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Making Artisanal Gold Miners 'Investable' - A Novel Means of 'Improving' Artisanal and Small-Scale Mining?

A neoliberal eco-governmentality analysis of 'responsible' artisanal and small-scale gold mining: the case of the Lake Victoria Gold Programme in Migori County, Kenya

Author: Gustav Dahlqvist
Supervisor: Yahia Mahmoud

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Abstract

Objectives: Artisanal and Small-Scale Mining (ASM) - a labour-intensive and low-tech mode of minerals extraction and processing - has received increasing attention amidst global commodity booms and its concurrent expansion. Infamously associated with negative social and environmental impacts, responsible mining initiatives have emerged to promote, measure, and enforce sustainable mining practices for ASM. The Impact Facility's (TIF) Lake Victoria Gold Programme (LVGP) is one such initiative, taking a 'novel' business-led and incentives-based approach to Artisanal and Small-Scale Gold Mining (ASGM) in Migori County, Kenya. This study investigates the governance strategy of the LVGP through the theoretical framework of neoliberal eco-governmentality to explore dominating, interacting, and diverging narratives between stakeholders that underpin, undermine, and justify programme interventions. The thesis, therefore, offers new, timely and critical insights into one of the latest attempts to 'improve' the ASM sector.

Method: A qualitative case study research design has been adopted to explore the perceptions and narratives of different stakeholders in relation to the LVGP, including investors, programme implementers, and artisanal miners in Migori County, Kenya. It is based on 24 semi-structured interviews, 53 survey responses, and participant observation.

Main findings: The findings suggest that TIF's LVGP is rationalised and justified by investors and programme implementers to actively attempt to reshape the practices of miners to become and remain 'investable' by being 'productive' and 'responsible'. It demonstrates a co-emergence of certain defined problems and technical solutions, offering a 'techno-finance fix' to leverage compliance to Environmental, Social and Governance (ESG) improvements of miners. Miners, on the other hand, point to a variety of complex structural, political, issues - beyond the mere 'technical space' of the LVGP - that persistently undermine their 'ability to self-improve'.

Key words: *Artisanal and Small-Scale Mining (ASM), responsible mining initiatives, neoliberal eco-governmentality, investability, gold, Kenya*

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List of abbreviations

3TG	Tin, Tantalum, Tasserite, and Gold
AMP	Artisanal Mineral Producer
ASGM	Artisanal and Small-Scale **Gold** Mining
ASM	Artisanal and Small-Scale Mining
CBOs	Community-Based Organisations
CIP	Continuous Improvement Plan
CSO	Civil Society Organisation
CSR	Corporate Social Responsibility
ESG	Environmental, Social and Governance (standards)
GEM	Global Environmental Management
ICJ	International Commission of Jurists
IGF	Intergovernmental Forum (of Mining)
KYC	Know-Your-Client
LSM	Large Scale Mining
LVGP	Lake Victoria Gold Programme
MNMC	Multinational Mining Company
NGO	Non-governmental organisation
OEC	Observatory for Economic Complexity
OECD	Organisation for Economic Cooperation and Development
OHS	Occupational, Health and Safety
RMI	Responsible Mining Initiative
SSA	Sub-Saharan Africa
TIF	The Impact Facility
VSSs	Voluntary Sustainability Standards

List of definitions

Artisanal and Small-Scale Mining (ASM)	A form of 'customary' extractive activity. Usually defined by its characteristics: low mechanisation, labour-intensive. Represents the livelihood of 40 million globally (IGF, 2018).
Large Scale Mining (LSM)	A form of industrial extractive activity. Usually defined by its high production output and high levels of mechanisation. Mostly operated by Multinational Mining Companies (Hilson, 2019).
Investability	Investability can broadly be defined as "conditions that are conducive to a higher level of investment and refer principally to the business environment in which economic agents operate" (Begg, 2002:187).
Responsible mining	Contested term, yet is broadly referred to as the 'sustainable environmental and social practices' of mining activity, critiqued for the paradox that mining, by definition means exploiting nature, and thus cannot be 'sustainable' (Sauer & Hiete, 2020).
Self-regulation	Refers to the process in which an actor, such as a mining company, regulates itself (behaviours, practices) without external intervention from a second or third party. Central to the practice of 'governance', as understood by Foucault (2008).
Subjectivity	Refers to the concept of 'identity' of the human's self, shaped and influenced by complex forces of language, discourse, and normative values (Ashcroft et al., 2007:202).
Voluntary forms of regulation	Also called 'private' regulation. Refers to governance strategies which transcend the state, promoted by non-governmental organisations, corporations, etc. Departs from values such as 'independence', 'autonomy', and 'objectivity' in 'good' business practice (Childs, 2014).
Voluntary Sustainability Standards (VSSs)	Collective term for global frameworks of 'best practice', outlining benchmarking standards for 'good', 'responsible' and 'appropriate' production, and trade, of minerals (Le Billion & Spiegel, 2022). Environmental, Social and Governance (ESG), used widely in this thesis, is a set of VSSs.

1. Introduction

1.1. Motivation for study

As the world transitions from fossil fuels to renewable energy, the reliance on mineral resources, including gold, is growing considerably (Bazilian, 2018). Artisanal and Small-Scale Mining (ASM) - a labour-intensive and low-tech mode of minerals extraction and processing - has expanded concurrently to the surging global demand for minerals (Luckender et al., 2021). Despite representing a crucial livelihood source for millions of people, the ASM sector has become most known for its negative environmental and social impacts, including the use of toxic chemicals, child labour, and poor health and safety records (Fraekland Vangsnes, 2018). As a significant contributor to global mineral output, the ASM sector's sustainable development has become an urgent global concern (Hilson, 2016).

Responsible mining initiatives - voluntary forms of regulation to promote environmentally and socially 'sustainable' mining practices - have emerged as celebrated solutions in development circles to the plethora of challenges facing the ASM sector (McQuilken, 2016). These initiatives have brought global Voluntary Sustainability Standards (VSSs) to the forefront, defined as criteria for promoting, measuring, and enforcing sustainable mining practices (Smith et al., 2019). However, the effectiveness and impact of these standards-based responsible mining initiatives have been widely contested (Fisher, 2018), especially for not being able to deliver meaningful development benefits for ASM's operators who find themselves in entrenched informal settings and under significant rural hardship (Hilson et al., 2016).

Artisanal and Small-Scale Gold Mining (ASGM) in the Republic of Kenya is no exception to the wide range of social and environmental issues associated with the wider ASM sector. Whilst Kenya has not been seen as a mining economy historically, the southwestern counties located on the Lake Victoria Gold Fields are experiencing a massive influx of people into the ASGM sector (Odumu et al., 2018). Consequently, ASGM has become a central livelihood activity for thousands of people, especially in the county of Migori, located in southwestern Kenya. ASGM in Migori is, however, widely poverty-driven and run by largely informal networks of production, trade, and finance (Buss et al., 2020), and the negative social and environmental impacts, such as mercury contamination and sub-optimal labour conditions, have been well-documented (Ogola, 2002; Odumu et al., 2014; 2018).

The Impact Facility (TIF) - a sustainability organisation - aims to rectify these negative impacts in Migori County through its Lake Victoria Gold Programme (LVGP). In contrast to previous efforts to install traceability of minerals and 'certify' 'high-performing mines', TIF employs an incentive-based and business-led approach to socially, environmentally, and economically empower 'the most marginalised' artisanal miners (TIF, 2020). The LVGP is based on two intertwined objectives: creating an investment-conducive environment for ASGM, and incentivising 'self-regulation' of incremental Environmental, Social, and Governance (ESG) improvements (TIF, 2021). In short, they do so by leveraging access to techno-finance (mining technology) to increase productivity, with the 'incentive' to unlock additional techno-finance for artisanal miners 'in return' for ESG improvements (ibid.).

Overall, TIF forefronts a self-described 'novel' governance approach to ASGM through incentive-based self-regulation and incremental ESG improvements. By doing so, the LVGP is seen as a programme that provides the 'necessary' technical and financial underwriting for ASGM operators[1] to reach otherwise 'near-impossible' ESG criteria (TIF, 2021). As more practitioners calls for business-led development for the ASM sector (Planet Gold, 2020), important questions arise regarding whether, indeed, the LVGP can represent a 'novel' means of 'improving' ASM, by yielding 'sustainable' mining practices, or if it equally fails to deliver improved socio-economic and environmental conditions facing ASM's operators as previously trialled standards-based responsible mining initiatives (Childs, 2014a).

