (National Mineral Agency, 2023), down from 48 percent in 2015 (Conteh and Maconachie, 2021). Drivers associated with the trend of declining artisanal production to official diamond export revenues include persistent smuggling across the country’s porous borders (Fanthorpe and Gabelle, 2013; Wilson, 2013), the under-declaration of export values for tax purposes (Wilson, 2013), and the fast-paced depletion of alluvial diamond deposits from increased mechanisation, which has, in turn, pushed traditional artisanal operators out of mining areas (Conteh and Maconachie, 2021). While mechanisation is often regarded as a key driver of efficiency in mining (Rupprecht, 2017; Priester et al, 2010), it has also been identified as one of the greatest threats to the livelihoods of ASM communities (Conteh and Maconachie, 2021; Pedersen et al, 2021). Not only does it deplete mineral deposits at a significantly faster rate, but it also undervalues and dislocates manual labour from the mines, forcing young people to search for precarious and unsustainable forms of work elsewhere (Conteh and Maconachie, 2021).

Although mechanisation is certainly not the only factor underscoring diamond resource depletion, in Kono District there is a widely held view that it has rapidly accelerated the process. To date, the artisanal extraction of alluvial diamond deposits, and indeed other minerals, has not been accompanied by a strategy that supports livelihoods sustainability in ASM communities. After over 80 years of mining, one study estimates that artisanal diamond mining has “impacted over 40% of the country’s estimated 7,700 square miles of diamondiferous land in the south-east” of the country (Nimba Research and Consulting, 2015:15), leaving mining communities with a severe shortage of land for agriculture. Due to weak or unenforced laws and policies, coupled with the insufficient institutional and regulatory capacity of key state agencies, mined out lands have not been progressively rehabilitated. Resource revenue redistribution schemes such as the Diamond Area Community Development Fund (DACDF), which was designed to return an insignificant 0.75 percent tax of the export value of artisanal diamonds to mining communities (World Bank, 2009), have been poorly designed and implemented, and have often led to elite capture (Maconachie and Conteh, 2021; Dupuy, 2014; Maconachie, 2012, 2010, 2009). In sum, while ASM communities have contributed significantly to job creation, local development and regional economic growth over the years, they face an uncertain future. As alluvial diamond deposits continue to be depleted, artisanal miners face no alternative but to transition to other forms of livelihoods, a process that is plagued with a myriad of obstacles and challenges.

In our analysis, we build on a voluminous body of literature that has focussed on ‘blood diamonds’ and the role that diamond-fuelled patrimonial networks assumed in the creation of a socially-excluded rural underclass of youth during the period leading up to Sierra Leone’s protracted civil war during the 1990s (see, for example, Richards, 2005; 1996; Richards et al., 2004; Peters, 2011;

2006; Keen, 2005; Reno, 2003, Wilson, 2013; Zulu and Wilson, 2012). Emerging from these arguments, one common explanation for the underlying cause of the war has suggested that the conflict developed from an intra-elite struggle to control markets in diamonds and other extractive resources, which was subsequently taken over by armed factions composed of angry, frustrated youth, when the state collapsed (Reno, 1998; 2003). While the country's brutal civil war served as a stark reminder of what can happen when young people's social mobility becomes blocked, many youth in Kono today continue to find themselves in challenging situations where they are unable to meet their social or economic obligations, set up an independent household or transition into a state of 'adulthood'.

Drawing upon field-based research carried out by the researchers over the past 20 years in Kono District and Freetown, this paper presents and discusses new empirical data collected in July 2022 through key informant interviews, focus group discussions, and participant and site observations. In doing so, the paper critically explores both the constraints and opportunities that are currently shaping livelihood options, youth resourcefulness and self-reliance, as well as the government and development partners' policy responses to the rapidly changing conditions in mining communities. We argue that although it is still the case that ASM operations continue to dovetail with a wide range of other livelihood activities (see, for example, Maconachie and Binns, 2007; Maconachie, 2011; Cartier and Bürge, 2011; Conteh and Maconachie, 2021), they are fast becoming the alternative as alluvial diamond deposits become depleted and the cost-of-living crisis takes its toll. These conditions are forcing artisanal diamond miners to shift to other forms of livelihoods, including re-agrarian strategies that embrace agriculture. This transition, the paper argues, is however not a smooth process, particularly as miners lack access to finance and agricultural inputs. As a result, communities have become 'stuck' in transition, despite a renewed interest in farming driven by a parallel resurgence of associational life in rural areas. While the concern for youth marginalisation and unemployment in Kono has long received considerable attention from both the government and civil society organisations (CSOs), whether or not the evolving policy response is able to keep up with the current rapid pace of change in artisanal mining communities remains open to question. In exploring the constraints and opportunities that are shaping livelihood options in artisanal diamond mining communities in Kono district, as well as the policy responses of the government and development actors, this paper contributes new evidence to the literature on ASM and livelihoods in Africa, particularly within the context of resource-depletion induced livelihood diversification (see, for example, Pedersen et al, 2021; Conteh and Maconachie, 2021).

Following this introduction, the paper begins by reviewing recent research on ASM and livelihood diversification, with a focus on Sub-Saharan Africa, identifying key factors that have shaped this process as miners seek to transition to new income sources. In the third section of the paper, the analysis explores the current 'crisis of livelihoods', examining the specific challenges Sierra Leonean miners face as diamond deposits are depleted, income declines, and vulnerability to exploitation is exacerbated. This section also examines the diverse range of alternative livelihood activities pursued by miners, including agriculture, petty trading, motor bike taxi services, and other small businesses. In doing so, the discussion reflects on the factors influencing their choices

and the varying levels of success in these new ventures. The fourth section evaluates the government and development partners' policies and programmes that seek to uplift artisanal mining and livelihood diversification, identifying key gaps and shortcomings in support mechanisms and training opportunities. The section further discusses the negative consequences of inadequate policy responses, such as increased poverty, environmental degradation and social unrest. The fifth section goes on to explore opportunities for successful and sustainable livelihood diversification, examining a case study of the Yormata Youth Farmers Association, drawing out the key elements of its success and exploring its potential for wider application. The sixth and final section concludes by summarising the main findings of the paper and emphasising the importance of supporting livelihood diversification for artisanal miners. Potential policy recommendations and development interventions are discussed, to facilitate a fluid and more sustainable transition for miners.

