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Strengthening the governance of environmental and social impacts in formal small-scale gold mining operations in Uganda

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ABSTRACT

We consider the formal small-scale gold mining (SSGM) sector in Uganda, examining how governance could be improved to reduce social and environmental impacts and increase benefits to local communities. Artisanal and small-scale mining (ASM) is an important livelihood strategy across Sub-Saharan Africa, especially for gold. In Uganda, ASM mostly occurs by small formalised and regulated companies and cooperatives (SSGM). Nevertheless, SSGM (like ASM) is still associated with environmental and social harm. Although Environmental and Social Impact Assessments (ESIAs) are prepared to mitigate risks from mining, their effectiveness in SSGM is limited. Based on qualitative field research in Uganda (community group discussions, expert interviews, observations) and by analysing eight ESIAs for SSGM projects, we consider how weaknesses in policy, governance, and institutional capacity undermine the 'do no harm' (social safeguard) and 'do good' (social investment, community development, benefit sharing) intentions of ESIA. We found that fragmented institutional responsibilities, inadequate community engagement, weak enforcement, and marginalisation of social considerations in ESIA contribute to physical displacement, economic displacement, disruption to people's livelihoods, health risks, gender-based violence and harassment (GBVH), and social conflict. These negative outcomes are not isolated failures but are indicative of systemic flaws in the governance of SSGM. We provide recommendations to strengthen ESIA as a governance tool, including: enhance community participation; integrate livelihood and gender considerations into ESIA and policy; improve coordination; and implement adaptive management. Strengthening ESIA and governance arrangements are essential if the SSGM sector is to contribute to equitable and sustainable development in Sub-Saharan Africa.

1. Introduction

Artisanal and small-scale mining (ASM) plays a critical role in the global mineral supply and is a significant livelihood in rural areas, especially in Sub-Saharan Africa (Hilson, 2016; IGF, 2017; World Bank, 2024a). Globally, ASM engages around seven times more people than industrial mining (McKay, 2025). ASM is a heterogeneous and complex phenomenon that is generally often defined only in terms of being something other than corporate industrial mining (Hilson et al., 2017). However, ASM varies in scale from individuals or families working in an informal ad hoc fashion through to organised professional, formalized and regulated small-scale cooperatives and companies (McQuilken and Hilson, 2018; World Bank, 2023; Donkor et al., 2025; McKay, 2025).

Our aim in this exploratory paper is to consider the consequences of small-scale gold mining (SSGM) undertaken by small companies and cooperatives in Uganda, a country where SSGM is formally acknowledged, regulated and governed. We discuss the key social issues arising from the planning, implementation, governance and community engagement processes associated with the governance of SSGM. We are specifically interested in the environmental and social impacts arising from SSGM practice, and we reflect on how the governance of SSGM could be improved to reduce negative impacts and enhance benefits. Our research methods included interviews with experts, group discussions with affected communities, a comprehensive literature review on the social impacts of SSGM and ASM, a review of Environmental and Social Impact Assessment (ESIA) reports undertaken for SSGM projects, field observations, and reflections on our experiences and understandings as leading ESIA researchers.

Despite the social and environmental concerns SSGM raises, it has become a vital engine for local economic development in Sub-Saharan

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Africa (Brown, 2020; Hilson, 2020; Hilson et al., 2025). The rapid growth of SSGM has spurred efforts to address the social risks associated with it. The Ugandan regulations about SSGM include requiring ESIAs for SSGM projects, however these ESIAs are often inadequate. Despite increasing research about SSGM, its social, cultural, psychosocial and gendered impacts remain understudied and are inadequately managed and governed (Hilson, 2020; Hilson and Maconachie, 2020). While the physical and economic displacement of local people and potential for conflict are generally acknowledged by the Ugandan government as likely social impacts (although they are inadequately addressed), many other social impacts (especially cumulative impacts) are poorly understood, including those relating to increasing inequality, loss of traditional customs and practices, diminished importance of local traditional institutions, declining use of local languages, and the marginalization of youth (Buss et al., 2019; Hilson and Maconachie, 2020; Rugadya, 2020; Gerrits, 2024). The seriousness of these issues suggest that mining is much more than just a livelihood option creating economic development, it has profound consequences that turn it into a community transformation process (with many negative consequences). Research into the effectiveness of ESIAs and Resettlement Action Plans, especially in relation to SSGM, is scarce, hindering the appropriate governance of SSGM. Thus, our paper with its recommendations for how the governance of SSGM can be improved is very significant and timely.

2. Small-scale gold mining in Uganda

Artisanal and small-scale mining (ASM) is an important livelihood strategy across Sub-Saharan Africa. Artisanal and small-scale gold mining (ASGM) is especially significant. In Uganda, most ASGM occurs by regulated small companies and cooperatives, which is why we study SSGM (rather than ASGM). ASM and SSGM have become key livelihood activities in rural Uganda, directly engaging an estimated 250,000 individuals and supporting many times more people through indirect economic linkages (TrustAfrica, 2024). To highlight its significance, ASGM (including SSGM) accounts for over 90 % of Uganda's gold production (planetGOLD Uganda, 2024). In response to rising global gold prices and declining agricultural productivity, ASGM and SSGM have expanded significantly over the past two decades (Hilson and Maconachie, 2020; Ladewig et al., 2025).

The informal ASGM sector is characterised by limited access to finance and technology, rudimentary extraction techniques, and widespread use of hazardous substances such as mercury (Serwajja and Mukwaya, 2021; UNDP, 2024). The informality of ASGM exacerbates environmental degradation, including soil erosion, deforestation and water contamination, and leads to the displacement of smallholder farmers and land use conflicts (Rugadya, 2020; Ladewig et al., 2025). Because of these issues, the Ugandan government and other organisations have sought to regulate ASM, including by 'formalization' (Hilson et al., 2022; Fisher, 2023; World Bank, 2024b; IGF, 2025), thus a strong SSGM sector has emerged.

Although Uganda's Mines and Minerals Act (Government of Uganda, 2022) regulates SSGM through licensing, registration of cooperatives, and various environmental and social safeguards, implementation of the provisions in the Act remains weak due to corruption, limited institutional capacity, and the exclusion of local people and community leaders from planning and decision-making processes (Kahangirwe, 2011; Ogwang et al., 2018, 2019; Kahangirwe and Vanclay, 2022; Tingini and Eniowo, 2025). Achieving sustainable results from SSGM requires not only stronger governance, but also inclusive policies that integrate environmental health, recognise small-scale mining workers' rights, and ensure equitable benefit sharing (Hilson et al., 2017; RGI, 2024; World Bank, 2024a; Perks, 2025).

In general, development projects (including for SSGM) are expected to minimize harm and generate benefits for the local community and public at large. This is normally done by requiring ESIAs to be undertaken and implementing monitoring and mitigation plans (Gulakov and Vanclay, 2024). Where displacement of people is likely to occur, Resettlement Action Plans and/or Livelihood Restoration/Enhancement Plans are also expected (Vanclay, 2017). The effective planning and implementation of projects requires careful consideration of the full range of social risks (Vanclay, 2002), including any physical and economic displacement of people, livelihood disruption, the adequacy of compensation, community fragmentation, and the potential for project-induced in-migration (Vanclay, 2017; Smyth and Vanclay, 2017; World Bank, 2023, Gerrits, 2024). Despite established regulatory frameworks and guidelines, inconsistent application of them leads to community wellbeing being undermined, which highlights the need for stronger governance, more meaningful community engagement, and increased use of adaptive social management practices and frameworks (van der Ploeg and Vanclay, 2018; Kahangirwe and Vanclay, 2024; World Bank, 2024a; Smyth et al., 2025).

3. Methodology

We examined the environmental and social impacts, and governance issues associated with SSGM projects in Uganda. A multiple methods approach was used. We undertook a literature review of the SSGM and ASM literature, field observations, interviews with experts, group discussions with affected communities, and we analysed ESIA reports undertaken for SSGM projects. Data collection was conducted between September 2024 and August 2025. The field observations and group discussions were carried out at SSGM sites in the Kassanda District of Uganda (see Fig. 1). All ESIA reports about SSGM that were publicly available from the Ministry of Energy and Mineral Development were analysed (8 in total). Fig. 1 indicates the locations where the SSGM projects associated with these ESIA reports were located. It also indicates current gold mining areas in Uganda. We believe that our research reasonably represents SSGM in Uganda and that our analysis is likely to be generally indicative of SSGM dynamics across much of Sub-Saharan Africa.