In order to encapsulate such questions, the scholarship of poststructural political ecology of ASM provides a useful approach to holistically capture dominating, interacting, and diverging narratives between global-local stakeholders that underwrite, justify, and undermine programme interventions (Hook, 2019a). Neoliberal eco-governmentality - as a strand of poststructural political ecology - can be particularly useful to explore the rationale behind an incentive- and market-based development intervention and, thus, its strategy to govern 'desirable' human action in relation to nature (see: Fletcher, 2017). Using neoliberal eco-governmentality to explore 'novel' approaches to ASGM can be an important quest to explore new, accessible, and meaningful 'responsible mining' strategies with the wider ASM sector, further underpinned by the ever-increasing global reliance on ASM-mined minerals (Morante-Carballo et al., 2022).

[1] **ASM operators** refers to in this thesis as the collective term for mine managers and mine workers.

1.2. Purpose, aim, and research questions

As introduced above, there is a need to explore potential 'novel' attempts to 'improve' mining practices in the ASM sector. The purpose of the thesis is, therefore, to critically examine the governance strategy of the TIF's LVGP and how ASGM operators in Migori County, Kenya, as the 'target group', perceives and acts upon such a strategy. To enable the analysis and achieve this purpose, the thesis employs the theoretical framework of neoliberal eco-governmentality to explore two underlying objectives. The first is to comprehend TIF's governance strategy in terms of how programme investors and implementers rationalise and justify the LVGP as an intervention to improve mining practices in Migori. The second is to explore how the perception among the ASGM operators towards the intervention represent conforming and/or confronting ways of thinking about problems and solutions to ASGM.

To guide the analysis, the following questions are posed:

> RQ 1.1: How is the Impact Facility and its investors rationalising and justifying the Lake Victoria Gold Programme to 'improve' the practices of Artisanal and Small-Scale Gold Mining operators in Migori, Kenya?
>
> RQ 1.2: How is the rationale and justification of the Impact Facility's Lake Victoria Gold Programme conformed to and/or confronted by Artisanal and Small-Scale Gold Mining operators in Migori, Kenya?

1.3. Outline of thesis

Subsequent to this introduction, the thesis presents the context of ASM, Kenya's gold mining sector, and TIF's LVGP. In the third section, the thesis presents literature outlining the overarching debate that problematises ASM discourse and intervention. In the fourth section, the thesis presents the theoretical framework of neoliberal eco-governmentality, followed by some methodological reflections in section five informing the analysis of findings, presented in section six. In the seventh section, the thesis discusses the findings in relation to the wider debate on ASM derived from the literature review in section three, to understand whether, indeed, the LVGP can represent a 'novel' means of 'improving' ASM. Section seven also presents a final reflection on the implications of this thesis and the final concluding remarks.

2. Background

2.1. Contextualising Artisanal and Small-Scale Mining

Artisanal and Small-Scale Mining (ASM) has received increasing attention amidst global commodity booms and its concurrent expansion (Hilson, 2016). Between 1999 and 2018, the sector went from involving 13 million people to 40 million globally (IGF, 2018). It is often referred to as populated by independent miners, operating with or without a legal licence, using handpicks to exploit everything from gold in East Africa, diamonds in South Africa, and cobalt in Central Africa (Lahiri-Dutt, 2018a). Despite representing the second largest livelihood activity in sub-Saharan Africa (SSA) (second only to agriculture), the ASM sector has received a noticeably low proportion of development aid relative to its socio-economic contributions (Hirons, 2011).

To meet the surging demand for mineral-based technologies, many multinational mining companies (MNMCs) have equally 'herded' to SSA countries (Hilson, 2019). Large-scale industrial mining (LSM) has been viewed by SSA governments and the international donor community (such as the World Bank) to represent the central catalyst for mining-based rural socio-economic development, redrafting fiscal policies and mining codes to stimulate foreign investments and MNMCs (Hilson et al., 2014). LSM operations have entered into direct competition with millions of ASM operators, causing conflict over land use and access to mineral deposits for which ASM operators are almost always at a loss (Andrews, 2018). Consequently, the wider ASM sector remains 'crippled' by its informality, outcompeted, and persistently overlooked in global (regional and local) development policy (Hilson, 2016).

Amidst growing tensions over land, scholars, media, non-governmental organisations, and human rights activists report wide-ranged displacement and dispossession of ASM operators (Geenen, 2014). Additionally, over time, the sector has become more frequently associated with many so-called 'social and environmental ills' (Fraekland Vagnes, 2018). These include environmental degradation, such as mercury contamination (e.g., Cordy et al., 2011), child labour (e.g., Sovacool, 2021), atrocious labour conditions (e.g., Smith et al., 2016), sexual exploitation (Bashwira et al., 2014), and smuggling of minerals with ties to organised crime (e.g., Wakenge et al., 2018). Therefore, proponents of sustainable development have called for action to formalise and dedicate more resources to the wider development of the ASM sector and the millions of people who operate in it (Hilson & Maconachie, 2020a).

2.2. Contextualising gold mining in Kenya

Kenya has not been considered a mining economy historically. However, gold production, in particular, has tended to increase substantially between 2000 and 2020 (OEC, 2023). In 2020, gold accounted for $413 million of Kenya's annual exports, making it the third largest export commodity (in value $) after coffee and flowers (ibid.). Notwithstanding its increasing significance to Kenya's economy, the mining industry has since long been a low-priority sector for the Kenyan state (Abuya, 2017). Until 2016, the reigning legislation for mining was the 1940 Mining Act, codified by the British Colony and Protectorate of Kenya to attract MNMCs and foreign investments under the so-called 1930s and 1940s 'gold rush' in Kenya (Roberts, 1986).

Most LSM companies left Kenya post-independence in 1963, with a few returning to perform exploration and prospecting[2] activities in the 1980s and 1990s (Mwita, 2023). Most of Kenya's gold deposits, therefore, remain largely 'untapped', which was used as an argument to update and reform the 1940 Mining Act to re-attract MNMCs and foreign investors into the sector in 2016 (Republic of Kenya, 2021). To date, however, the largest output of gold production in Kenya is done through Artisanal and Small-Scale Gold Mining (ASGM) (ibid.). The 2016 Mining Act, recognising ASGM as an important socio-economic activity in Kenya, represents the first legislation in Kenya that codifies mineral rights for ASGM operators (ICJ, 2020). Until then, participation in the informal ASGM sector had been illegal (Odumu et al., 2018). To date, the government has, however, (still) not issued permits which, in practice, makes it 'forbidden' to, e.g., engage in mineral dealings (ICJ, 2020).

There are about 140.000 ASGM operators in Kenya, and an estimated one million people depend on the livelihood it generates (Planet Gold, n.d.). Most miners are located in the Lake Victoria Gold Fields that are shared with Tanzania and Uganda. The main practice is hard rock mining, meaning gold is extracted from solid rock ore (US EPA, n.d). To separate the gold from the ore, most miners either use mercury amalgamation[3] or cyanide leaching[4]

[2] **Prospecting** refers to the 'physical search' for minerals, using e.g., geological surveys to 'find' deposits.

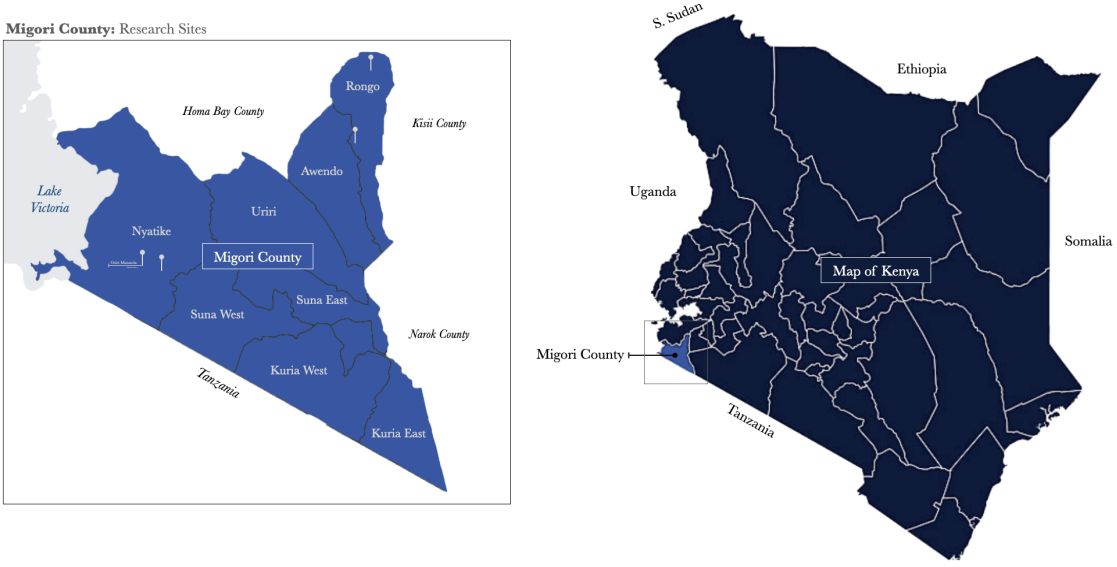
[3] **Mercury amalgamation** is a processing method which entails mixing mercury with gold-concentrated mass (usually by hand), which creates an 'amalgam' (a 'mix') which is then heated (burnt) to vaporise the mercury and obtain the gold (UNEP, 2012).