Conceptualising artisanal and small-scale mining and livelihoods diversification in Africa

Globally, ASM provides employment for an estimated 44 million people in 80 countries (Calvão et al, 2021; McQuilken and Perks, 2020), with Africa alone accounting for an estimated 20 million artisanal operators (Hilson et al, 2018). Despite its widespread importance, early academic and policy conceptualisation of ASM characterised it predominantly as an undesirable activity (Noetstaller, 1987; Alpan, 1986), attracting and retaining "...opportunistic, and at times, rogue, entrepreneurs" (Hilson et al, 2018: 306). For a long time, this characterisation underpinned and strongly influenced the programmes of governments, development partners and non-governmental organisations, reinforcing and reproducing a deeply politicised narrative that criminalised artisanal miners (Svarstad et al, 2018) and required states to act to formalise the sector. These sentiments were particularly driven by the fact that entry into the ASM sector has relatively low-barriers, and exists on the margins of formal state regulation. Given that the majority of ASM operations are unlicensed, a space has subsequently opened up for informal and illegal mining to flourish (Johnson 2019; Le Billon, 2018; Siegal and Veiga 2009). As such, efforts aimed at regulating mining by governments have tended to predominantly focus policy processes on the large-scale sector, resulting in a persistent large-scale 'bias' (Hilson, 2019; Maconachie and Conteh, 2019; Conteh and Maconachie, 2021). This has culminated in a complex relationship between ASM and large-scale mining companies in Africa that is fraught with tension, as the two sectors clash and compete over access to land for their operations (Yankson and Gough, 2019; Hilson, 2019). While it is certainly the case that ASM can contribute to local value chains and provide employment opportunities, it has often been adversely impacted by the expansion of the large-scale sector, leading to displacement, resource competition and environmental damage (Yankson and Gough, 2019; Hilson et al, 2017; Hilson, 2019).

Contemporary research has not only demonstrated the resilience of ASM as a major livelihood source for the poor in developing countries, but it has also illustrated that the sector is a lifeline for many who have been made redundant from formal work, including for those retrenched during the implementation of structural adjustment programmes across Africa during the 1980s and 1990s (Hilson et al, 2017; Hilson and Potter, 2005; Banchirigah, 2006; 2008). In Sierra Leone, for

instance, a number of studies have explored the complex, inter-locking relationship between diamond mining and agriculture. This research has revealed that miners view farming and mining activities to be complementary activities; farming provides a stable income and food security, while mining offers the potential for high, but unpredictable earnings (Maconachie, 2022; Maconachie and Binns, 2007). Researchers have thus called for the implementation of policies aimed at promoting sustainable mining practices to minimise environmental damage, improve access to markets and credit for both farmers and miners, strengthen land tenure security to encourage long-term investments in agriculture, and to foster cooperation between the mining and agricultural sectors (Maconachie, 2022; Maconachie and Binns, 2007).

Elsewhere in Africa, research carried out in Malawi has similarly demonstrated how ASM can potentially alleviate poverty in rural areas, given the vital employment and incomes it provides for many Malawians. This is particularly the case during the dry season when agricultural activities are limited, with some scholars accordingly calling for the Malawian government to pay more attention to the ASM sector as a strategy for balancing its traditional focus on agriculture as the main driver of rural development (Kamlongera, 2011). Likewise, in Guinea, ASM is deeply integrated in the rural economy, with mining activities contributing significantly to household incomes, especially during the dry season when agricultural opportunities are limited (Huntington and Marple-Cantrell, 2022). As is the case in parts of West Africa, many households engage in both ASM and agriculture, viewing them as complementary income sources, and a part of a diversification strategy that enhances resilience and reduces vulnerability to economic shocks (Huntington and Marple-Cantrell, 2022).

The need to prioritise ASM as a major rural livelihood source, as well as the diversification of livelihoods in mining communities, has been driven by a several factors. Most notably, ASM is an activity whose income flow is susceptible to shocks and economic instability, given its seasonality, fluctuating mineral prices, and miners' limited access to safety nets (Huntington and Marple-Cantrell, 2022; Maconachie, 2022; Maconachie and Binns, 2007). This precarity pushes communities towards alternative income sources, giving rise to the need for the "...maintenance and continuous adaptation of a highly diverse portfolio of activities in order to secure survival that is a distinguishing feature of rural livelihood strategies in contemporary poor countries" (Elis, 2002: 290). A recent study of ASM and livelihoods in Ghana illustrates the significant contribution of the sector to the aspirations of many, who are not only determined to "get rich quick", but also to contribute to local economic development, using ASM as a platform for wealth creation and employment (Hilson and Hu, 2022). Motivated by the desire for economic gain and wealth creation, many miners, despite the risks and adversity, view ASM as a viable pathway to financial success and upward social and economic mobility (Hilson and Hu, 2022). Thus, once miners are able to generate sufficient capital from ASM, they are faced with the imperative of diversifying livelihoods within less economically vulnerable and unstable sectors, including agriculture (Hilson and Hu, 2022).

In addition, in many parts of Africa, resource depletion and environmentally unsustainable mining practices in ASM communities are forcing miners to seek alternative sources of income, or migrate

to new locations. This is especially the case as more mechanised methods are employed in the extraction and processing of minerals (Conteh and Maconachie, 2021; Pedersen et al, 2021; Chimhete, 2020). Mechanisation not only leads to a loss of employment for traditional miners as machines replace manual labor, but it also exacerbates poverty and income inequality in already vulnerable communities, as resource depletion is accelerated (Conteh and Maconachie, 2021; Pedersen et al, 2021). While mechanisation can lead to efficiency and improved mineral yields for those who can afford it, traditional miners, who are mostly poor, often struggle to compete and are forced out of the sector entirely. Therefore, the development and implementation of diversification strategies that can facilitate the exit of miners from ASM to other forms of livelihoods "...has particular implications for the possibility of reducing poverty...and the securing of resilient and sustainable communities" (Pedersen et al, 2021: 35).