The lead author conducted 50 in-person interviews with experts, including ESIA consultants, national and local government officials, regulators, Ugandan academics interested in SSGM or related topics, mining company representatives, and members of small-scale mining associations, companies and cooperatives (see Table 1 for a description of interviewees). The expert interviews were done in English (the official language of Uganda). For these interviews, hand written notes were taken on a paper notebook, which were later transcribed into a Word document. Using our professional networks and a snowballing approach, relevant interviewees were invited to participate based on their expertise and professional experience. During the in-person interviews, which generally took between 25 and 45 min, the lead author establish rapport with the interviewees and made them feel comfortable, which helped generate forthright and insightful responses, especially regarding some of the sensitive topics related to SSGM, e.g. land-take, compensation, livelihood disruption, and health & safety.

The interviews generally addressed the following topics:

- What is your role in the planning and development of SSGM sector?
- What are the social benefits associated with SSGM projects?
- What are the key social risks and challenges experienced during planning, construction and operation of the infrastructure for the SSGM projects in Uganda?
- What are the causes of those social risks and challenges?
- Are the social risks and challenges managed appropriately?
- What measures have been put in place to address potential risks or negative impacts while planning and implementing SSGM projects?
- What mitigation or management strategies could be adopted while initiating and executing SSGM infrastructure projects to reduce socio-economic risks?

Also, 20 group discussions (with 10 to 15 participants per group at

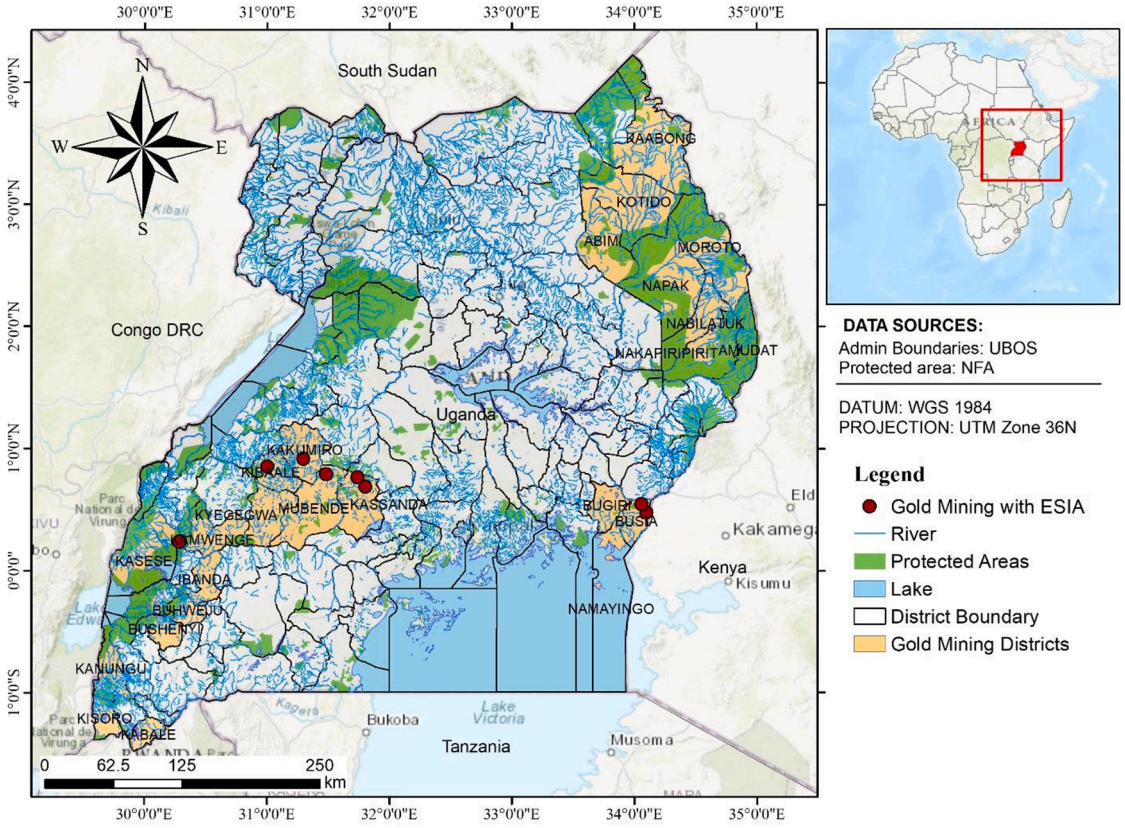

Fig. 1. Indication of where small-scale mining projects are located in Uganda.
Source: Primary author in November 2025 using data sources from the Uganda Bureau of Statistics.

Table 1
Overview of the 50 expert interviews.

Level	Institutional setting	Number of interviewees by category (n)
National level	• Government ministries e.g., Ministry of Energy and Mineral Development, Ministry of Lands, Housing and Urban Development • Regulators such as the National Environmental Management Agency, Ministry of Water and Environment • Academic institutions • ESIA consultants • Private companies • Associations and civil society organisations	Civil servants (5) Academia (2) Consultants (7) Small mining companies (8) Mining associations (6) Civil Society (1)
Local level	• Local government departments e.g., natural resource management, environment, community development, labour, water, agriculture • Political representatives at various levels • Private companies • Associations and civil society organisations	Civil servants (3) Community representatives (4) small mining companies (7) Mining associations (5) Civil Society (2)

any time) were conducted, involving a total of approximately 300 project-affected individuals, comprising smallholder farmers, SSGM workers, and local traders. These group discussions were conducted in SSGM locations in the Kassanda District, and were purposively selected based on three criteria: (1) potential for significant social and environmental impacts due to close proximity of SSGM to populated areas; (2) SSGM taking place on agricultural land and/or ecologically sensitive zones; and (3) ease of access by the lead author. Some of these discussions were in English, although most were in the local languages, Runyankore or Luganda (both of which are spoken by the lead author). Because of the SSGM context, these group interviews had to be impromptu, with participants arriving and departing as they wished. Participants stayed only for as long as they maintained interest. The participants primarily comprised SSGM workers and small-scale business operators in the project area, with most being women or young adults. The lead author took notes on paper during these discussions. Key points were later transferred into a Word document.

For the interviews and group discussions, the principles of ethical social research (Vanclay et al., 2013) were observed, and ethical clearance was obtained from the University of Groningen. Because most people in Uganda are averse to signing official forms, informed consent was obtained verbally before proceeding with any interview or group discussion, with the signing of consent forms being optional. Given the sensitivity of the topic and potential risk of harm to interviewees, as a form of protection, the institutional Ethics Committee required that all hand-written notebooks be destroyed after transcription.

A targeted literature review was undertaken of the academic literature and other documents addressing the social impacts of ASM and SSGM, especially in a sub-Saharan context. Searching was done via Scopus, Google Scholar and Google, and by following-up on any leads or key references mentioned in the literature reviewed.

The 8 ESIA reports were read carefully, with recurring themes identified. The hand-written notes from the 50 expert interviews and 20 group discussions were transcribed, coded, and thematically analyzed to capture diverse perspectives on livelihood disruption, land use and community wellbeing. The interview questions guided the coding process, with responses grouped into thematic categories such as roles in SSGM planning, social benefits, risks and challenges, causes, management practices, and mitigation strategies.

4. Results and discussion: governance and social impacts in small-scale gold mining

4.1. Roles of the various actors in planning and development in the SSGM sector

During the expert interviews, the roles played by the various actors were explained, and it was considered that they had crucial and interconnecting functions. The Ministry of Energy and Mineral Development was responsible for creating and enforcing regulations that promote formalization of ASM, environmental protection, and occupational health & safety, while also ensuring equitable rights to gold mining. Local governments, authorities and community leaders have responsibility to facilitate community engagement, address conflicts, and undertake appropriate land-use planning to balance gold mining with other livelihood activities and housing. However, some experts stated that local governments feel they do not get a fair share of mining royalties and taxes from mining operations undertaken in their district, leaving them under-resourced despite having to bear many financial, environmental and social costs created by mining. The interviewees indicated that local governments generally lack the technical capacity to properly enforce regulations and monitor projects, have unclear and potentially overlapping responsibilities, and experience tensions with national authorities, including in relation to conflicting regulations. These tensions undermine good governance, appropriate regulation and oversight, thus enabling illegal mining operations to occur, leading to social conflict, and to a weak or non-existent social licence to operate for SSGM, mining in general, and government at all levels.