[4] **Cyanide leaching** is an 'emerging' practice in Migori, but is significantly more expensive and complex than mercury amalgamation. In short, the 'gold mass' is leached with various chemicals, including cyanide, to extract heavier concentrations of gold (SGS, n.d).

(Odumu et al., 2011). Most miners still operate without a legal mining (or processing) permit, meaning that despite declarations made in the 2016 Mining Act, ASGM in Kenya is still largely informal and unregulated.

Migori County is one of the most concentrated mining regions in Kenya. The Migori Gold Belt, part of the Lake Victoria Gold Fields, has attracted many people in the last few years alone (Buss et al., 2020). Most mines are so-called 'colonial shafts' that are concessions exploited by various MNMCs during the 1930 'gold rush' in Kenya (ibid.). The Migori County Artisanal Miners Cooperative (MICA) is the main 'Sacco[5]' for mining, although most miners operate independently under small businesses, mining on land rented from either families, individuals, or the government (Mitchell, 2020). The case study of the thesis includes four independent mine businesses, all active investees of the Lake Victoria Gold Programme (LVGP) of the Impact Facility (TIF). Figure 1 below shows a county map with pins on the specific mine/research sites located in the sub-counties of Rongo and Nyatike.

Figure 1: Map showing the research sites/mine sites as part of this case study



Map created by the author (2022).

[5] Swahili for Cooperative - a form of Community-Based Organisation (CBO)

2.3. Contextualising the Impact Facility's Lake Victoria Gold Programme

TIF is a global sustainability organisation founded in a joint venture by TDi Sustainability and the Fairtrade Foundation in 2018. Its main objective was to target mines who 'could not' qualify for the Fairtrade certification, and to bring "social, economic and environmental empowerment to artisanal and small-scale mining communities" (TIF, n.d.). The main proposed solution is an 'inclusive' incentive-based and business-led approach, recruiting donor finance and private investment capital to fund projects designed to improve mine productivity in 'previously neglected mining communities' (ibid.). In this context, such a solution is viewed as a gateway to better working conditions, environmental protection, and improved health and safety outcomes, "both of which empower mining communities to break the cycle of poverty for good" (ibid.).

The LVGP was introduced in 2021, based on two intertwined objectives. First, to create an investment-conducive environment for ASM, meaning that ASGM operators are partnered with to ensure that they fulfil the appropriate technical criteria for receiving capital investments over time and from various financial institutions; and second, to incentivise miners to access such finance by improving their Environmental, Social and Governance (ESG)[6] performance. The programme is implemented through an equipment lease-to-own model, by which ASGM operators can access 'appropriate modern technology' that can be repaid over time and, at the same time, support business performance. The model is run through a leasing company, where ASGM operators (after approval for investments) gain access to finance through equipment ('techno-finance').

The second objective, referring to the 'incentive-based approach' to ESG performance, is operationalised by connecting ASGM operators with 'technical experts' who can guide them through an incremental improvement trajectory referred to as the "Impact Escalator" (see Figure 2 below) (TIF, 2021). The Impact Escalator is divided into three levels of performance, each derived from global Voluntary Sustainability Standards (VSSs). Each 'level' represents a set of ESG criteria that, when fulfilled by an ASGM operator, will unlock additional access to finance (through equipment) to the mine in question. As Figure 2 below shows, these criteria refer to four various levels of VSSs: (a) know-your-client (KYC)/due diligence, which is the

[6] The ESG criteria include the following themes: Legal Compliance, Good Governance, Financial Management, Decent Work, Social Responsibility, and Environmental Stewardship.

'bar to entry' for mine sites to be enrolled in the programme, (b) basic level, with criteria from the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas[7]; (c) intermediate level, with criteria from the Swiss Better Gold Association (SBGA)[8] standards, and ultimately (d) advanced level, with criteria from Fairtrade/Fairmined/CRAFT[9] standards.

Figure 2: The Impact Escalator of the Impact Facility

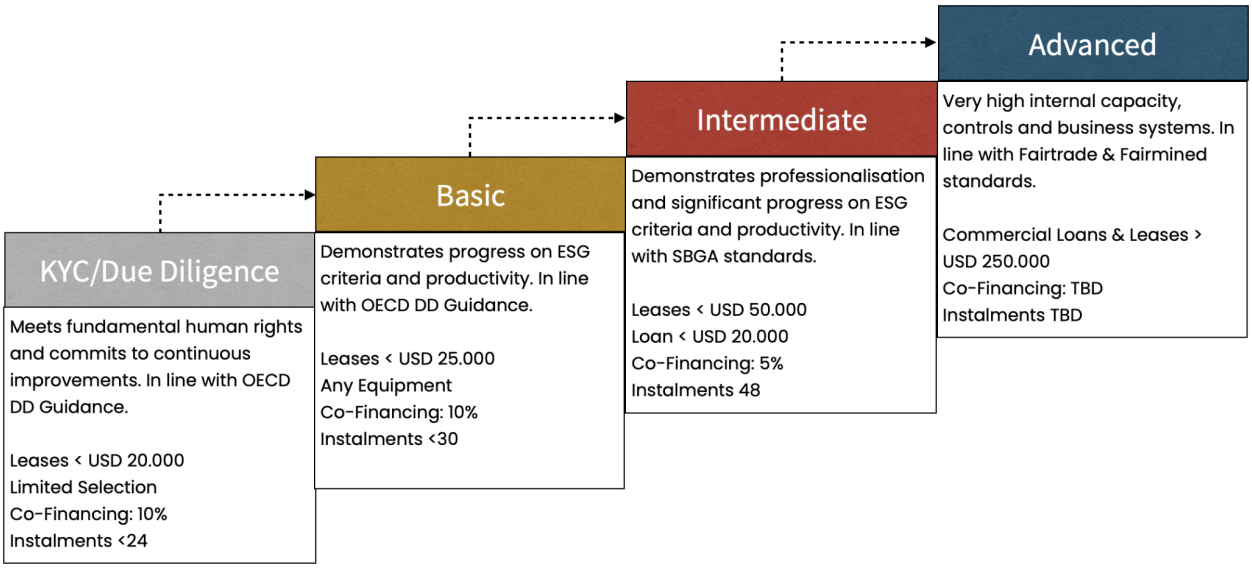


Figure adapted from the Impact Facility (2021). Made by the author (2022).

Currently, all ASGM operators as part of the TIF's LVGP fall under the first category: Know-your-Client (KYC)/Due Diligence level, and have been part of the programme for more than a year (early 2022). Thus, none of the ASGM operators meets all criteria required to qualify for a "basic" level of ESG performance. All of the ASGM operators have, however, committed to a so-called Continuous Improvement Plan (CIP), which is a technical guidance document including proposed interventions for the mine to reach the next level and, thus, qualify for additional investments (once, in combination with the above, the previous investment has been fully repaid). Certain rudimentary standards must be met under the KYC level to qualify for the first round of investments. These include business registration, *application* to requisite legal mining permits, and basic human rights safeguards.

[7] Detailed recommendations to help companies respect human rights.
[8] Criteria that outlines fundamental social and environmental baselines for 'good gold mining'.
[9] Certification criteria (requirements) developed by Fairtrade and Fairmined respectively.