However, whereas there is a clear and strong case for miners to diversify their livelihood portfolios, enhance their resilience against economic shocks, and for governments and development partners to provide the required support, the evidence suggests that this transition has not always been straightforward. For example, many of the alternative livelihoods available to miners – especially agriculture – are in themselves susceptible to some of the constraints inherent in ASM, including the challenges associated with seasonality (Maconachie, 2022; Ellis, 2000; Maconachie and Binns, 2007). Further, livelihood diversification from ASM is also often inhibited by a lack of relevant skills development and training programmes, as many of the more sustainable livelihoods do not always depend on manual labour (Baah-Ennumh et al, 2020). Moreover, transitioning out of ASM requires significant levels of capital, which in most developing countries is extremely difficult to obtain (Pedersen et al, 2021; Fisher, 2008; Hilson, 2012). Equally, miners wanting to make the transition from ASM to other livelihoods can be impeded by a lack of access to productive lands (Baah-Ennumh et al, 2020), loans, equipment and the networks needed to successfully engage in commerce, agriculture or transport (Pedersen et al, 2021; Perks, 2011). In the next section of the paper, we build upon and contribute to this literature on livelihood diversification. In doing so, we critically examine the unfolding livelihood crisis in Kono district, as resource depletion is forcing artisanal miners to transition to other forms of livelihoods.

Dwindling alluvial diamond deposits and shifting livelihoods

The depleted state of alluvial diamond deposits is a topic that frequently comes up in discussions concerning employment and livelihoods in Kono's diamondiferous chiefdoms, whether with chiefs, local government officials, dealers or miners themselves. However, reliable estimates on alluvial diamond reserves are difficult to obtain. To the best of our knowledge, only one study has painted an up-to-date qualitative picture of the state of reserves, through interviews with the former and last production manager of the defunct National Diamond Mining Company (Conteh and Maconachie, 2021). The study, which analysed the multidimensional and human security impacts of mechanisation on ASM communities in Kono, suggested that "only between 10 and 15 per cent of alluvial diamond deposits remain in the ground" (Conteh and Maconachie, 2021:4). Although the Government of Sierra Leone collaborated in a recent World Bank-funded geophysical survey

in 2019, which improved the country's geological knowledge base, little is publicly known about the country's remaining alluvial diamond deposits.

As such, local narratives related to depleted alluvial diamond deposits provide one of the most up-to-date pictures of the current state of diamond deposits in Kono. These perceptions are based on the lived experiences of interviewees and focus group discussants, and are informed by the current socioeconomic organisation and dynamics of the ASM value chain, demographics and other social changes in Kono. Taken together, these narratives present a comprehensive picture of the depleted state of alluvial diamond deposits.

The first narrative relates to the *scarcity and low quality of diamonds* – a recurring theme in all of our interviews and focus group discussions conducted in Kono since 2017 – which several informants noted was not the case few decades ago. As one miner explained:

Previously, it was very easy for us to find diamonds. But not just diamonds, I mean big ones. You did not need to work for long in order to find them. Pits were shallow and sometimes you may be tripping (digging gravel) and you see diamonds. That meant, you did not need much capital to mine, you just needed to start. But now, you can work in a place for many months, and not find anything. That is why it is 'investors' that are into mining now (Focus group discussion with miners, Small Sefadu, 17 July 2022).

This miner's view point, which was repeatedly expressed by others during our fieldwork, suggests that artisanal mining is a more time consuming and capital intensive operation now, requiring sustainable investment which only relatively wealthy Sierra Leoneans or foreign investors can afford to make. Unfortunately, given the high financial risks associated with ASM (Laing et al, 2023; Conteh and Maconachie, 2021; Maconachie and Binn, 2007), local banks and other financial service providers do not provide loans to artisanal miners (Interview with Community Bank Manager, Jaiama Nimikoro, 17 July 2022), leaving them reliant on less dependable and unsustainable funding sources for informal sector financing (World Bank, 2022a). The repeated reference to shallow pits from ASM operators also suggests that current realities at artisanal sites require digging deeper pits, that can only be undertaken by highly expensive excavators or other heavy earth digging and moving equipment. As one senior government official noted, "it seems that anyone who is now serious about finding diamonds will need a machine" (Interview with Government of Sierra Leone official, 22 July, 2022, Freetown), reinforcing the miner's point above.

Second, a *demographic narrative* has also emerged around the depletion of alluvial diamond deposits and the shift taking place from mining to other livelihood activities, with officials reporting an observable reduction in the population of artisanal mining communities. However, interviews with National Mineral Agency (NMA) and Environment Protection Agency (EPA) officials in Kono revealed what would appear to be a contradictory trend; while there has been an increase in ASM licences, field monitoring visits indicate reduced numbers of miners and diggers in the mines (Interview with Regional Managers, NMA and EPA, 15 July 2022, Koidu). This raises an important question: if indeed alluvial diamonds have been depleted, as our interlocutors suggest,

why is there an increase in ASM licences, but less people in the mines? Most notably, over the last few years, there has been a substantial increase in development partner funded programmes aimed at encouraging miners to register or “formalise” their operations (Network Movement for Justice and Development, 2021). As part of this process, CSOs have sought to amplify the benefits of miners formalising their operations, by pointing out that the more licences that are registered by chiefdoms, the bigger the DACDF payout from the government will be (Government of Sierra Leone, 2018; Maconachie and Conteh, 2021).