Various associations and cooperatives seek to represent miners' interests, advocate for fair policies, and promote responsible mining practices. Civil society and non-governmental organisations have also assisted by organising capacity building programs, holding awareness-raising campaigns, and providing technical support targeting SSGM workers and operators in an attempt to increase sustainability in SSGM (e.g. to reduce mercury use). However, several experts stated that some government officials and others consider the SSGM cooperatives and associations to be nothing more than 'bureaucratic entities' that seek to advance the self-interests of certain individuals rather than genuinely represent ordinary ASM/SSGM miners. The SSGM cooperatives and associations are also seen as 'weapons of political power' that politicians wield when it suits them. There was scepticism about whether the civil society organisations truly represent local communities, or whether they are influenced by external actors and agendas. Potentially, these perceptions have resulted in limited support for SSGM associations and cooperatives, and has arguably reduced the role and influence these entities potentially could have in the regulation and governance of SSGM. This was considered to be a lost opportunity, as stated by an expert from local government (slightly modified):

> *If the associations and cooperatives were meaningfully engaged in the development of legislation, they would contribute towards shaping policies that support health and safety, and they would co-develop solutions with the government to the challenges they face, such as exploitation by middlemen, access to land, etc.*

The private sector, mining companies and development partners have provided funding, infrastructure, and market access to enhance productivity and social wellbeing. Research institutions and academia have supported the sector by developing cleaner mining technologies, including for ASM/SSGM. Altogether, there is concerted effort towards ensuring SSGM contributes to sustainable development while minimizing social and environmental harms. However, several experts stated they were uncertain about the extent to which academia had contributed towards appropriate data collection or to evidence-based policy making. It was stated by an academic that (slightly modified):

> *There is a bad mindset* [amongst many in the industry] *that academics only produce theory, and not any usable policy-related data or information. Yet academic research can inform how to regulate informal mining, and how the big 'elephant in the room' called 'royalties' could work* [better]. … *Academic insights could play a vital role in shaping the policies around gold mining, but they are never involved or consulted … they are left out of the discussions.*

Another academic stated that (slightly modified):

> *The drafters of the recently approved Mining and Minerals Act did not reach out to many of us in universities, especially those of us from social science departments, but only consulted those working on environmental sciences.* … [However] *There are evident social risks – such as child labour and health risks – in small-scale mining, research topics that our students have studied extensively, and this data could have informed the regulations and made them more evidence-based rather than politically reactive.*

Our findings indicate that inclusive community engagement can contribute to socially sustainable small-scale mining by integrating local voices, concerns and priorities into project management at all stages of the project lifecycle. Having clearer roles and responsibilities in the governance of SSGM would enhance sustainability and would help address social challenges by ensuring transparency, accountability, and inclusive benefit sharing. When governments, companies, and communities have clearly defined duties that they actually undertake, this reduces conflict, builds trust, contributes to the long-term wellbeing of local communities, and enhances the social sustainability of mining (Hansen et al., 2016; Joyce et al., 2018; Ogwang and Vanclay, 2021; Kowszyk et al., 2023, 2025).

4.2. Benefits associated with SSGM projects

In recent decades, research into rural livelihoods has generally shifted away from encouraging smallholder agriculture and non-agricultural livelihoods of uncertain or low return towards encouraging stable, higher-return activities including wage employment and engaging in emerging rural enterprises (Alobo Loison, 2015). There has also been a period of experimentation with rural livelihoods (Bryceson and Jønsson, 2010; Esteves et al., 2025). Many rural households have now diversified their livelihood strategies to include informal trade, wage labour and artisanal mining. Some African countries have become heavily reliant on mineral exports, with governments viewing ASM and SSGM as a means of boosting rural employment, reducing poverty and generating foreign exchange. Consequently, they have provided considerable space for small-scale mining activities (Maconachie and Hilson, 2011; Fisher, 2023, World Bank, 2023, 2024a).

Some 250,000 people across all ages are now earning a livelihood in ASM and SSGM in Uganda (TrustAfrica, 2024; IGF, 2025). SSGM is perceived to provide far higher earnings than people could get from other activities; and thus leads to people moving away from the security of their home location to known gold mining areas. Although successful SSGM requires networking and technical mining skills, these are generally acquired informally 'on the job' (World Bank, 2023; Adranyi et al., 2024). Collectively, SSGM is a major employer and provides much livelihood support for families (as was established during the group discussions). However, the lives of local people and host communities have become much affected by the many negative social, cultural, economic and environmental consequences of SSGM (Fisher et al., 2023). In addition to the information gained from our interviews (presented below), by drawing on the 8 ESIA reports and our literature review, we established that SSGM activities are also likely to provide a wide range of benefits, both in the short and long-term (see Box 1):

Box 1
Benefits arising from small-scale gold mining projects.

Analysis of ESIA Reports	Literature Review
Creates employment and business opportunities, increases incomes and wealth	Creates jobs and employment opportunities
Source of revenue to the government from taxes, permits and licenses	Stimulates local economic growth
Source of revenue to utility companies and other service providers	Enhances national income and enhances livelihoods for millions of people worldwide
Stimulates economic growth and increases local wages, reducing poverty among local people	Contributes to GDP and export earnings
Stimulates the local and regional economy	Plays a vital role in poverty alleviation
Enhances investment opportunities	Increases access to education, healthcare & other services because SSGM workers and their families benefit from increased income
Contributes to improved infrastructure e.g., improved roads, electricity supply	Empowers marginalised groups to participate in the workforce and gain economic independence
Enhances skills development among workers	Fosters social interaction & community building among SSGM workers and the broader community
Improves workers' living conditions such as housing due to increased income	Is a supply of raw material for ornament makers
	Facilitates economic diversification

Key Sources used to compile Box 1:
ESIAs: Burlcore, 2025; Desert Park Miners, 2025a, 2025b; Oumart, 2023; Shining Mines, 2022; Seven Hills, 2022; Pinnacle Enviro Consult, 2017; Universal Flow, 2025.
LITERATURE: Hilson and Potter, 2003; Bryceson and Jønsson, 2010; Hilson, 2010; Nyame and Grant, 2014; Alobo Loison, 2015; Eduful et al., 2020; Fisher et al., 2023; Ofosu and Sarpong, 2023; World Bank, 2023, 2024a, 2024b; Adranyi et al., 2024; Baddianaah, 2024; Haroon and Hayyat, 2025; Arthur-Holmes and Yeboah, 2025.

4.3. Social risks associated with SSGM projects

Despite the many papers arguing for the appropriateness of SSGM as a national economic strategy (see Box 1), the negative environmental, social and economic implications have not always been fully considered (Haroon and Hayyat, 2025; Tseer et al., 2025; Adom, 2026). In our research, we found that SSGM does have various negative social impacts, including: physical displacement of people and communities; economic displacement; land and resource conflicts; disruption to traditional ways of life; exploitation of workers; increased crime (e.g. due to drug abuse, youth unemployment, school dropouts, family disorganisation, and prostitution); contamination of water and soil; health issues and associated medical expenses; inadequate housing; insecurity; and community health, safety and security issues. In some countries, income from SSGM has supported armed conflict and human trafficking (UNODC, 2024). If the negative impacts are not adequately addressed, an increase in SSGM will also increase social risks. For SSGM projects to be developed responsibly, they have to effectively engage with local communities and not antagonize them (Kahangirwe and Vanclay, 2024; Kahangirwe et al., 2025). Getting a 'social licence to operate' for SSGM projects and the mining industry as a whole is essential (Vanclay and Hanna, 2019; Ogwang and Vanclay, 2021). Below, we discuss some of the key issues in more detail.

4.3.1. Corruption, conflict over resources, and land rights disputes

As reported in the group discussions, SSGM's demand for land, water (especially at gold washing stations) and other resources has resulted in conflicts with local communities that rely on those resources for their own livelihoods. These conflicts generally stem from inadequate formalization and the lack of clear property rights (Ladewig et al., 2025). The lure of gold has sparked conflicts over land ownership and usage rights within families and between SSGM companies and local people, especially where ancestral lands and cultural heritage have been affected. One interviewee stated that violent conflicts had led to injuries requiring the hospitalisation of some people. There were also concerns about the exploitation of SSGM workers and community members by middlemen, local elites and security forces operating around mining sites.