3. Literature review

This section critically reviews the literature relevant to the thesis. The first part compiles a review of the various conceptual contributions to problematise the global discourse on Artisanal and Small-Scale Mining (ASM), showcasing how narratives and tropes have shaped much of ASM policy. The second part explores a specific strand of responsible mining initiatives to understand how the global discourse is expressed in emerging efforts to 'improve' the ASM sector through 'standards'. The third part includes literature that points to interrelated dimensions of responsible mining initiatives and the local realities of miners, and how they often conflict.

3.1. Discourse, 'primitivism', and non-compliance

Despite having existed for centuries, there is no consensus on what constitutes ASM to date (Marshall & Veiga, 2017). The most commonly referenced definition, made by states, international agencies, and MNMCs, is according to its characteristics: it is 'low-tech', 'low-mechanised', 'labour-intensive', 'informal' and 'illegal' (Chigumira, 2018). Early narratives, which prevail today, were coined by the World Bank in 1996, described as "the most primitive type of informal, small-scale mining, characterised by individuals or groups of individuals exploiting deposits - usually illegally - with the simplest equipment" (d'Avignon, 2018:180). Hilson (2016) highlights that to date, ASM operators are still framed as 'rouge' businessmen choosing informality for their own 'quick economic gain' in donor circles. Many scholars have, against such definitions, problematised this discourse as a colonial trope of 'technological primitivism' (Sinding, 2005; Peša & Ross, 2021; Côte, 2023).

D'Avignon (2018) traces the discourse back to colonial Africa, showcasing how colonial officials denoted 'customary mining' as primitive work methods of the 'savage native'. Using the example of Senegal, d'Avignon (ibid.) note that 'as long as customary mining' substituted 'modern industry', it was the moral obligation of colonial officials to 'improve' and 'modernise' the exploitation process (to generate more royalties[10] for the colony). Today, Huggins (2016) notes, artisanal miners are (still) rarely seen as custodians or pioneers of their natural resources (such as industrial miners are). In contrast, the 'primitive' narrative not only declares ASM operators as less skilled in the effective production of natural commodities but also as less rational in doing so in 'responsible' ways (Hirons, 2011).

[10] **Royalties** are a form of 'mining tax'.

Embedded in this narrative, the dominant approach to ASM reform is preconditioned on authority-based (state) solutions, also called formalisation (Siwale & Siwale, 2017). The formalisation paradigm is premised on the idea that most environmental and social problems associated with ASM "stem from the fact that the sector is predominantly unregulated and operates outside the legal sphere" (Maconachie & Hilson, 2011:293). This is based on the so-called 'legalist economism' epistemology, which is practically expressed by 'bringing' ASM operators into the legal sphere (formal sector) and redefining the conditions of 'legal mining activity' (Siegel & Veiga, 2009; Hilson & McQuilken, 2014; Maconachie & Conteh, 2020). Further, legalist economism departs from the view that *informal* actors are 'irrational' and can, thus, be guided towards 'rational' and 'responsible' modes of behaviour through appropriate institutional design (Hook, 2019a; 2019b; Scoones, 2016).

The emergence of 'responsible mining' similarly derives from the central discourse of legalist economism, argued by Hirons (2020) to be underpinned by the ontology of Global Environmental Management (GEM). GEM suggests that natural resources can be exploited 'sustainably' through formal regulation and marketisation (see also: Sauter & Hiete, 2019). As argued by Spiegel (2017), these means are understood both to be desirable and possible to 'rectify' irresponsible practices associated with ASM (see also: Putzel et al., 2015). In other words, formalisation and marketisation of ASM activities are understood as imposing order on natural resource activity by means of enforcing and incentivising land use practices that correlate with environmentally, socially, and economically 'responsible' norms of behaviour (Clausen et al., 2011; Masson et al., 2013). At the same time, these norms make a valued distinction between behaviour that is 'responsible formal' and 'irresponsible informal' and, in effect, criminalises the latter (Huggins, 2016).

This logic has been codified in wider global reform frameworks for ASM, such as the Minamata Convention on Mercury Elimination, denoting formalisation as intrinsic to better mercury management (Spiegel et al., 2015). Similarly, the OECD Due Diligence Guidance places formalisation in the centre of compliance to, inter alia, 'best practice' to respect and fulfil human rights (Singo & Seguin, 2018). In other words, 'good' social and environmental behaviour and practices are moralised by such global frameworks and reinforced through legal measures defined by the state (Lahiri-Dutt, 2018a; 2018b). Thus, the prevalent notion of ASM has been its non-compliance with 'good' social and environmental behaviours and

practices, informing governance regimes that seek to punish and deter such non-compliance using the means of law and enforcement (Spiegel, 2012). In that context, a vast body of research has directed attention to the role of standard-setting in ASM reform. This is explored below.

3.2. Standards, 'best practice', and responsibility

Alongside heavily funded formalisation schemes in SSA countries, voluntary forms of regulation (driven mainly by non-governmental organisations) have become a celebrated complementary tool for ASM reform (Hilson et al., 2016a). These initiatives are premised on the assumption that (formal) market incentives will socialise artisanal miners into both *'wanting'* and '*be able*' to become professional, formal, and responsible businesses (Fisher & Childs, 2014). Historically, this has been done by means of certification and traceability[11] schemes to connect responsibly ASM-mined minerals with consumers (Childs, 2014a). *Standards* are at the heart of voluntary regulation, also referred to in ASM contexts as global Voluntary Sustainability Standards (VSSs) (McQuilken, 2016).

The responsible mining agenda, and the 'emergence of standards', have been highlighted by scholars to emerge due to various reasons. These include conflict minerals, also referred to as '3TG' (e.g., Deberdt & Le Billion, 2021); action against alleged terrorism and guerilla links with ASM (e.g., Schroeder, 2010); threat to corporate reputation that is related to negative social and environmental impacts of mining (e.g., Buxton, 2013); and increasing consumer demand for 'responsibly' and 'sustainably' produced minerals (e.g., Van Bockstael, 2018). According to Fisher and Childs (2014), each aspect brings standards and traceability to the front. Combined with various 'sustainability' objectives for ASM such as poverty reduction, 'responsible' mining as well as 'clean' value - and supply chains are seen as means to that end (Le Billion & Spiegel, 2022).

Standards can be seen as a means of quality assurance, differentiating minerals by ethical value (Fisher & Childs, 2014). This ethical valuation can entail various labels, such as corresponding to the above-listed 'problems' (e.g., 'conflict free') (Deberdt & Le Billion, 2021). Standards as quality assurance, therefore, become central to risk management of, e.g., of

[11] Also referred to as 'Chain of Custody' solutions, which entail so-called 'identity tracing' of minerals. In practice, this means that minerals are separated and labelled accordingly throughout the entire supply chain (from the 'gold mine' to the neck, as it were).

retailers and consumer brands (Fox et al., 2005). Furthermore, implementing standards in ASM contexts is practically expressed through sensitising various codes of conduct based on the assumption that compliance with 'responsible' behaviours is best done through self-regulation and incentives (Sippl, 2019). Therefore, emphasis is placed on the power of standards to "govern the conduct at a distance" (Fisher & Childs, 2014:132).

A plethora of ethical and responsible mining standards frameworks, such as OECD Due Diligence Guidance, have been launched, with differing objectives, interests, and methods (Spiegel, 2017). Hence, there is no uniform consensus in the literature on how the term 'responsible mining' can be conceptualised (Broad, 2014; Goodland, 2012). Essentially, however, they represent normative frames of reference for 'best practices' in the mining industry and mineral supply chains (Van Bockstael, 2019). These normative frames have inevitably created new non-state metrics of governance in the ASM sector (Childs, 2014b), which are 'ethical' and technocratic, voluntary and controlling, and inclusionary and exclusionary at the same time (Dolan, 2010). To Le Billion and Spiegel (2022), they embolden neoliberal rationalities of depoliticising structures of social differentiation and unequal global market dynamics.

Tallontire (2009) further denotes this as a point of contestation for attempting to balance commercial objectives with development needs. Standards as quality assurance of responsibly mined minerals are almost always based on the precondition that miners are, at the very least, formalised (since 'formal' is assumed to entail 'rational') (Elbel et al., 2023). A related body of literature, therefore, points to the high barriers to entering the formal market, related to the exorbitant costs of mining permits and the technical requirements in securing, inter alia, rights to mineralised land (Hilson et al., 2016a). As argued by Hilson et al., (ibid.), in the rare instances where miners are able to secure a licence, they must also completely reorient their practices to comply with 'near-impossible' certification criteria to be rendered 'responsible' miners (see also: Fisher, 2018).