The effectiveness of CSO campaigns is however questionable, given that within Sierra Leone’s bifurcated ASM registration process – in which chiefs first have to issue prospective miners a surface rent certificate before they proceed to the NMA – the incentives for them to encourage miners to register with the NMA are low. This is predominantly because since 2019, payment of the DACDF has been infrequent, and when chiefs have received payments, the amounts have sometimes been less than the money they receive from surface rent payments (Maconachie and Conteh, 2021). In addition, state regulatory agencies including the NMA and EPA have recently intensified their monitoring of artisanal mines to stop illegal and environmentally unsustainable operations (Sierraloaded, 2023; Kalokoh and Kochtcheeva, 2022). As a result, although there has been a relative increase in the number of “formalised operations”, this has not translated into increased numbers of miners and diggers in the mines.

Other observable social changes reported by our informants help to explain the depleted state of alluvial diamond deposits in Kono. For example, it was noted that there was a reduced demand for housing in Kono, partially driven by the departure of wealthy and influential foreign businesspeople (especially Lebanese) from the district. The secretary general of the diamond and gold dealers’ association (DGDA) succinctly summarized this observation:

Look at the town, look at this house that you are seeing. I think only two or three people are in this house; and the other rooms behind are empty. Go over to Kissy town...even looking at the houses...you can only count two, three people on the veranda; you will know that the town is empty. Some are still here, but they are up the hills digging for gold. Maybe at the end of every week they come to see or greet their wives or come and spend the weekend and go back. Some businesses have closed because of the population; because if there is no population you won’t sell anything. So that caused the population to reduce, and then mining itself has reduced (Interview with Secretary General of the Diamond and Gold Dealers Association 20 July 2022).

The reference to “empty houses” as a marker illustrating the decline in alluvial diamond mining activities, resonates with findings of a recent study from non-mining settlements in the north and south of the country, where residents have migrated to urban centres – especially Freetown – when there has been a temporal or permanent lull in economic activities (Conteh, 2022). In the case of Kono, however, it is not only migrant diamond dealers, supporters and diggers that are leaving or shifting to other forms of livelihoods – even prominent indigenes are doing same. For instance, during our fieldwork in 2022, the president of DGDA, who until recently played a major role in the ASM subsector, was reported to now be engaged in sports administration with an international football association, with limited involvement in mining (Interview with Secretary General of the

Diamond and Gold Dealers Association 20 July 2022). Likewise, the secretary general of the DGDA, who previously had an active ASM operation, was at the time of fieldwork mostly engaged in retailing foodstuffs, including rice and vegetable oil. While he also retailed ASM equipment such as shovels and “shakers”, he noted that he could go “two days without selling, sometimes three days without selling”, emphasising the lack of demand resulting from the depletion of diamonds (Interview with Secretary General of the Diamond and Gold Dealers Association 20 July 2022).

Diamond depletion, the cost of living crisis and re-agrarianisation?

Given the depletion of alluvial diamond deposits and the corresponding decline in diamond mining activities, the livelihoods that miners and others who depend on the sub-sector, have been adversely impacted. Our interlocutors frequently referred to the “cost of living crisis” as a driver for scaling down their mining operations, and an incentive for investing in agriculture (Focus group discussions, Kono district 16 – 18 July 2022). Although for decades communities have regarded mining and agriculture as complementary rural livelihood activities (Maconachie and Binns, 2007; Maconachie, 2011; Conteh and Maconachie, 2021; Cartier and Bürge, 2011), our interlocutors appeared increasingly hesitant to invest in mining as they had done in previous times, given the astronomical increase in the prices of food and essential commodities. The high cost of living has left little room for investing in mining, however insignificant. Expressing frustration over the daily and unregulated increase in the prices of food and essential commodities, one focus group participant noted that:

...the prices have all gone up such that even the price of a banana has gone high; and the price of a pineapple has also gone up. Anything so far that can be obtained from agriculture, has gone up (Focus group participant 3, Kabokaya village, 16 July, 2022).

For example, the price of rice – the country’s staple food – was reported to have increased by over 60% within 12 months of our fieldwork in July 2022, placing enormous strain on miners’ resources and ability to cope (Focus group discussions, Kono district 16 – 18 July 2022). Although focus group participants did not provide evidence to support their qualitative evaluation of the cost-of-living crisis, international development partners’ assessments have supported such claims (International Monetary Fund, 2023: 6; World Food Programme, 2024). The International Monetary Fund, for instance, noted that year-on-year “inflation rose to 54 percent” by September 2023 “...on the back of a 40 percent fuel price increase and a 65 percent year-on-year increase in food prices” (International Monetary Fund, 2023: 6). Despite the promise that accompanied Sierra Leone’s large-scale mining boom (2012 – 2014), the sharp decline in commodity prices in 2014, which coincided with the Ebola epidemic, adversely affected economic growth (Harris and Conteh, 2020). Poverty levels have further been exacerbated by the COVID-19 pandemic and the Russia-Ukraine war, developments that have contributed to a weakening of economic growth and led to “...higher inflationary pressures, limited fiscal space and heightened debt vulnerabilities, which in turn have translated into a cost-of-living crisis with adverse implications for poverty and inequality” (International Monetary Fund, 2023: 57).

Given these interrelated livelihood challenges – depletion of alluvial diamond deposits and the cost of living crisis – artisanal miners and diggers are increasingly turning to other forms of livelihoods, especially agriculture and commercial motor taxi riding (Focus group discussions, Kono district 16 – 18 July 2022; Conteh and Maconachie, 2021). As one focus group participant rhetorically asked when explaining his rationale for shifting to agriculture, “if you don’t go and plant your cassava garden, and you don’t go and plant your coco garden, how will you manage to get your daily survival?” (Focus group participant 2, Kabokaya village, 16 July, 2022). For many miners desirous of a shift from mining, agriculture is the first choice, provided that land is accessible from chiefs (Focus group discussion with Ministry of Agriculture staff, Koidu, 18 July 2022), whose role as custodians of land in the district has often been abused and used as an instrument of control (Maconachie and Conteh, 2021). Also, miners can draw from the availability of family-based or cheap communal labour, locally referred to as “boma”, if they wish to engage in agriculture (Interview with civil society activists, 18 July 2022, Koidu). However, in addition to land and labour, both subsistence and commercial agriculture require capital for inputs, including seeds, fertilizers and equipment, which many cannot afford (Focus group discussions, Kono district 16 – 18, July 2022). As previously noted, local banks and other financial service providers do not lend to artisanal miners, given the high level of risks inherent in mining (Interview with Community Bank Manager, Jaiama Nimikoro, 17 July 2022). As such, miners are often “stuck in transition”, as they are neither gainfully engaged in mining, nor in agriculture.