The illegal trading of SSGM/ASM-produced gold (including smuggling across the border) has deprived the government of revenue (Hilson and Potter, 2003; Hilson et al., 2017; Adom and Simatele, 2026) because it bypasses the official channels where production is recorded and taxes, export duties and royalties are levied and collected. The illegal trading and smuggling of gold happens on a large scale, frequently involving high-level corruption, including by government officials (Global Witness, 2017). Demands for bribes and other forms of extortion by authorities were mentioned during the group discussions as hindering the ability of SSGM companies to operate legally. This extortion and other forms of corruption creates conflicts, particularly at licensing offices and mining sites where power imbalances allow officials to exploit SSGM workers through various rent-seeking practices. Conflicts have eroded trust between communities, government and SSGM companies.

People interviewed stated that SSGM was occurring on land where multiple, sometimes conflicting, land tenure systems operate. While some individuals and companies have formal land titles, customary land rights held by communities also apply in many locations. Furthermore, regardless of surface rights, the Ugandan government retains all subsurface mineral rights (Government of Uganda, 2022). Although unconfirmed, it was stated in the group discussions that certain people ostensibly associated with various government entities (including the police, military, anti-corruption unit, and the specialized mineral protection police unit) were involved in inappropriate land dealings.

4.3.2. Displacement and disrupted livelihoods

It was reported in the interviews and group discussions that SSGM had led to the forced displacement of communities from their ancestral lands, disrupting their livelihoods, agricultural activities and cultural practices. However, several interviewees suggested that some instances of displacement were corrupt, with various national and local elites influencing land allocation, enforcement actions and licensing decisions to serve their own interests.

Recent scholarship on project-induced displacement in Uganda and elsewhere highlights the profound impacts of displacement on the lives of displaced people (Vanclay, 2017; Ogwang and Vanclay, 2021; Twinamasiko and Faria, 2025). However, "often displaced people are framed as passive and hopeless victims of displacement" (Gukurume and Tombindo, 2023, p.1) rather than be seen as active agents who develop their own coping strategies and seek alternative livelihood opportunities. This negative framing obscures their resilience and agency. NGOs, scholars and activists have argued that displacement caused by development projects must be considered from a human rights-based approach (Esteves et al., 2017; van der Ploeg and Vanclay, 2017; Vanclay and Hanna, 2019; Smyth et al., 2025). A human rights-based approach is critical to ensuring that displacement and associated disruption to livelihoods does not translate into long-term vulnerability and marginalisation (van der Ploeg and Vanclay, 2018).

4.3.3. Disruption to cultural norms and social instability

The loss of traditional ways of life was reported by several interviewees and was mentioned in most group discussions. Mining operations were believed have disrupted the cultural and spiritual connection of communities to their environment, affecting their traditions and way of life, something that has also been mentioned in the literature (Kahangirwe et al., 2025; Kowszyk et al., 2025). This loss of tradition has promoted drug abuse, youth unemployment, school dropouts, family disorganisation, and prostitution. Disregard for local communities' cultural and spiritual values fuels social unrest and increases the crime rate. In some cases, gold mining has been linked to human trafficking, highlighting the severe social consequences of the sector (UNODC, 2024), with vulnerable workers, women and children being deceived and/or coerced into exploitative labour or sexual

exploitation in mining communities. The weakening of social structures has affected community bonds and social cohesion (Jønsson and Bryceson, 2009; Ogwang and Vanclay, 2021; Kahangirwe and Vanclay, 2024).

4.3.4. Impacts on health, safety and security

It was established during interviews that SSGM activities have led to hazardous working conditions. For instance, an interviewee stated that (slightly modified):

> Miners face risks of injury while on duty, fatalities (especially when working underground), and long-term health issues such *as respiratory complications and cancers. … Yet the mining companies do not provide miners with any medical insurance or even pay their medical bills.*

It was reported that mining activities were exposing communities to harmful chemicals like mercury, leading to various health complications (The Monitor, 2025). Artisanal mining activities have exacerbated existing health problems and created new medical conditions due to chemical exposure and lack of access to healthcare. In the group discussions, female SSGM workers stated that they had to do a range of demanding activities including crushing, washing, panning, and transporting gold-bearing ore and waste rubble (see Figs. 2 and 3). Women comprise approximately 45 percent of SSGM workers, but are at higher risk of mercury poisoning because they tend to be engaged in the gold processing and washing stages, where exposure is high (Weldegiorgis, 2018). The activities they undertake also expose them to risks of musculoskeletal injury, respiratory problems from dust inhalation, waterborne diseases, accidents due to heavy loads, and other issues from unsafe working conditions.

Health impacts also arise from the environmental degradation caused by SSGM, including from pollution, forest clearing, and the limited land rehabilitation that typically follows gold mining (Aryee et al., 2003; Hilson and Maconachie, 2020; Haroon and Hayyat, 2025). When SSGM workers move on to new sites, these problems are usually left behind for the local community to deal with (reported during interviews and group discussions). SSGM workers experience many health hazards, including injuries from accidents, silicosis, and mercury poisoning (Phillips et al., 2001; Mwaipopo et al., 2004; Serwajja and Mukwaya, 2021).

Gold mining tends to attract risk takers, who generally enter without having any formal training or technical mining skills but are typically willing to embrace uncertainty and high levels of danger in pursuit of potentially quick financial gains (ILO, 1999; Bryceson and Jønsson, 2009). An SSGM worker's first mine site is their training platform where they 'earn as they learn'. SSGM is fairly straightforward at the initial panning stage, but as gold availability declines, technical skills are essential for finding and retrieving gold. SSGM mining pits can be between 10 and 50 metres in depth, and cave-ins are not uncommon, with high potential for injury and death (Mwaipopo et al., 2004; Nyame and Grant, 2014).

4.3.5. Gold rush and labour influx

Publicity from a major gold find can cause a 'gold rush', which is a form of project-induced in-migration or influx (Gerrits, 2024), attracting thousands of ASM/SSGM miners to the new goldfield within a few days or weeks, turning small villages into burgeoning settlements characterized by temporary housing, overcrowding, poor sanitation, and limited security (Jønsson and Bryceson, 2009; Kabunga et al., 2023).

Even in locations where gold mining had been operating for some years, most group discussions raised the issue of the influx of people from other areas seeking work. This influx created tensions between the newcomers and the existing SSGM workforce and local communities. The expert interviews also revealed that this influx increased demand on resources, infrastructure, social services, and led to an increase in crime, as was also mentioned in much literature (Jønsson and Bryceson, 2009; Eduful et al., 2020; Serwajja and Mukwaya, 2021; Adranyi et al., 2024; Gerrits, 2024).

Fig. 2. Involvement of young women in small-scale gold mining.
Note: The bags weigh between 15 and 40 kgs. They contain gold-bearing ore and are transported by women and youth from the digging site to a small refining plant for processing to extract the gold.
Source: lead author, photo taken 16 July 2025, Makokoto Sub County, Kassanda District.

Fig. 3. Women involved in processing gold near the Kijuna-Kitumbi-Kitwala wetlands.
Source: lead author, photo taken 18 July 2025, Kitumbi Sub County, Kassanda District.

4.3.6. Gender-based violence and other social issues

Serious social issues reported in the group discussions and interviews included alcoholism and prostitution that become especially problematic when mining settlements have attracted large transient populations, which creates the conditions that enable economic vulnerability and exploitation, thus increasing the risks of gender-based violence, sexually transmitted infections, and social instability. It was reported that the financial incentives associated with SSGM led to increased school dropout rates (Fisher et al., 2023). It also led to transactional sex work and to unwanted sex, especially among young women. The group discussions highlighted various human rights issues, including forced labour and child labour (as supported ILO, 1999; Mwaipopo et al., 2004; Hilson, 2010; van der Ploeg and Vanclay, 2017), and forced evictions by authorities and armed state personnel (as supported by Eduful et al., 2020; Ladewig et al., 2025). Some time after a gold rush has started and income levels have increased for some people, there can be a rapid increase in spending on consumer goods, alcohol, gambling, and spending by men on women, changing normal patterns of household life. This often results in increased gender-based violence, family breakdown, health risks (such as alcoholism and sexually transmitted infections), indebtedness, and the depletion of savings that might otherwise have supported longer-term wellbeing (Jønsson and Bryceson, 2009; Serwajja and Mukwaya, 2021; Baddianaah, 2024).