Therefore, some critically denote standards-based approaches as reproducing inequalities between mine operators for the sake of 'downstream' consumer and retailer risk management (e.g., LeBaron & Lister, 2022; Van Bockstael, 2018). In other words, it is argued by scholars such as Baka (2017) that normative logics of standards inevitably disqualify

communities whose land use practices seemingly contradict the logics of formal and 'responsible mining' (see also: Calvão et al., 2020). Similarly, formalisation has repeatedly been argued to exacerbate the regulatory marginalisation of miners (Geenen, 2014; 2018; Hilson & Banchirigah, 2009). Ghana's 'galamsey' (miners with a 'defiant subterfuge towards the law') is often used as an example of 'criminalising impoverished miners' (Andrews, 2018). Ghana, with particularly strong enforcement of formalisation, has outright criminalised participation in the informal gold mining sector, which represents the majority of miners (Eduful et al., 2020; Banchirigah & Hilson, 2010).

As argued by scholars such as Verbugge (2015), formalisation agendas have, therefore, tended to favour wealthier ASM operators whilst leaving the majority of the ASM workforce entrenched in a criminalised setting of informality. Consequently, certification schemes have been equally critiqued for only targeting mine operators which are already formal, relatively well-mechanised, and productive, referred to as the ASM sector's 'low-hanging fruit' (McQuilken, 2016). This is, to some, a manifestation of the complex distinctions of 'rational', 'ethical', and 'responsible' values made in standard-setting and formalisation designs (Hilson et al., 2019). Below, literature that centres on this critique is reviewed, especially where it relates to the diversification of 'discourses' regarding logics of development in the ASM sector.

3.3. The dynamic local realities of ASM

As denoted by Hirons (2011), there is a wide variety of 'alternative discourses' that demonstrate that logics and standards imbued in policy reform, such as formalisation and responsible mining agendas, are far from universally accepted (see also: Hook, 2019a). This body emphasises the issue of how local realities and socio-economic relationships, values and interests that constitute miners' livelihoods shape the effect that reform has on processes of socio-economic transformation (Viteri & Arce, 2013). As argued by scholars such as Le Billion and Spiegel (2021), Hilson et al., (2016a) and Fisher and Childs (2014a; 2014b), standard-informed reform agendas, both authority-based and voluntary, have widely failed to adequately adhere to, accommodate, and disrupt or navigate pre-existing complex and informal local networks and realities.

These local realities, showcased by Lahiri-Dutt (2018b), represent highly evolved inter-relationships between informal and formal actors, global (formal) markets and local (informal) markets. Mining businesses are themselves governed by various professional and social hierarchy norms, differentiated by mine managers, land owners, and young diggers, washers, and blasters (Ofori et al., 2021). Trade and finance are often regulated through local informal markets, which in some cases can be exploitative (see: Geenen, 2013) and, in other cases, highly dynamic (see: Geenen et al., 2021). Nonetheless, they are often based on personal relationships, mutual trust, and interests between various stakeholders (McQuilken, 2016).

Alternative discourses, therefore, materialise in dissent against misdiagnosis and poor understanding of local realities (Hilson et al., 2016). Programme narratives underpinned by distinctive valuation of what is ethical or fair, responsible or viable, have for example often highlighted that the 'status quo' of informal networks of finance and trade are exclusively unfavourable for miners (Medina et al., 2009). In a case study in Tanzania, Childs (2014a) showcased the divergent understandings of 'fair prices' between Fairtrade and ASGM operators. 'Fair prices', offered by Fairtrade, had little chance of competing with the local networks run by the 'makota' (local traders) which, at times, provided *'higher'* prices than promised by Fairtrade (ibid.). In the same context, Fisher and Childs (2014) showed how reluctance and mistrust of erstwhile interventions which had promised, and 'failed' to bring 'fairness' to ASGM operators influenced the perceived legitimacy of the intervention.

Similarly, efforts to 'greening' the ASM sector have been widely unsuccessful in doing so (Hook, 2019b). Hilson and Vieira (2007) exemplify this in the context of 'mercury elimination programmes', which showed that there are significant material limitations (such as finance) to secure 'mercury-free technology', which is a 'benchmark' for good environmental practices in gold mining. Hook (2019a), in the case of Guyana, also showed that gold miners widely questioned the efficacy of 'mercury-free technology' and, at the same time, remained ambivalent about the reported 'health effects' of its usage. Programmes that place stringent demands on miners, noted by Hilson and Pardie (2006), have oftentime failed to recognise mercury as 'an agent of poverty'.

This strand of literature also emphasises that the inability of miners to access, inter alia, credit, mineralised land, and permits required in contexts of formalisation and responsible mining initiatives are, in fact, central contributing factors to continuous ecological degradation (Hilson et al., 2017). Governments have, therefore, been heavily critiqued for not providing the necessary technical and financial support to enable ASM operators to secure necessary land rights and licences to obtain legal mining permits (Siegel & Veiga, 2010; Abdurashidovic, 2020). At the same time, the 'criminalisation' of informal ASM has created deep rooted sentiments of distrust to perceived legitimacy of (any) reform agendas and a subsequent 'refusal' to comply with its policy narrative (or standards) since there is little incentive for miners to do so (Geenen, 2012; Veiga et al., 2014).

Mistrust and perceived illegitimacy of reform exists also in countries where state capacity (or political will) to 'install' formalisation has been limited (Spiegel, 2012). In effect, the lack of effective institutional capacity by governments to issue permits, support prospecting, and facilitate 'inclusive' formalisation has equally been shown to create distrust among miners towards the perceived legitimacy of reform (Spiegel et al., 2018). This perception is further reinforced by entrenched corruption in local governments (Crawford & Botchwey, 2017), as well as perceived unfairness regarding distribution of benefits from large-scale mining (Clifford, 2022; Pedersen et al., 2019). The latter is especially prevalent in contexts where LSM companies are issued prospecting and land rights, whilst ASM operators are largely left without access to the same (Verbrugge et al., 2015; Kemp & Owen, 2019).

A final related body of literature has, therefore, emphasised how socio-economic factors such as poverty that condition miners' participation in the ASM sector (Maconachie & Binns, 2007) heavily influence ecological outcomes such as mercury mismanagement (Dondeyne & Ndunguru, 2014). The social conditioning of mining is, in turn, highly political and unequal, exacerbated by structures of criminalisation, regulatory marginalisation, and exclusion from e.g., customary land rights (Hirons, 2011; Pijpers, 2014). In this vein, established 'technical metrics' of manageable solutions that seek to reorient (punish and/or incentivise) ASM operators into certain behaviours remain incognisant to these dynamics, which is an inherent challenge for non-governmental organisations which, additionally, possess little to no power to affect such wide-ranged and structural problems (Geenen, 2012; Spiegel, 2015; Bulkan & Palmer, 2016).

4. Theoretical Framework

Having, thus, presented the context of the study as well as a wide body of literature concerned with various issues associated with Artisanal and Small-Scale Mining (ASM), this section presents the main theoretical tenets employed in this thesis. In the context of exploring a 'novel' approach to voluntary regulation for ASM through the case of the Impact Facility's Lake Victoria Gold Programme (LVGP), understanding the dominating, interacting, and diverging narratives that underwrite, justify, and undermine such an approach becomes an important task in furthering the critical responsible mining literature. As will be explained below, the theoretical framework of neoliberal eco-governmentality can be a relevant tool in realising this task.

4.1. Neoliberal eco-governmentality

Neoliberal eco-governmentality originates in post-structural political ecology, a school of thought widely used to study how power operates in society-nature relationships (Valdivia, 2015:467). Governmentality, as understood by Foucault (2008), refers to the relationship between 'governance' and 'ways of thinking' (Nightingale & Ahlborg, 2018). In other words, it refers to the way power operates through dominant forms of knowledge, denoting the political act of delineating what is considered true or valid, which in turn shapes behaviours, values and beliefs accordingly (Svarstad et al., 2018). This process designates 'self-regulation' of the 'subject' who self-govern according to internalised norms and responsibilities of those who govern (Robbins, 2011:76). Thus, highly influenced by Escobar (1996) and the works of Foucault (2008), neoliberal eco-governmentality place special emphasis on how discourse and practices of, for example, sustainable development both are influenced by, and rearticulated through, norms of 'capital and technoscience' (Fletcher, 2010).