Among the youth, focus group discussions revealed that the provision of commercial motorbike taxi services is the most popular alternative to mining, building on a phenomenon that emerged in the immediate post-war years as ex-combatants made the transition from fighting to a civilian existence (Menzel, 2011; Conteh and Maconachie, 2021). Although motorbike taxis are expensive, youth can secure them either through the support of family, friends or funds obtained from mining, if they are lucky (Focus group discussion with commercial motor taxi riders, Koidu 16 July 2022). However, many youth have been circumspect in their analysis of the safety and long-term benefits of bike riding, as they consider it a transitory activity, given the risks of accidents and long-term health complications such as pneumonia (Focus group discussion with commercial motor taxi riders, Koidu, 16 July 2022). In addition, riders have often reported stories of police requesting bribes in return for them to ride without licences (Conteh and Maconachie, 2021); and across the country, there have been numerous reports of running battles between the police and bike riders, sometimes leading to deaths and the breakdown of law and order (Sierraloaded, 2022; Sierra Leone News, 2021). Thus, for many miners and diggers making the transition from artisanal mining, both the long-term and sustainable alternative – agriculture – and the short-term alternative – commercial motorbike riding – pose unique challenges in themselves, which have made the transition very difficult. The next section of the paper analyses the policy and programmatic responses of the government and development partners to the challenges facing miners and other persons wanting to make the transition from ASM.

The response of government and development partners

The responses of the government and development partners to the impacts of depleting alluvial diamond deposits, cost of living crisis, and miners' shift from the mines to other forms of livelihoods, have been mixed and have had limited impacts. Typically, policy actions have traversed two broad directions: 1) retaining artisanal miners in the mines by supporting them to "graduate" into small scale miners, an approach promoted by regulators, especially the NMA; and 2) livelihood diversification, incorporating support for safe and environmentally sustainable mining practices, land reclamation and revegetation through farmer-miner cooperatives, promoted by the Ministry of Mines and Mineral Resources and development partners.

The lack of a unified approach on how to support miners is due in part to the limited knowledge and appreciation of the structural changes taking place both at the mines and in ASM communities more broadly. For instance, within the NMA, officials hold the view that artisanal miners need not exit mining for other livelihoods, as support should be provided for them to graduate to more technologically advanced small-scale mining operations (Interview with Senior government officials, 13 July, 2022, Freetown). Although this viewpoint is reflective of the agency's mandate, it also illustrates officials' overstated impression of the traditional artisanal miners' financial, technical and organisational abilities to successfully make the transition from artisanal mining to small-scale mining. It is also a view that seems oblivious of the current socioeconomic and structural changes taking place within the ASM sector. The increasing capitalisation of the sector from finance provided by a small class of "wealthy" Sierra Leoneans and foreign nationals, which has enabled them to mine previously inaccessible depths through the use of machines (Maconachie and Conteh, 2021; Conteh and Maconachie, 2021), has erroneously led officials to believe that traditional artisanal miners can also be supported to "graduate" to small-scale mining.

One senior government official's perception illustrates this conundrum further, when he noted that "one of the key issues is that artisanal miners have illegally graduated themselves to small-scale, by using machines to mine" (Interview with senior government officials, 22 July, 2022, Freetown). The implication here is that while artisanal miners can afford to mechanise their operations, they have simultaneously refused to engage in registered or formal small-scale mining operations. Thus, officials' failure to unpack the complex web of relationships within which rich and powerful Sierra Leoneans and foreign nationals are able to mask their involvement in the subsector through traditional miners, has led them to assume that artisanal miners can be "graduated". This is a view that dominated the process leading to the review of the Mines and Minerals Act of 2009 (Conteh and Maconachie, 2021). Regardless of jurisdictional or operational context, it is unlikely that "traditional" artisanal miners would be able to afford the setup costs associated with small-scale operations; one study in Guyana estimated set-up costs to average between "US \$1000 to over US\$50,000", with equipment estimated to cost US \$370,000 (Laing, 2023:442). As such, beyond training miners to adhere to environmentally safe and sustainable mining practices, little has been done by regulators to address their livelihood challenges resulting from depleted alluvial diamond deposits and the cost-of-living crisis (Interview with senior government officials, 22 July, 2022, Freetown).

In addressing the livelihood challenges faced by artisanal operators, the Ministries of Mines and Mineral Resources and Local Government have, however, previously taken a broader approach that incorporates environmentally sustainable mining training for miners, land reclamation and livelihoods diversification (Interview with community development worker, 13 July 2022, Freetown). Underpinned by a focus on land reclamation and livelihood diversification through miner–farmer cooperatives, this approach builds on a World Bank funded community driven pilot project – “Sierra Leone Artisanal Mining Community Development and Sustainable Livelihoods”, also known among communities in Kono as “Life After Diamonds” (Interview with community development worker, 13 July 2022, Freetown). Part of the project’s objectives included providing support for the “...transition into alternative and more sustainable livelihoods, especially in the agriculture sector, for diamond ASM communities” (Arrobas, 2015:1). Implemented across 120 communities in Kono district, a project document reported that an estimated 108 community subprojects were either completed, or on the verge of completion at project closure, benefiting over 11,000 beneficiaries (Arrobas, 2015: 1). During fieldwork in Nimikoro and Sandor Chiefdoms, beneficiaries including chiefs and youth, frequently pointed to the project’s positive outputs, including grain stores, markets, court barrays and palm oil plantations, when emphasising the value of the intervention (Interviews and focus group discussions, Nimikoro and Sandor Chiefdoms, January – April 2017).