4.4. Key social challenges and current management strategies

The expert interviews and group discussions revealed that most social risks associated with SSGM arise primarily from poverty, limited livelihood options, and the informal nature of the sector. Rural households resort to ASM and SSGM as a survival strategy because they are typically in poverty and living in areas with limited employment opportunities, poor infrastructure and declining agricultural productivity. The challenges of rural communities are compounded by weak institutional capacity, limited enforcement of mining and environmental laws, lack of access to finance and clean technologies, and insufficient awareness of occupational health and safety standards (Hilson and Potter, 2003; García et al., 2015; Ladewig et al., 2025; McKay, 2025).

In response to all these issues and with support from international partners such as UNEP (2008) and planetGOLD Uganda (2024), the Ugandan government has developed and implemented various strategies, including: a National Action Plan on Mercury; formalization of SSGM by licensing small companies and cooperatives; providing training programs on various topics, including mercury-free gold extraction; and holding awareness-raising campaigns about gender issues and child protection (Hilson, 2010; planetGOLD Uganda, 2024). Despite these initiatives and policies, there are many shortcomings in mining governance. Specifically, local communities and their leaders are not adequately engaged in decision making, monitoring, or benefit sharing negotiations. It was reported by the expert interviewees that this lack of involvement has led to weak accountability, reduced trust, and to the limited effectiveness of many initiatives. This highlights the need for stronger institutional coordination and the development of sustainable livelihood alternatives to reduce the sector's social risks (RGI, 2024; Perks, 2025).

5. Conclusion and recommendations

Our research has established that local communities in areas with small-scale gold mining experience many negative social and environmental impacts from SSGM, and are inadequately compensated for loss of land or for the impacts they experience. Together with inadequate community engagement and the limited involvement of local people in decision-making, the effectiveness and sustainability of SSGM initiatives is undermined. This fuels discontent, with concerns quickly becoming conflicts (Hanna et al., 2016; Vanclay and Hanna, 2019; Kahangirwe and Vanclay, 2024).

Physical and economic displacement, and disruptions to traditional livelihoods, erode the economic and social wellbeing of local people (Smyth and Vanclay, 2017; Vanclay, 2017). The influx of transient labour generated by ASM and SSGM increases the risks of various health

hazards (especially communicable diseases, mercury poisoning, respiratory problems, and water-borne diseases), which affects the wellbeing, health, safety and security of local communities (Aryee et al., 2003; Hilson and Potter, 2003; Serwajja and Mukwaya, 2021). These impacts exacerbate gender-based violence (Arthur-Holmes et al., 2025).

Reduced access to the natural resources on which local people depend for their livelihoods – such as clean water, land for agriculture, and access to forest products – intensifies competition amongst local community members (and with newcomers), creating bitterness and conflict (Cuba et al., 2014, Gerrits, 2024). Also, cultural norms and traditional cultural practices are affected (either no longer practiced, or the locations where they were done have been lost), leading to social instability and erosion of communal identity (Ogwang and Vanclay, 2021; Kahangirwe et al., 2025; Kowszyk et al., 2025). Changes associated with labour influx include increased gambling, alcoholism, substance abuse, crime and prostitution, which lead to much discord in the community. Addressing these adverse social risks requires fair compensation, inclusive governance, practical health initiatives, and gender sensitive interventions. In order to minimize harm to local communities, below we propose various governance strategies that should be adopted to improve SSGM.

5.1. Suggestions for government institutions

Based on our findings, we suggest that government institutions should strengthen their policy and regulatory frameworks by: formalizing the artisanal and small-scale mining sector through more consistent policies, transparent licensing procedures, and ensuring compliance with effective environmental and social regulations; harmonizing national and local regulations; strengthening ethical behaviour by officials that aligns with formal regulations and policies; and integrating gender sensitive, human rights-based approaches in decision-making relating to SSGM. They should ensure transparent and adequate allocation of resources, and make appropriate decisions about land use allocation in a participatory planning process that respects customary rights and embeds accountability, especially in relation to the allocation of mining concessions and land access for infrastructure. They should invest in capacity building and training their staff in the areas of responsible oversight and social impact management, and create inter-agency coordination mechanisms so that SSGM activities can be managed more effectively.

5.2. Suggestions for private sector actors

In order to build trust and obtain a social licence to operate, on basis of our research we recommend that private sector actors, especially project developers, should engage early with affected communities, traditional leaders, and local governments, and continue to engage with them throughout the project development process. They should establish a transparent grievance redress mechanism. To identify the potential social and environmental risks, they should conduct thorough ESIAs, and use this understanding to design appropriate mitigation measures, including by implementing alternative livelihood strategies, providing local employment opportunities, and support for micro enterprises. To foster local economic, social and community development, private actors should prioritize local procurement, invest in vocational training and safety education for artisanal miners, and promote value adding through initiatives like local gold processing.

5.3. Suggestions for local stakeholders

Our findings indicate that it is important for local authorities and communities to actively participate in project planning, execution, monitoring, and benefit sharing through formal agreements, such as Memorandums of Understanding that cover issues such as access to land, compensation, social investment and benefit sharing, and plans for sustainable livelihood creation. Local authorities should support savings and credit schemes to strengthen the financial resilience of local communities, promote livelihood diversification, and foster social cohesion within local communities. They should ensure that grievance redress mechanisms are established, and facilitate awareness creation campaigns about various social issues, including gender-based violence, child labour and children's rights, and equitable resource sharing.

5.4. Suggestions for development partners and civil society organisations

These stakeholders should promote transparency and follow-up through independent monitoring (Morrison-Saunders and Arts, 2004, 2024), and advocate for responsible sourcing standards, while supporting capacity development, especially in relation to training about occupational health and safety, mercury free technologies, and financial literacy. They should facilitate partnerships for improved social service delivery, pilot social enterprise models to reinvest SSGM profits into community development, and conduct research on the socio-economic dynamics of SSGM to inform evidence-based policy reforms.

5.5. Cross-cutting priorities

Our research stresses the importance of gender equity and social inclusion being prioritised, and the need to design targeted programs for youth and marginalized groups, as well as to enhance transparency by having open data platforms, independent audits, and multi-stakeholder oversight. SSGM infrastructure projects should implement robust environmental and social management plans to avoid and/or mitigate cumulative impacts.

We found that the majority of SSGM companies in operation at our fieldwork site did not have formal approval, and had not conducted ESIAs, despite legal requirements mandating this (Uganda, 2019, 2020). Integrating mitigation and management strategies throughout the project cycle is essential for reducing socio-economic risks. A participatory, transparent and adaptive approach to risk management not only minimizes harm but also facilitates poverty alleviation, inclusive local development, and long-term sustainability.

Although the Government of Uganda has recently introduced new legislation, this alone will not be adequate. Without a boost in regulatory enforcement and institutional capacity, the further development of gold mining and refining could inadvertently create openings for unlawful and/or undesirable actors. The dominance of the extractive sector in Uganda creates risks that there will be limited investment in other industries, which hampers economic diversification and resilience. This is compounded by the high level of corruption, with Uganda currently ranked 144 out of 188 countries on Transparency International's (2024) Corruption Perceptions Index. SSGM-dependent communities are also vulnerable to social risks arising from gold price fluctuations. When prices are booming, there is job creation and rapid in-migration, but when prices crash, the consequences include job losses, income instability, and social unrest. Boom-bust cycles undermine sustainability and long-term planning, deepen inequality, and erode social cohesion. All this points to the need for effective governance and adequate management of the social and environmental issues associated with artisanal and small-scale mining.

CRediT authorship contribution statement

Pius Kahangirwe: Conceptualization, Methodology, Writing – original draft. **Frank Vanclay:** Writing – review & editing, Supervision. **Jos Arts:** Writing – review & editing, Supervision.

Declaration of competing interest

The authors have no conflicts of interest to disclose.

References

Adom, R., Simatele, M., 2026. Assessing the implications of organised illegal and informal mining activities on the environment in South Africa. Ambio 55, 558–570. https://doi.org/10.1007/s13280-025-02251-4.