Neoliberalism, in this sense, is a political project that calls for the intervention and regulation through market-oriented policies to environmental management (Winkel, 2012). It stipulates the creation of incentive structures (such as regulation and intervention) that motivate individuals, understood as self-interested and rational actors, to exhibit 'appropriate' behaviours (Fletcher, 2010). In other words, human-nature relationships are governed through incentives, such as economic growth, that will motivate and encourage a self-regulating (or self-governed) 'rational' individual to maximise their material utility through a cost and benefit analysis (McGregor et al., 2015). For example, nature can only be

protected if the self-interested individual calculates it as the most beneficial course of action. The commodification of nature is, therefore, a central concept to neoliberal eco-governmentality, denoted as 'nature as a means for economic ends' (Smessaert et al., 2020).

Few scholars have explicitly employed a neoliberal eco-governmentality approach to ASM, although many post-structural scholars have utilised the main tenets of neoliberal sustainable development to critically analyse various neoliberal 'solutions' (Hook, 2019a). These scholars have importantly sought to, inter alia, expose and explore various technical metrics that are used to "frame" solutions to ASM as manageable and specifiable, that are at the same time failing to adhere to wider political-economic structures (see e.g., Le Billion & Spiegel, 2022; Hirons, 2011; 2020; Hook, 2019a). In this context, Hook (2019a) calls for further attention to be brought to how programme interventions are designed to re-shape desires and behaviours of miners as 'subjects' to comply with more 'responsible' behaviour (i.e., 'formation of identities') and subsequently, how such interventions are perceived, conformed with, and/or confronted by miners through alternative human-nature relationships manifested by narratives.

4.2. A typology of neoliberal eco-governmentality

Neoliberal eco-governmentality as a theoretical framework can be divided into four interconnected analytical categories, each capturing a specific regime of governance practice that make up the study of 'programmes' as a governance strategy (Oels, 2005; cf Dean, 2003). These four categories include the following: (a) fields of visibility, exploring how the programme implementers narrow aspects of 'reality' within a specific context into a set of self-described problems that must be rectified, (b) technical aspects, exploring how the project implementers propose a set of technical solutions to those problems that are within the capabilities of the implementer to solve, (c) forms of knowledge, exploring how narratives of 'improvement' of the programme implementers are privileged over other 'local' forms of knowledge and (d) formation of identities, exploring what type of 'subjectivity' is sought in an actor who is *subject* to the governance strategy.

4.2.1. Fields of visibility

The 'field' refers predominantly to how programme implementers narrow down a 'reality' that is only made visible through their narrative (Oels, 2005). In other words, it refers to the identification and framing of a set of self-diagnosed 'problems' made by programme implementers within a specific context of intervention (Li, 2007:7). This constructed 'reality' is sequentially used to rationalise and justify an intervention, including proposed solutions which are available ('only') to the programme implementer (ibid.). In a neoliberal context, this problematisation can be understood to be underpinned by various factors that impede self-regulating entrepreneurial individuals to both maximise productivity and manage natural resources appropriately (Fletcher, 2017).

4.2.2. Technical aspects

As indicated above, technical aspects refer predominantly to how 'solutions' to self-described problems, including social, environmental and economic, are depoliticised and delineated to a set of technical instruments available to the 'expert' (Oels, 2005; Li, 2011). Programme implementers, therefore, position themselves as 'experts' able to identify 'problems' that are to be rectified in a target 'subject' of an intervention (Le Billion & Spiegel, 2021). The context of intervention, including its targeted group is, sequentially, limited to a 'technical domain' that is 'manageable, governable, and actionable' to the programme implementer (Li, 2007). This is referred to as 'rendering society technical' (Le Billion & Spiegel, 2022; cf. Li, 2011). In a neoliberal context, 'technical instruments' can be understood as denoting market performance, and benchmarking[12] including standards of 'best practices' as central aspects to 'incentivise' competition and economic growth (Lloro-Bidart, 2015).

4.2.3. Forms of knowledge

A 'form' of knowledge can be understood as a set of statements and justifications underpinning the co-emergence of problems and solutions (see above) (Oels, 2005). More importantly, however, it encapsulates how narratives of 'improvement' made by programme implementers are privileged and hierarchical to 'alternative' narratives of improvement that might prevail in a context of intervention (Li, 2007; 2011). These 'alternative' narratives can be understood as 'local forms of knowledge' promoted by 'subjects' of an intervention -

[12] **Benchmarking** can be understood as performance indicators that are measured against that which is considered 'best practice' (in this case operationalised by VSSs), seeking to improve the overall competitiveness of a company (Passos & Haddad, 2013).

narratives which are often obscured in the design and implementation of a programme (Hirons, 2011). In a neoliberal context, the role of neoliberal principles of privatisation, commodification, and benchmarking performance standards tend to be privileged in attempts to rectify social, environmental, and economic problems (Coucke et al., 2022).

4.2.4. Formation of identities

The fourth, and last, analytical category refers to the formation of identities, asking predominantly what forms of 'self' is presupposed by practices of governance (Oels, 2005). The formation of identities in the wider frame of governmentality is operationalised by the practice of "subjection" and subjectivity (Foucault, 2008). The "subjection" of one actor by the one that governs can be understood as a self of individuals who are modelled in the context of an intervention, *becoming* and *remaining* calculating and responsible individuals who seek to increase their competitiveness in a "constant strive for self-optimisation" (Li, 2007:31). In a neoliberal context, such subjection is understood to take place as a process of 'nurturing' an 'entrepreneurial self' driven by productivity that seeks to maximise utility (Dilts, 2010). Appropriate environmental and social management is presupposed to become self-regulated by subjects through incentive structures since it will be in the subject's best interest to do so (Lave, 2011).

4.3. Applying the framework

As underlined by Buschman and Oels (2019), the typology of neoliberal eco-governmentality can be used to holistically capture dominating, interacting, and diverging narratives between stakeholders that underpin, inform, and justify programme interventions. It is a useful framework to, in particular, understand the role of discourse in governance strategies that, through different techniques and rationales, 'produce and reproduce a reality to be governed' (Li, 2007:277). In the context of ASGM in Migori, fields of visibility and technical aspects can relevantly 'expose' tactics of narrative creation to understand how the LVGP is designed, and justified, to 're-shape' practices of miners and, in the process, 'produce' and 'nurture' a certain environmental subject that will 'self-regulate' 'responsible' mining practices. Equally, forms of knowledge and formation of identities can enable analysis that voice alternative narratives of miners which are conforming and confronting at the same time, and both reinforcing and undermining the 'dominant' form of knowledge and presupposed self in the governance strategy (Hirons, 2011).

5. Methodology

This section presents and reflects on the research design and subsequent methodological choices made in this study. First, an overview of the research design is provided, followed by research method and data, including sampling, data collection, and data analysis. The last part places special emphasis on ethical considerations made, and methodological limitations of the applied research design.

5.1. Research design

Since it is the purpose of this thesis to explore narratives of different stakeholders in relation to the governance strategy of TIF' the Lake Victoria Gold Programme (LVGP), the study has adopted a qualitative case study research design. The reason for this choice is because of the possibility to gain an in-depth understanding of how people interpret a given complex phenomenon (Moon, 2016). The exploration of narratives, therefore, is crucial in the quest to understand how TIF and its investors are rationalising and justifying LGVP to 'improve' the mining practices of ASGM operators and how the ASGM operators, in turn, conform and/or confront such rationale and justification (Given, 2008). Moreover, the distinguishing factor of a *case study* relies on the objective to 'elucidate' specific characteristics in a specific phenomena, known as an idiographic approach (Bryman, 2012:69). In this case, the given phenomena is the LGVP and the unit of analysis is limited to the stakeholders involved in the LGVP.

5.2. Research method and data

5.2.1. Sampling process

Given the nature of this study, to disclose and interpret perceptions and experiences of different stakeholders in relation to LGVP, four sample clusters (SCs) have been selected. These include: investors of the LVGP (SC_1), programme implementers of the Impact Facility (SC_2), ASGM managers in Migori County (SC_3), and ASGM workers in Migori County (SC4). The sampling was initially informed by purposive sampling, according to the baseline that SCs were either a beneficiary, implementer or investor of the LVGP as stipulated by the research questions (Campbell et al., 2020). Based on this criteria, snowball sampling was further used to sample the interviewees after initial contact with key informants had been conducted (Noy, 2008). The sampling ended once theoretical saturation was reached, meaning no significantly different or relevant data emerged (Rowlands et al., 2016). All SCs

were subject to semi-structured interviews and the two latter SCs (mine managers and ASGM workers) were also subject to a survey questionnaire and participant observation (see 5.2.2.) to help contextualise the case study (i.e., locality of Migori County), which will be further elaborated below. The full list sample clusters, interview and survey participants can be found in Appendix A.