Beyond project outputs, however, outcomes have been limited due in large part to the project’s disproportionate focus on traditional agriculture-based assets and a lack of a sustainability strategy. Civil society informants noted that whereas the project had potential for building ASM communities’ capacity to transition from mining to other livelihoods, “there was no sustainability plan”, to ensure that communities could continue to expand on the benefits after project closure (Interview with civil society activists, 18 July 2022, Koidu). A lack of effective community leadership and the absence of funds after project closure have negatively affected the sustainability of activities initiated by development partners (Donessouné et al, 2023). Moreover, given that Life After Diamonds was a pilot project, the inability of stakeholders to scale it up, has affected the sustainability of the results. With the departure of the project manager, the assets were handed over to chiefdom authorities, making them susceptible to elite capture (Focus group discussions in January – March, 2017, Nimikoro and Sandor Chiefdoms), as has been the case with other resources intended for the development of mining communities (Conteh and Maconachie, 2019; Dupuy, 2017; Fanthorpe and Gabelle, 2013).

More broadly, the focus on agriculture as a transition strategy for ASM operators is reflective of the recurring challenges faced by the government and development partners to promote agriculture as a poverty reduction strategy over the last two decades (International Fund for Agricultural Development, 2019). As has been the case elsewhere, agricultural productivity remains low, and the pace of poverty alleviation has been slow (Government of Sierra Leone, 2019). A recent report has noted that “the purchasing power of the average Sierra Leonean has depreciated rapidly, and as of “...December 2023, a daily labour wage purchases around 1.9kg of imported rice compared to 2.0 kg during the same period” in 2022 (World Food Programme, 2024:1). Even though the

country's new national development plan, with its flagship programme, "Feed Salone" (Bio, 2024), has prioritised mechanised rice production for national food security (Government of Sierra Leone, 2024), it is unclear what impact the renewed interest in agriculture will have on smallholder farmers, and in particular, miners who want to transition into food production.

Interviews and focus group discussions in Kono, however, provided useful insight into why previous attempts at promoting agriculture have been challenging. The government's neoliberal approach of privatising publicly procured agricultural equipment, such as tractors, over the last five years (Awoko, 2020), has left many smallholder farmers in Kono unable to use them, due to the high fees charged by centrally selected agents (Focus group discussion with Ministry of Agriculture staff, Koidu, 18 July 2022; Sesay, 2010). Thus, access to tractors has been largely restricted to a narrow group of influential and sometimes politically connected individuals, often with little previous experience in agriculture, illustrating the elite's resilience in capturing agricultural equipment and inputs (Fanthorpe et al, 2011; Massaquoi, 2013). In addition, while it is true that land is readily available in the eight non-diamondiferous Chiefdoms in Kono, there is a severe dearth of arable land in the six mining chiefdoms, given that most of their inland valley swamps (IVS) have been dug out by miners (Focus group discussion with Ministry of Agriculture staff, Koidu, 18 July 2022). Development partner-funded land restoration programmes have had limited short-term success (Foundation for Environmental Security and Sustainability, 2007; Dorodnykh, nd), because in the absence of sustainable funding and post-restoration land use strategies, "...people will again dig areas that have been restored" (Interview with Policy Advisor, Government of Sierra Leone, Freetown, 12 July 2022; Focus group discussion with Ministry of Agriculture staff, Koidu, 18 July 2022). The government has made a commitment to restoring five major mined out areas of the country in its new national development plan (Government of Sierra Leone, 2024), as it did in its previous plan (Government of Sierra Leone, 2019). However, given that it failed to meet its previous target, it is unclear what this plan will do differently, especially in a fiscally constrained space (International Monetary Fund, 2023).

In addition to the challenges that miners face in securing land and the agricultural equipment controlled by powerful local elite, they are also constrained by limited access to the agricultural extension services needed to boost productivity (Bateman, 2017). The recent policy shift intended to reduce the state's direct participation in agriculture, to one allowing it to play a facilitation role, has coincided with a recruitment freeze of agricultural extension workers (Focus group discussion with Ministry of Agriculture staff, Koidu, 18 July 2022). This has put even more pressure on the few officers in Kono, who must cover the entire district. One officer in the District Agriculture Office suggested that their numbers had decreased from "about 80, a few years back, to not more than 20" in 2022 (Focus group discussion with Ministry of Agriculture staff, Koidu, 18 July 2022). Another officer noted that he was required "to support farmers in hundreds of communities", but given the lack of transportation services, he was only able to "provide services for farmers close to the district head quarter of Koidu" (Focus group discussion with Ministry of Agriculture staff, Koidu, 18 July 2022). As such, those in remote areas have resorted to providing extension services for themselves, with the risk of decreased productivity. Despite the livelihood challenges resulting

from alluvial diamond depletion and the government and development partners' inability to effectively design and implement impactful and sustainable livelihood diversification and transition programmes, Kono has immense potential for the development and expansion of agro-based industries. It is to this potential, and one successful example of youth resourcefulness and resilience, that we now turn to in the next section.

Opportunities for successful livelihoods transition

Since the discovery of diamonds in Kono in the 1930s, ASM has been a vital livelihood activity in Sierra Leone's rural economy in the Eastern Province. However, historically, the ASM sector has largely remained segregated from large-scale diamond mining. The large-scale sector has continued to operate as an economic activity which has been detached and removed from the local economy, mirroring other cases of other extractive enclaves across Africa (see Ferguson, 2005; Lesutis, 2019). Indeed, the district's largest industrial diamond mine – Koidu Limited – has operated for much of its existence behind unscalable walls, with the majority of its operating supplies, including food for its work staff, being imported from external suppliers as far away as South Africa (Interview with civil society activists, 18 July 2022, Koidu; Focus group discussion Yormata Youth Farmers Association, 19 July 2022, Tombodu). Recent changes in law and policy, however, now oblige companies to promote local community and economic development (Nwapi, 2017; Conteh and Maconachie, 2019; Pijpers, 2024; Dupuy, 2014), a move that could potentially offer significant opportunities for miners seeking to transition out of ASM and into agriculture. Two policies, in particular, have significant potential to catalyse this transition: (1) mining community development agreements (CDA), which mediate company and host-community relations (Conteh and Maconachie, 2019; Nwapi, 2017; Dupuy, 2014); and (2) local content provisions in law and policy, which require mining companies to source goods and services from qualified local suppliers (Ba and Jacquet, 2022).