Adranyi, E., Stringer, L., Altink, H., 2024. Artisanal and small-scale gold mining governance and cross-sectoral policy coherence in Ghana. Resour. Policy 96, 105235. https://doi.org/10.1016/j.resourpol.2024.105235.

Alobo Loison, S., 2015. Rural livelihood diversification in sub-Saharan Africa. J. Dev. Stud. 51 (9), 1125–1138. https://doi.org/10.1080/00220388.2015.1046445.

Arthur-Holmes, F., Busia, K., Amponsah, E., Mengba, J., 2025. Sexual and gender-based violence in artisanal and small-scale mining in Ghana: Implications for African women's socioeconomic empowerment and well-being. Extr. Ind. Soc. 23, 101635. https://doi.org/10.1016/j.exis.2025.101635.

Arthur-Holmes, F., Yeboah, T., 2025. Reconceptualizing the youth and waithood notions: African youth agency and rural livelihoods in artisanal and small-scale mining. J. Rural Stud. 113, 103513. https://doi.org/10.1016/j.jrurstud.2024.103513.

Aryee, B., Ntibery, B., Atorkui, E., 2003. Trends in the small-scale mining of precious minerals in Ghana: a perspective on its environmental impact. J. Clean. Prod. 11 (2), 131–140. https://doi.org/10.1016/S0959-6526(02)00043-4.

Baddianaah, I., 2024. If you don't go to site, they call you a lazy person": drivers of women's participation in artisanal and small-scale mining: The case of rural northern Ghana. Resour. Policy 98, 105327. https://doi.org/10.1016/j.resourpol.2024.105327.

Brown, E., 2020. Artisanal and small-scale mining and agriculture: friends or foes? African Center for Economic Transformation Policy Brief. https://acetforafrica.org/research-and-analysis/insights-ideas/policy-briefs/artisanal-and-small-scale-mining-and-agriculture-friends-or-foes/.

Bryceson, D., Jønsson, J., 2010. Golddigging careers in rural East Africa: smallscale miners' livelihood choices. World Dev. 38 (3), 379–392. https://doi.org/10.1016/j.worlddev.2009.09.003.

Burlcore (2025). *Environmental and Social Impact Assessment for the Proposed Gold Exploration Project to be located in Mawero East 'B' Cell, North 'C' Ward, Eastern Division, Busia Municipality, Busia District*. Unpublished ESIA report.

Buss, D., Rutherford, B., Stewart, J., Côté, G., Sebina-Zziwa, A., Kibombo, R., Hinton, J., Lebert, J., 2019. Gender and artisanal and small-scale mining: implications for formalization. Extr. Ind. Soc. 6 (4), 1101–1112. https://doi.org/10.1016/j.exis.2019.10.010.

Cuba, N., Bebbington, A., Rogan, J., Millones, M., 2014. Extractive industries, livelihoods and natural resource competition: mapping overlapping claims in Peru and Ghana. Appl. Geogr. 54, 250–261. https://doi.org/10.1016/j.apgeog.2014.05.003.

Desert Park Miners (2025a). *Environmental and social impact assessment for the proposed gold exploration project to be located in Nyaburungi Village, Mugarama Parish, Mugarama Sub-County, Kibaale District* (Exploration License Number: EL00362). Kampala: Desert Park Miners Limited, August 2025. Unpublished ESIA report.

Desert Park Miners (2025b). *Environmental and social impact assessment for the proposed gold exploration project to be located in Kigomba Village, Kiryangobe Parish, Kasambya Sub-County, Bugangaizi South County, Kakumiro District* (Exploration License Number: EL00360). Kampala: Desert Park Miners Limited. Unpublished ESIA report.

Donkor, P., Siabi, E., Mensah, S., Frimpong, K., Vuu, C., Nyantakyi, E., Siabi, E., Boachie-Ameyaw, A., 2025. Informal artisanal and small-scale mining in Sub-Saharan Africa: policy evolution, sector formalization, and future trajectories. Resour. Policy 109, 105698. https://doi.org/10.1016/j.resourpol.2025.105698.

Eduful, M., Alsharif, K., Eduful, A., Acheampong, M., Eduful, J., Mazumder, L., 2020. The illegal artisanal and small-scale mining (galamsey) 'menace' in Ghana: is military-style approach the answer? Resour. Policy 68, 101732. https://doi.org/10.1016/j.resourpol.2020.101732.

Esteves, A.M., Factor, G., Vanclay, F., Götzmann, N., Moreira, S., 2017. Adapting social impact assessment to address a project's human rights impacts and risks. Environ. Impact Assess. Rev. 67, 73–87. https://doi.org/10.1016/j.eiar.2017.07.001.

Esteves, A.M., Maurtua Konstantinidis, A., Carroll, B., Gouley, C., Vanclay, F., 2025. Rebuilding project-affected livelihoods using the Graduation Approach. Extr. Ind. Soc. 24, 101757. https://doi.org/10.1016/j.exis.2025.101757.

Fisher, E., de Theije, M., Araujo, C., Calvimontes, J., van de Camp, E., D'Angelo, L., Lanzano, C., Luning, S., Massaro, L., Mello, J., Ouédraogo, A., Pijpers, R., Resende de Moraes, R., Sawadogo, C., Tuhumwire, M., Twongyirwe, R., 2023. The lifeways of small-scale gold miners: addressing sustainability transformations. Glob. Environ. Change 82, 102724. https://doi.org/10.1016/j.gloenvcha.2023.102724.

García, O., Veiga, M., Cordy, P., Suescún, O., Molina, J., Roeser, M., 2015. Artisanal gold mining in Antioquia, Colombia: a successful case of mercury reduction. J. Clean. Prod. 90, 244–252. https://doi.org/10.1016/j.jclepro.2014.11.032.

Gerrits, R., 2024. Managing influx: project-induced in-migration. In: Vanclay, F., Esteves, & A. (Eds.), Handbook of Social Impact Assessment and Management. Edward Elgar, Cheltenham, pp. 412–425.

Global Witness, 2017. Undermined: How Corruption, Mismanagement and Political Influence Is Undermining Investment in Uganda's Mining Sector and Threatening People's Rights. Global Witness. https://gw.hacdn.io/media/documents/Undermined_Report_1.pdf.

Government of Uganda, 2022. *The Mines and Minerals Act 2022*. Kampala: Parliament of the Government of Uganda. https://www.law.co.ug/download/mining-and-minerals-act-2022/.

Gukurume, S., Tombindo, F., 2023. Mining-induced displacement and livelihood resilience: the case of Marange, Zimbabwe. Extr. Ind. Soc. 13, 101210. https://doi.org/10.1016/j.exis.2023.101210.

Gulakov, I., Vanclay, F., 2024. Continuing to Put People First: Embedding community investment in the sustainability standards of international financial institutions. Sustain. Dev. 32 (5), 5882–5893. https://doi.org/10.1002/sd.3003.

Hanna, P., Vanclay, F., Langdon, E.J., Arts, J., 2016. Conceptualizing social protest and the significance of protest action to large projects. Extr. Ind. Soc. 3 (1), 217–239. https://doi.org/10.1016/j.exis.2015.10.006.

Hansen, A.M., Vanclay, F., Croal, P., Olsen, A., 2016. Managing the social impacts of the rapidly expanding extractive industries in Greenland. Extr. Ind. Soc. 3 (1), 25–33. https://doi.org/10.1016/j.exis.2015.11.013.

Haroon, M., Hayyat, M., 2025. Assessing the dual impact of gold mining on local communities: socio-economic benefits and environmental challenges. Resour. Policy 103, 105559. https://doi.org/10.1016/j.resourpol.2025.105559.

Hilson, G., 2010. Child labour in African artisanal mining communities: experiences from Northern Ghana. Dev. Change 41 (3), 445–473. https://doi.org/10.1111/j.1467-7660.2010.01646.x.

Hilson, G., 2016. Farming, small-scale mining and rural livelihoods in Sub-Saharan Africa: a critical overview. Extr. Ind. Soc. 3 (2), 547–563. https://doi.org/10.1016/j.exis.2016.02.003.

Hilson, G., 2020. The 'Zambia Model': A blueprint for formalizing artisanal and small-scale mining in sub-Saharan Africa? Resour. Policy 68, 101765. https://doi.org/10.1016/j.resourpol.2020.101765.