5.2.2. Semi-structured interviews

Semi-structured interviews are widely seen as a useful data collection tool in qualitative research since it enables researchers to obtain in-depth data of interviewees narratives, lived stories, and experiences as told, constructed, and defined by the interviewee (Balushi, 2017). The data collected through semi-structured interviews in this thesis include 24 interviewees, all of whom are involved in the LVGP in various capacities. The investors (SC_1) include six either active or prospective investors of the LVGP. The programme implementers (SC_2) include three active practitioners of TIF, which is the implementing organisation of the LVGP. The mine managers (SC_3) include seven active investees of the LVGP, and eight ASGM workers (SC4) at those mine sites. The questions directed towards each sample cluster originated in specific interview guides (see Appendix B for full collection of interview guides). The questions enveloped the same topic, i.e., the perceptions of the LVGP and mining practices in Migori County, and were formulated to reflect the specific role each cluster of stakeholders represented. The questions were, furthermore, open-ended to allow for adequate representation of the interviewees worldviews (Bryman 2012:468).

5.2.3. Participant observation and survey

A central aspect to poststructural analysis is the contextuality of the field site's social, cultural, political and economic environment (Krug & Hepworth, 1997). Participant observation can be an important tool to that end, by contextualising everyday practices, behaviours, actions and interactions of research participants (Punch, 2005). During visits to Migori, I attended everything from community meetings of miners from the locality, to Occupational, Health and Safety (OHS) trainings and ESG assessments conducted by TIF. Various observations were made through field notes, including reflections that also could support the formulation of interview guides (Bryman, 2012:447). Furthermore, informal conversations and other unstructured visits were valuable contributions to inform sampling beyond key informants (Kapiszewski et al., 2015:239).

The survey is not statistically significant, meaning it does not cover a saturated sample of the population of miners in Migori County. The data is, therefore, not treated as quantitative, but rather as contextual indications informed by qualitative analysis (Jansen, 2010). The survey included 53 respondents, sampled through snowball sampling and covering different miners with different occupations of mining across Migori County and was conducted together with TIF. It had demographic, occupational and financial questions, as well as key challenges facing everyday participants in their everyday work (see Appendix C). In other words, it included both structured and open-ended questions to be used as a precursor to the semi-structured interviews held with miners (Braun et al., 2021). Thus, it helped contextualise and identify initial themes of e.g., challenges by miners explored further through aforedescribed interviews (ibid.).

5.3. Data analysis

A common data analysis technique in qualitative case studies is thematic analysis (Ibrahim, 2012), also utilised in this thesis to organise and interpret the data that emerged from the aforedescribed data collection. The thematic organisation of the data was done through various stages, initially informed by site visits, sequential participant observation, survey questionnaire and eventually semi-structured interviews. The data processing, thus, followed an iterative process of going back and forth between analysis and data, to also avoid presumptions (Mayring, 2004:271). This helped inform redefinitions of priorities and sharpened the focus for the overall data analysis (Stewart-Withers et al., 2014). The data was later transcribed, thematically analysed and coded through three stages using the software Nvivo. The first round of thematic coding identified common thematic nodes of the data, respective to each sample cluster. The typology of neoliberal eco-governmentality was utilised in the second round of coding, organising the data through the lens and principles of the theoretical framework. The third, and last, round of coding refined the thematic organisation (see Appendix D for coding scheme).

5.4. Limitations & positionality

There are many factors that can influence (and limit) research, which are foundational to how the findings presented in this thesis should be treated and seen (Darwin Holmes, 2020). The first limitation refers to the role of gatekeepers in the data collection phase of this research. As Andoh-Arthur (2019) notes, gatekeepers can have a significant influence on

interviewees whilst at the same time being crucial to gain access to participants. I had two predominant gatekeepers, including TIF to gain first contact with mine sites and later the mine managers, to connect with their workers. Whilst preemptive and diligent pre-visit conditions of access were established with both gatekeepers (see: Singh & Wassenaar, 2016), permission by a gatekeeper might not always equal the consent of workers (see: Dahlke & Stalkhe, 2020). Bearing this in mind, I made clear that participation in the research was voluntary and that every participant, including workers, was allowed to decide for themselves whether they wanted to engage or not.

Important aspects of positionality may also have stark influence on the research limitations (Darwin Holmes, 2020). For example, whilst I made clear that I was conducting my independent research, the presence of practitioners from TIF as facilitators and interpreters could influence respondents to romanticise or exaggerate answers (Schech et al., 2018). All interviews with miners were, therefore, conducted without the presence of practitioners from TIF or a mine manager where relevant. Notwithstanding, I was sometimes inevitably seen to be associated with TIF which might reinforce the same. This is also noticeably due to the fact that I, as a foreign researcher[13], sometimes were asked for remuneration in return for participation. Thus, my positionality as a foreign researcher and implicit association with TIF might have affected the answers of the miners as some expected direct benefits for participating in the study (ibid.). I was, thus, always clear about my intentions behind the study as well as the confidentiality of the study from the scrutiny from any other third party (including TIF).

At the same time, I observed a clear bond of trust between practitioners of TIF and miners in Migori, potentially due to the practitioners also being locals. Together, they invaluably guided me through appropriate behaviour in various interactions, some conversational words in Dholuo[14] and Swahili to ease language barriers, and to build trust[15] between myself and the participants. This also made interactions more enjoyable, relatable, and participatory even if the vast majority of participants spoke English fluently (Mclennan et al., 2014). Further, the enormous effort made by the team at TIF to translate interview guides

[13] Or 'Mzungo' (white person), as I was commonly referred to.
[14] Dholuo (of the Luo tribe) is the primary language spoken in Migori, alongside English and Swahili.
[15] After staying in Migori for a longer period of time, I was eventually greeted with eagerness to share stories and an overwhelming support for my studies.

and surveys into Swahili facilitated most language barriers faced during the interviews and/or survey questionnaire. Illiteracy, which was particularly evident among the women, further, was countered by participation of a female translator that provided verbal readings and support of communication.

5.5. Ethical considerations

Notwithstanding the various tactics employed to make the research as accessible as possible, there are further limitations and considerations related to the ethics of the research. This is especially important given the sensitive political nature of ASGM in Migori County. Precautions of anonymity and confidentiality have, therefore, been strongly valued in this process, whereby no points of reference, such as names, to the people engaged in the study can be identified in the findings or appendices of this thesis. Furthermore, all participants received a brief prior to any participation in the interviews or surveys to ensure informed consent (Ferreira & Serpa, 2018). *Verbal* consent was sought before every interview or survey questionnaire was conducted. The consent form can be found in Appendix B. Each participant was also given the opportunity to retract their consent at any point in time. The data was, furthermore, stored safely (e.g., transcripts kept offline) and confidentially (e.g., survey responses in paper locked in and kept away from third parties) (Scheyvens et al., 2014:184-189).

Lastly, some important considerations of intersectionality and coloniality must be made. There is a clear objective in this thesis to *voice* perceptions, experiences, and narratives of what many have homogenised as 'artisanal miners' (d'Avignon, 2018). As a non-miner, non-Kenyan, and non-Luo, it is central to (re)emphasise the limitations I have in the articulation and full representation of respondent's ontology and epistemology (ibid.). This includes certain aspects of my positionality that, in my interactions with participants, (re)create modes of privilege as a white male (Windsong, 2016). Additionally, the 'coloniality' of knowledge is equally important here, which directs special attention to how 'ways of knowing' have been 'colonised' and 'marginalised' through dominant discourses (Dorpenyo, 2019). To the best of my ability, the data collection has, therefore, been made with these considerations in mind; carefully designing questions that are sensitive to context and communicating findings as representative of the interviewee's voices (Sheyvens et al., 2014:197).

6. Analysis of findings

This section presents and analyses the findings of the Lake Victoria Gold Programme (LVGP) case study. The data, including 24 semi-structured interviews, 53 survey responses and participant observation, has been analysed, processed thematically, and presented according to the analytical categories in the theoretical framework of neoliberal eco-governmentality. The objective is to respond to the following research questions, the first (1.1) addressed in the first part of the analysis (6.2., 6.3) and the second (1.2) in the second part (6.4., 6.5).