During our fieldwork in 2022, civil society activists cited the CDA process as a potential source of finance for agriculture and the sustainable transition from mining given the lack of critical funding available to miners (Interview with civil society activists, 18 July 2022, Koidu). The implication here is that companies' CDA contributions, which under the Mines and Minerals Development Act 2023 represent at least one percent of their annual turnover, could in part be used to support miners making the transition out of ASM; for Koidu Limited, the company's CDA contribution for 2017 was US\$ 198,000 (Conteh and Maconachie, 2019). This view, however, did not seem to enjoy widespread support from local elites. For example, the erstwhile chairperson of the CDA argued that the funds could not be used for such a purpose, although he agreed that there were no provisions in the Model CDA developed in 2014 that excluded such investments (Interview former CDA chairperson, 19 July 2022, Koidu). The disagreement over whether CDA funds could be used to support livelihood transitions is, however, a minor one as stakeholders have generally not been able to agree on how to utilise the funds. This has resulted in protracted contestations, and the funds have become stuck in bank accounts (Conteh and Maconachie, 2019). As is the case with other resource revenue redistribution schemes such as the DACDF, stakeholders' inability to utilise CDA funds in innovative ways, illustrates the need for more

dynamic policy thinking processes and outcomes. New policies are urgently needed to transcend initial programme design, ensure safeguards are put in place to engender innovative thinking, and mitigate the impact of elite capture and vested interests on community development.

The second opportunity for livelihood transition in mining areas is underpinned by Sierra Leone's Local Content Policy 2012 and Local Content Agency Act 2016, both of which require mining companies to prioritise goods and services produced in Sierra Leone if they meet international standards (Ba and Jacquet, 2022). Despite this, few small and medium enterprises (SMEs) in the country can meet this requirement (JenMAA Data Management Consultants, 2019). This means that only a small group of companies, mostly from outside Kono, are able to leverage the millions of dollars of companies' mandatory local tenders. In 2020 and 2021, the total value of local procurement of three large-scale mining companies in Kono was US\$ 22.7 and US\$ 42.9 million dollars respectively (National Minerals Agency 2021), presenting significant opportunities from which emerging businesses in Kono could potentially benefit.

During our fieldwork in July 2022 in Kono, we identified one youth-led business – the Yormata Youth Farmers Association – which though not firmly established, had demonstrated significant levels of resourcefulness and resilience. Perhaps more significantly, however, there was a determination amongst leaders to leverage opportunities provided by the local content policy and law. Operating in the small town of Tombodu in Kamara Chiefdom, 42 miles outside of Koidu, the association was established in 2016 by youths with varying backgrounds, including from ASM, and motor taxi and bike riding (Focus group discussion Yormata Youth Farmers Association, 19 July 2022, Tombodu). Realising the challenges in acquiring land for agriculture in Koidu and its environs, the association members requested land from the Paramount Chief of Kamara Chiefdom, who provided them with 38 acres (5.4 hectares) (Focus group discussion Yormata Youth Farmers Association, 19 July 2022, Tombodu). This case provides a rare example of urban-rural migration by youth in search of opportunities, in a country where poverty has been declining faster in urban centres than in rural areas (World Bank, 2022b). As one association member noted, “our dreams cannot succeed in the city” (Focus group discussion Yormata Youth Farmers Association, 19 July 2022, Tombodu), echoing the limited livelihood opportunities in Koidu.

Moreover, despite a relative lack of formal education, the Yormata youth have been quick to embrace the value of research and evidence-based planning, attracting investment and support. As such, even before engaging the Chief, they had conducted research on one of the large-scale mining companies and Kono District's poultry dietary needs, which they used to convince him. The Chief was so impressed by the results of the research and the pace of the youth in clearing the land, that he donated startup capital of US\$ 3,000, which they used to construct and stock the first building of their poultry (Focus group discussion Yormata Youth Farmers Association, 19 July 2022, Tombodu). Although the Chieftaincy in Sierra Leone has a chequered history of being repressive, and has been criticised as being exploitative and contributing to the country's civil war (Richards, 1996; 2008), the Chief's gesture in part reflects the changing role of traditional authority in the postwar era, especially among a younger generation of traditional rulers who are keen to portray themselves as being more progressive (Conteh, 2014).

At the time of fieldwork, the Yormata Youth Farmers Association had undertaken research to suggest that Sierra Leone was importing an estimated US\$ 40 million worth of poultry products per annum, with Kono's needs, driven mostly by the presence and operations of the mining companies, to be in the neighbourhood of US\$ 1 million per year (Focus group discussion, Yormata Youth Farmers Association, 19 July 2022, Tombodu). Their disaggregated data also revealed that one of the companies' workforces was consuming an estimated US\$ 15,000 worth of poultry products per month, suggesting a significant business opportunity. While one of the district's largest mining companies had approached them to supply it with an estimated 2000 eggs and 50 chickens per day, the association's capacity to do so remained constrained. To meet this quota, one member noted, the association would need "at least 5000 layers and 3000 broilers for constant production every month" (Focus group discussion, Yormata Youth Farmers Association, 19 July 2022, Tombodu). Indeed, the progress of the association would have been accelerated had it not been for the major set-backs during the COVID-19 pandemic, when they "lost 3,000 birds in just three days" (Focus group discussion, Yormata Youth Farmers Association, 19 July 2022, Tombodu). Nonetheless, as with all aspects of their operations, the youth noted that they were not deterred by the constraints they faced, and they always tried to see "solutions not challenges". For example, to prevent future disasters in their poultry business, they were building an onsite cold-room to store poultry vaccines, which were unobtainable during the pandemic and responsible for the massive loss of chickens.