Hilson, G., Bartels, E., Hu, Y., 2022. Brick by brick, block by block: building a sustainable formalization strategy for small-scale gold mining in Ghana. Environ. Sci. Policy 135, 207–225. https://doi.org/10.1016/j.envsci.2022.04.006.

Hilson, G., Hilson, A., Maconachie, R., McQuilken, J., Goumandakoye, H., 2017. Artisanal and small-scale mining in sub-Saharan Africa: Re-conceptualising formalization and 'illegal' activity. Geoforum 83, 80–90. https://doi.org/10.1016/j.geoforum.2017.05.004.

Hilson, G., Laing, T., Hilson, A., Arnall, A., Mondlane, S., 2025. How does small-scale mining stabilize rural livelihoods in Sub-Saharan Africa? The case of Mozambique. World Dev. 185, 106761. https://doi.org/10.1016/j.worlddev.2024.106761.

Hilson, G., Maconachie, R., 2020. Artisanal and small-scale mining and the Sustainable Development Goals: Opportunities and new directions for Sub-Saharan Africa. Geoforum 111, 125–141. https://doi.org/10.1016/j.geoforum.2019.09.006.

Hilson, G., Potter, C., 2003. Why is illegal gold mining activity so ubiquitous in rural Ghana? Afr. Dev. Rev. 15 (2-3), 237–270. https://doi.org/10.1111/j.1467-8268.2003.00073.x.

IGF, 2017. Global Trends in Artisanal and Small-Scale Mining (ASM): A Review of Key Numbers And Issues. Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development. https://www.iisd.org/system/files/publications/igf-asm-global-trends.pdf.

IGF, 2025. *Transforming Artisanal and Smallscale Gold Mining: Progress in Formalization of the Sector* (draft Briefing Note). February 2025. https://www.igfmining.org/wp-content/uploads/2025/02/igf-asgm-case-study-draft-02-2025.pdf.

ILO, 1999. Social and Labour Issues in Small-Scale Mines. International Labour Organization. https://www.ilo.org/sites/default/files/wcmsp5/groups/public/@ed_dialogue/@sector/documents/meetingdocument/wcms_714371.pdf.

Jønsson, J., Bryceson, D., 2009. Rushing for gold: mobility and small-scale mining in East Africa. Dev. Change 40 (2), 249–279. https://doi.org/10.1111/j.1467-7660.2009.01514.x.

Joyce, S., Sairinen, R., Vanclay, F., 2018. Using social impact assessment to achieve better outcomes for communities and mining companies. In: Lodhia, S. (Ed.), Mining and Sustainable Development: Current Issues. Routledge, pp. 65–86. https://doi.org/10.4324/9781315121390-5.

Kabunga, P., Marijsse, S., Geenen, S., 2023. Chasing gold: Technology, people, and matter on the move in Eastern Democratic Republic of the Congo. In: Castillo Guzmán, G., Himley, M., Brereton, D. (Eds.), Mining, Mobility, and Social Change in the Global South. Routledge, pp. 83–100. https://doi.org/10.4324/9781003313236.

Kahangirwe, P., 2011. Evaluation of environmental impact assessment practice in Western Uganda. Impact Assess. Proj. Apprais. 29 (1), 79–83. https://doi.org/10.3152/146155111X12913679730719.

Kahangirwe, P., Vanclay, F., 2022. Evaluating the effectiveness of a national environmental and social impact assessment system: lessons from Uganda. Impact Assess. Proj. Apprais. 40 (1), 75–87. https://doi.org/10.1080/14615517.2021.1991202.

Kahangirwe, P., Vanclay, F., 2024. Social impacts arising from road infrastructure projects in Sub-Saharan Africa: Better management of social issues is needed in road construction, upgrading and rehabilitation. Impact Assess. Proj. Apprais. 42 (4), 309–322. https://doi.org/10.1080/14615517.2024.2385877.

Kahangirwe, P., Vanclay, F., Arts, J., 2025. Using environmental and social impact assessment to improve tourism infrastructure projects in protected areas: Green tourism in the Kalinzu Central Forest Reserve in Uganda. J. Environ. Plan. Manag. https://doi.org/10.1080/09640568.2025.2539347 online.

Kowszyk, Y., Vanclay, F., Maher, R., 2023. Conflict management in the extractive industries: a comparison of four mining projects in Latin America. Extr. Ind. Soc. 13, 101161. https://doi.org/10.1016/j.exis.2022.101161.

Kowszyk, Y., Walter, M., Maher, R., Vanclay, F., 2025. Social revolution and mining projects: the potential role of cultural power in transforming mining conflict. Extr. Ind. Soc. 24, 101733. https://doi.org/10.1016/j.exis.2025.101733.

Ladewig, M., Cuni-Sanchez, A., Angelsen, A., Imani, G., Baderha, G.K.R., Bulonvu, F., Kalume, J., 2025. Between a rock and a hard place: livelihood diversification through artisanal mining in the Eastern DR Congo. Resour. Policy 106, 105613. https://doi.org/10.1016/j.resourpol.2025.105613.

Maconachie, R., Hilson, G., 2011. Safeguarding livelihoods or exacerbating poverty? Artisanal mining and formalization in West Africa. Nat. Resour. Forum. 35, 293–303. https://doi.org/10.1111/j.1477-8947.2011.01407.x.

McKay, S., 2025. Entering the critical era: A review of contemporary research on artisanal and small-scale mining. Extr. Ind. Soc. 21, 101590. https://doi.org/10.1016/j.exis.2024.101590.
McQuilken, J., Hilson, G., 2018. Mapping small-scale mineral production networks: the case of alluvial diamonds in Ghana. Dev. Change 49 (4), 978–1009. https://doi.org/10.1111/dech.12403.
Morrison Saunders, A., Arts, J., 2004. Assessing Impact: Handbook of EIA and SEA Follow Up. Routledge. https://doi.org/10.4324/9781849770507.
Morrison-Saunders, A., Arts, J., 2024. Effectively engaging the public in impact assessment follow-up. In: Burdett, T., Sinclair, J. (Eds.), Handbook of Public Participation in Impact Assessment. Edward Elgar, pp. 236–262. https://doi.org/10.4337/9781800889996.00022.
Mwaipopo, R., Mutagwaba, W., Nyange, D., 2004. Increasing the Contribution of Artisanal and Small-Scale Mining to Poverty Reduction in Tanzania: Based on an Analysis of Mining Livelihoods in Misungwi and Geita Districts, Mwanza Region. Department for International Development (UK, London. https://www.researchgate.net/publication/242636212.
Nyame, F., Grant, J., 2014. The political economy of transitory mining in Ghana: Understanding the trajectories, triumphs, and tribulations of artisanal and small-scale operators. Extr. Ind. Soc. 1 (1), 75–85. https://doi.org/10.1016/j.exis.2014.01.006.
Ofosu, G., Sarpong, D., 2023. Defying the gloom: In search of the 'golden' practices of small-scale mining operations. Environ. Sci. Policy 139, 62–70. https://doi.org/10.1016/j.envsci.2022.10.013.
Ogwang, T., Vanclay, F., 2021. Cut-off and forgotten: livelihood disruption, social impacts and food insecurity arising from the East African Crude Oil Pipeline. Energy Res. Soc. Sci. 74, 101970. https://doi.org/10.1016/j.erss.2021.101970.
Ogwang, T., Vanclay, F., van den Assem, A., 2018. Impacts of the oil boom on the lives of people living in the Albertine Graben region of Uganda. Extr. Ind. Soc. 5, 98–103. https://doi.org/10.1016/j.exis.2017.12.015.
Ogwang, T., Vanclay, F., van den Assem, A., 2019. Rent-seeking practices, local resource curse, and social conflict in Uganda's emerging oil economy. Land 8 (4), 53. https://doi.org/10.3390/land8040053.
Oumart (2023). *Terms of reference for the environmental social and impact assessment for the proposed development of Oumart Artisanal Gold Mine in Busia District*. Oumart Artisanal Gold Mine SMC Ltd. Unpublished Report.
Perks, R., 2025. A New Era of Renewal in Artisanal Mining. World Bank. https://www.worldbank.org/en/news/opinion/2025/02/14/a-new-era-of-renewal-in-artisanal-mining.
Phillips, L., Semboja, H., Shukla, G.P., Sezinga, R., Mutagwaba, W., Mchwampaka, B., 2001. Tanzania's Precious Minerals Boom: Issues in Mining and Marketing. African Economic Policy Discussion Paper No. 68. EAGER (Equity and Growth through Economic Research). https://libraryrepository.udsm.ac.tz/bitstreams/66e4fe7a-2625-4ccf-b95c-c8f9afc7af7b/download.
Pinnacle Enviro Consult. (2017). Environmental impact statement for a proposed gold mine to be located on Kamusenene Hills in Kamusenene Village, Mudade Parish, Kitumbi Sub-County, Mubende District (Prepared for Zhong Quan Limited). Submitted to the National Environment Management Authority, Kampala, Uganda. Unpublished Report.
planetGOLD Uganda, 2024. Driving Change in Artisanal & Small-Scale Gold Mining. PlanetGOLD. https://www.planetgold.org/sites/default/files/Uganda%20-%20Driving%20change%20in%20ASGM.pdf.
RGI, 2024. Six Keys to Unlocking Equitable Value Addition in Mining. Resource Governance Institute. https://resourcegovernance.org/sites/default/files/2025-01/Six_Keys_Unlocking_Equitable_Value_Addition_Mining.pdf.
Rugadya, M., 2020. Land tenure as a cause of tensions and driver of conflict among mining communities in Karamoja, Uganda: Is Secure Property Rights a Solution? Land Use Policy 94, 104495. https://doi.org/10.1016/j.landusepol.2020.104495.
Serwajja, E., Mukwaya, P., 2021. Environmental, health and safety intricacies of artisanal mining in the goldrich landscapes of Karamoja, Northeastern Uganda. J. Sustain. Min. 20 (2), 90–108. https://doi.org/10.46873/2300-3960.1055.
Seven Hills, 2022. *Environmental and Social Project Brief for the Proposed Geochemical Sampling and Pitting for Gold Exploration to be Conducted within Kanangaro Central Forest Reserve at Mulanda Village, Kirwanyi Parish, Kiruuma Sub-County in Mubende District.* Prepared by Global Amet Allies. Uganda for Seven Hills Exploration and Mining Group Limited, Kampala.
Shining Mines, 2022. Environment and Social Impact Statement for the Proposed Exploration Activities of Base Metals & Gold at Kasyoha-Kitomi, Bihanga Forest Reserve Areas in Kyabakara and Kayenje Villages, Nyakaziba Parish, Bihanga Sub County, Buhweju District. Shining Mines Ltd.
Smyth, E., Price, S., Vanclay, F., 2025. Fair and Equitable Land Access (FELA) by development projects: Enhancing governance for sustainable development outcomes when projects displace people. Sustain. Dev. https://doi.org/10.1002/sd.70592 online.
Smyth, E., Vanclay, F., 2017. The Social Framework for Projects: a conceptual but practical model to assist in assessing, planning and managing the social impacts of projects. Impact Assess. Proj. Apprais. 35 (1), 65–80. https://doi.org/10.1080/14615517.2016.1271539.
The Monitor, 2025. Artisanal Gold Miners Directed to use Mercuryfree Technologies. Monitor Publication. Monday 7 October 2024. https://www.monitor.co.ug/uganda/news/national/artisanal-gold-miners-directed-to-use-mercury-free-technologies-4787014.
Tingini, T., Eniowo, O., 2025. Breaking the informal cycle: integrating artisanal and small-scale mining into the formal economy. Miner. Econ. https://doi.org/10.1007/s13563-025-00557-z online.
Transparency International, 2024. Corruption Perceptions Index 2024: Uganda. https://www.transparency.org/en/cpi/2024/index/uga.
TrustAfrica, 2024. The Status of Domestication of the Africa Mining Vision in Kenya: The Case of Artisanal and Small-Scale Mining. https://trustafrica.org/publication/the-status-of-domestification-of-the-africa-mining-vision-in-kenya-the-case-of-artisanal-and-small-scale-mining/.
Tseer, T., Ngmenkpieo, F., Kanyiri Damwah, A., 2025. Unpacking the dual impact of informal gold mining on educational attainment in resource constrained communities. Extr. Ind. Soc. 22, 101601. https://doi.org/10.1016/j.exis.2024.101601.
Twinamasiko, S., Faria, C., 2025. Land is men': oil, secondary wives, and the extractive intimacies of dispossession by compensation in Albertine Graben, Uganda. Gend. Place Cult. 32 (6), 871–893. https://doi.org/10.1080/0966369X.2025.2455724.
Uganda, 2019. *The National Environment Act* (Act 5 of 2019). https://nema.go.ug/sites/all/themes/nema/docs/National%20Environment%20Act,%20No.%205%20of%202019.pdf.
Uganda, 2020. *The National Environment (Environmental and Social Assessment) Regulations, 2020* (Statutory Instruments 2020, No 143). https://www.nema.go.ug/en/wp-content/uploads/2025/01/National-Environment-Environmental-and-Social-Assessment-Regulations-S.I.-No.-143-of-2020.pdf.
UNDP, 2024. Development Minerals: Innovation and Enterprise Empowering Women Artisanal Miners of Uganda. United Nations Development Programme. https://www.undp.org/uganda/stories/development-minerals-innovation-and-enterprise-empowering-women-artisanal-miners-uganda.
UNEP, 2008. UNIDO Technical Guidelines on Mercury Management in Artisanal and SmallScale Gold Mining. United Nations Environment Programme. https://wedocs.unep.org/handle/20.500.11822/11525.
Universal Flow (2025). Environmental and Social Impact Assessment for Construction of Gold Processing/Refinery Plant and Effluent/Waste Water Treatment Plant at Mugobwa A Cell, Mundadde Parish, Kitumbi Division, Bukaya County, Kassanda District. Universal Flow Limited. Unpublished Report.
UNODC, 2024. Global Report on Trafficking in Persons 2024 (Chapter 2: Trafficking in persons, mineral resources and armed groups, DRC). United Nations Office on Drugs and Crime (UNODC). https://www.unodc.org/documents/data-and-analysis/glotip/2024/GLOTIP2024_Chapter_2.pdf.
van der Ploeg, L., Vanclay, F., 2017. A human rights based approach to project induced displacement and resettlement. Impact Assess. Proj. Apprais. 35 (1), 34–52. https://doi.org/10.1080/14615517.2016.1271538.
van der Ploeg, L., Vanclay, F., 2018. Challenges in implementing the corporate responsibility to respect human rights in the context of project-induced displacement and resettlement. Resour. Policy 55, 210–222. https://doi.org/10.1016/j.resourpol.2017.12.001.
Vanclay, F., 2002. Conceptualising social impacts. Environ. Impact Assess. Rev. 22 (3), 183–211. https://doi.org/10.1016/S0195-9255(01)00105-6.
Vanclay, F., 2017. Project induced displacement and resettlement: From impoverishment risks to an opportunity for development? Impact Assess. Proj. Apprais. 35 (1), 3–21. https://doi.org/10.1080/14615517.2017.1278671.
Vanclay, F., Baines, J., Taylor, C.N., 2013. Principles for ethical research involving humans: ethical professional practice in impact assessment – Part I. Impact Assess. Proj. Apprais. 31 (4), 243–253. https://doi.org/10.1080/14615517.2013.850307.
Vanclay, F., Hanna, P., 2019. Conceptualising company response to community protest: Principles to achieve a social license to operate. Land 8 (6), 101. https://doi.org/10.3390/land8060101.
Weldegiorgis, F., Lawson, L., Verbrugge, H., 2018. Women in Artisanal and Small-Scale Mining: Challenges and opportunities for greater participation. International Institute for Environment and Development, London. https://www.iied.org/sites/default/files/pdfs/migrate/G04307.pdf.
World Bank, 2023. 2023 State of the Artisanal and Small-Scale Mining Sector. World Bank. https://documents.worldbank.org/curated/en/099540502092428278.
World Bank, 2024a. Artisanal and Small-Scale Mining: A New Vision for Sustainable and Inclusive Development. World Bank. https://thedocs.worldbank.org/en/doc/3350d1c18d832fecc58fdce4743f7f82-0400052024/original/ASM.pdf.
World Bank, 2024b. Achieving Sustainable and Inclusive Artisanal and Small-Scale Mining (ASM): A Renewed Framework for World Bank Engagement. World Bank. https://doi.org/10.1596/42156.