The success of the Yormata Youth Farmers Association has attracted the interest and attention of a number of development partners, offering to either support their business or use it as a model and training centre. For example, the organisation's partnership with the UN Food and Agricultural Organisation led to the construction of a second building stocked with 500 chicks and start up feed in 2017. Further, within two years of the association's establishment, they received an additional US\$ 25,000 grant from the World Bank funded Smallholder Commercialization and Agribusiness Development Project, which they used to expand their "poultry capacity from 1,000 to 2,000 chicks, as well as construct a toilet and water well" (Focus group discussion, Yormata Youth Farmers Association, 19 July 2022, Tombodu). The involvement of some development partners has, however, proved controversial, as some donors have been criticised as being "success stealers" (Interview with Deputy Chairman Kono District Council 18 July 2022, Koidu; Focus group discussion, Yormata Youth Farmers Association, 19 July 2022, Tombodu), implying that they are only interested in supporting youth-led businesses that are already successful, and not those struggling to emerge. This has fostered a highly critical and suspicious approach among the youth, such that when one international partner approached them to be enlisted as one of their community-based organisations "in return for tricycles", their offer was rejected on the grounds that the organisation really "needed tractors" (Focus group discussion, Yormata Youth Farmers Association, 19 July 2022, Tombodu). As one of the youths noted, "for any support that is not aligned with our ambition and vision, we say thank you, but no thank you" (Focus group discussion, Yormata Youth Farmers Association, 19 July 2022, Tombodu).

Conclusion

After more than 80 years of diamond mining in Sierra Leone, ASM communities face a crisis of livelihoods and existence, as alluvial deposits have become progressively depleted. As this paper has illustrated, miners and all those dependent on mining who wish to re-orient their livelihoods, are “stuck in transition”; they are neither gainfully engaged in mining, nor do they have meaningful opportunities in other livelihood activities. The current state of affairs in Kono is deeply political, given the extremely exploitative mining policies pursued. This trajectory was firmly established by the colonial state to channel benefits to the metropolitan power in Britain, and it was later re-invented by post-independence rulers, under whom revenues from the mines were routinely personalised (Reno, 1995). The current livelihood challenges faced by communities in Kono reflect a failure of governance and an inability of the government and other stakeholders along the ASM value chain to protect miners’ interests, and to prepare for ‘life after diamonds’.

The failure to purposely and effectively link global demand for diamonds and rapidly changing modes of production in ASM with pro-active economic and social policies, means that the socioeconomic configurations underpinning post-mining communities have not been carefully considered. Where attempts have been made to redistribute some of the benefits of diamonds to communities of origin, initiatives such as the DACDF or the CDAs have either been delayed or poorly designed and implemented. In most cases, redistributed resources been captured by powerful elites. But on the other hand, programmes exhibiting promise, such as Life After Diamonds, have been short-lived, with project communities being unable to build and expand upon its legacies. This echoes an all-too-familiar challenge associated more generally with community development aid, in that, it is often either too little, or unsustainable. The livelihood challenges that current inhabitants of Kono face are enormous and will require substantial levels of investment to reclaim thousands of hectares of mined out lands, improve soil quality, build capacity in communities and provide financial support to help miners and mining dependents make a meaningful transition to more sustainable livelihoods.

Although communities in Kono will continue to make claims for support from the government, industry and development partners, who have, in many respects, contributed to their worsening livelihood challenges, they risk falling into the trap of “extraversion”, an approach that has previously shaped Sierra Leoneans’ reaction to crisis during the civil war and the Ebola epidemic (Harris and Conteh, 2020). As the case of the Yormata Youth Farmers clearly illustrates, regardless of the complex challenges that communities face, if the right attitude and local support from philanthropists are in place, miners can be supported to successfully pursue other sustainable livelihoods. This, however, will require them to abandon previously held perceptions and lived realities of “getting rich quickly”, a narrative that has shaped artisanal diamond mining in Kono for many years. It will also require them to learn positive lessons from successful entrepreneurial endeavours, such as that of the Yormata Youth, as well as those from other unsuccessful business development attempts.

Current trends to re-connect large-scale ‘enclave’ mining operations to the local economy, provide new opportunities for emerging grassroots businesses, as we have seen with the case of the Yormata Youth Farmers Association. The extent to which these linkages can be deepened

however, will depend on the capacity and willingness of regulators to enforce local content laws on the one hand, while building the capacities of businesses in Kono to participate in mining companies' supply chains, on the other. Given the uneven impact of mining, the government may wish to experiment with a more nuanced application of local content laws and policies, to ensure that among Sierra Leonean businesses, mining companies are able to prioritise those from Kono if they meet agreed quality thresholds. This development would most certainly require extensive policy consultations and potential changes to local content and mining laws, with the possibility of ensuring other communities affected by mining prepare for life after mining.

Finally, if the mistakes made over the past 80 years in Kono are to be avoided in future, and the ensuing adverse impacts on mining communities are to be tackled, policy makers and host communities must think innovatively about more sustainable ways of sharing the benefits from the ASM sector. The colonial logic that has informed rural land rights and disenfranchised communities from mineral ownership, must be re-examined. The idea that communities disproportionately impacted by mining operations can own (surface) land, but not (sub-surface) minerals, urgently needs to be re-visited in policy debates, and this can no longer be taken for granted. Co-management proposals for communities to own shares in mining companies should be explored, given the potential to improve company–host community relations and sustainability. In addition, the government and local stakeholders should expand the scope within which the CDA was originally conceived. This will address the irony of Chiefdoms having wealth stuck in bank accounts, when young people are struggling to raise capital because of persistent contestations among stakeholders.

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