> RQ 1.1: How is the Impact Facility and its investors rationalising and justifying the Lake Victoria Gold Programme to 'improve' the practices of Artisanal and Small-Scale Gold Mining operators in Migori, Kenya?
>
> RQ 1.2: How is the rationale and justification of the Impact Facility's Lake Victoria Gold Programme conformed to and/or confronted by Artisanal and Small-Scale Gold Mining operators in Migori, Kenya?

Before delving into the analysis of findings, this section is introduced with a few contextual aspects relevant to the broader understanding of the analysis, including livelihood strategies and central challenges to those identified by artisanal miners. Following the introduction, the analysis presents findings under (6.2.) fields of visibility: problematising non-investability, (6.3.) technical aspects: the 'techno-finance' fix, (6.4.) forms of knowledge: diverging narratives? and (6.5.) the formation of identities: the "entrepreneurial and investable miner" as a subject. The analysis is lastly concluded by summarising the findings (6.6.). These findings are later brought together in section seven of this thesis, connecting the analysis of findings with the broader academic literature presented in section three.

6.1. Setting the scene

The context of analysis in this thesis is ASGM in Migori County, Kenya. The sample of miners represents 68 individuals who undertake different roles in the ASGM sector, including what is referred to as mine managers that tend to be older (40+) and workers that tend to be younger (<30 years old). The workers include machine operators, underground

diggers, female washers, and gold processors. As the survey indicates, none of the miners in this sample operates with a formal mining permit. The informality of their ASGM operations is most commonly referenced as a central challenge for miners, which is elaborated in 6.4., of this analysis.

ASGM is undoubtedly an important livelihood activity for the miners in this sample. Most miners indicate that they are permanent workers, with gold mining as their primary occupation. Many also indicate that they utilise the livelihood generated from mining to support other livelihood activities (64.4 per cent), such as, in particular, subsistence agriculture (93.3 per cent). Mining, therefore, represents an important factor for their household's food security, as well as being able to, e.g., pay for school fees. For many mine managers, gold mining represented an opportunity for financial security, as well as wealth creation for regional development. However, over half of the respondents also indicated that they do not feel safe at work, referencing, in particular, unstable shaft structures, toxic fumes from ore blasting, and exposure to various chemicals such as mercury.

Many respondents and interviewees particularly highlighted that, whilst mining represents an important source of income, its subsistence nature makes work dangerous and volatile. Most workers are paid through rock ore sharing arrangements, creating a 'you eat what you mine' system (interviewee 23). These arrangements are, consequently, making people take additional risks to secure their ore share of the day (interviewee 18). As the central management of the mine, mine managers struggle to keep production consistent due to a lack of equipment and financing for operational costs, and inconsistent rainfall causing flooded and unstable shaft structures. Production therefore does not (usually) transcend more than a few grams of gold per month.

6.2. Fields of visibility: problematising non-investability

To recall the theoretical framework, fields of visibility refer to how programme implementers and investors identify, frame and rationalise a set of problems that must be rectified in a specific context (Li, 2007:126). 'Problematisation' is reflected in discourse, connecting the intervention with the problems it will solve (ibid.), elaborated in 6.3. Therefore, this section presents and analyses the findings from the sample of programme

implementers and investors (SC 1+2) of the LVGP to showcase their justification and rationale behind the programme through the theory of neoliberal eco-governmentality.

The livelihood of miners is the principal focus of intervention declared by investors and programme implementers of the LVGP. In the main programme design paper of the equipment leasing model, TIF declares its objective to 'turn mineral wealth into community prosperity', underpinned by the reasoning that the ASGM sector in Migori is understood to be a central catalyst for community development through an 'economic multiplier effect' (TIF, 2020). The paper further declares that the sector's informality is an underlying cause of social problems, placing miners in a cycle of subsistence and impoverishment (ibid.). In other words, the state's failure to provide the necessary infrastructure for miners to access, primarily, formal financial services and market integration, are seen to exacerbate 'social problems' such as poverty.

As a consequence, one programme implementer argued, miners are "forced to proliferate unequal and exploitative informal financial arrangements with informal investors" (interviewee 8). These arrangements are declared to be heavily in the favour of the informal investor, with unregulated and 'unreasonable' interest rates as high as 50 per cent of future profits of gold production (TIF, 2020). Worst case scenario, it is noted, the informal arrangements with "unscrupulous middlemen" place miners in a cycle of debt and continued poverty. The latter is argued to be magnified by the inability of miners, due to the high informal interest rates, to make "much-needed investments in business improvements and equipment that enhances productivity and operational efficiency" (ibid.). This is further illustrated in the quote below, declared by a programme implementer as a core problem prescribed for miners in Migori:

> "There is something of a glass ceiling mine sites hit at the moment in the context of their existing informal relationships [...] which tends towards short-termism, poor quality equipment, and thus worse business performance than they could experience with formal, free, competitive and strategic long-term finance" *(interviewee 8).*

The logic presented in the quote above highlights how informal finance is viewed as a *central* impediment to breaking the subsistence nature of mining in Migori, and thus, reducing

poverty. Additionally, it is argued by TIF that informal investments are "not tied to environmental, social and governance criteria" (TIF, 2020) and, consequently, "there is no inbuilt incentive for ASGM operators to improve their practices" (ibid.). This is further elucidated by one programme implementer as a core rationale for continued harmful practices of e.g., the usage of mercury for gold amalgamation (interviewee 7). Productive inefficiency is, therefore, viewed as a main factor for both low incomes, poor business performance, and a subsequent *dis*incentive to invest in 'responsible' social and environmental practices (interviewee 9).

The main programme rationale is, therefore, heavily contingent on the notion of capital and productive efficiency to correlate with sustainable business performance and responsible environmental management which, as denoted by Jacobs and Manzi (2019), are central tenets of neoliberal eco-governmentality. This rationale is further substantiated by positioning the lack of access to technology as a central factor behind that productive inefficiency. Thus, the LGVP is, by design, illuminating one core aspect - informal finance - that, according to TIF, causes productive inefficiency and subsistence mining. In so doing, the *main* problem is shifted inexplicitly from the reasons as to why financial exclusion has occurred in the first place and, instead, is directed to the 'technical' and 'technological' incapacity of miners to break the cycle of subsistence and, thus being unable to perform 'responsible practices' (interviewee 8).

The aforedescribed problematisation of ASGM, furthermore, induces a key rationale behind the existence of the LVGP: to create an investment-conducive environment for ASGM in Migori. This is argued by TIF to be a foundational objective to make 'development impacts' sustain beyond the termination of donor funding by including the private sector to build long-term 'economic sustainability' of the ASGM sector (TIF, 2020b). This argument is based on the reasoning that the dependence on informal finance has made ASGM operators 'ill-equipped' to manage relationships and expectations related to formal finance from, e.g., investors and financial institutions (interviewee 6). In other words, ASGM operators are seen to 'lack the requisite instruments, as in having relevant track-record, internal business

systems, and financial assurances ('collateral') to receive and repay formal access to finance, to represent investable[16] entities' (interviewee 8).

The 'diagnosed' non-investability of ASGM operators is highlighted by investors of the LVGP to encapsulate two investment logics. The first is the logic of economic viability, which broadly relates to the economic sustainability and risk of business failure, informing investors whether a 'competitive' return (or profit) can be reasonably expected on the investment (Spicka et al., 2018). The second is the logic of ESG viability, which broadly relates to an emerging 'ethical' valuation of investment propositions to 'adhere to responsible practices', informing whether an 'impact return' can be reasonably expected on the investment (Gerard, 2019). The former, economic viability, is intimately related to the perception of 'financial risks' (Fox et al., 2005), and the latter, ESG viability, is intimately related to 'reputational risks' (Leins, 2020). This is illustrated in the quote below:

> "So the ultimate question is: how do we build a viable business model that will attract other forms of formal finance? But it's just not easy to attract in the six and seven figure sums for something that is such a highly controversial area and where you have very little track record that points to the proper management of such finance" *(interviewee 1).*

The quote above represents a central notion in the findings that argue that the non-investability of ASGM operators is not solely contingent on material factors, such as a weak financial asset base, but also on behavioural factors ('proper management') such as a 'mindset of short-termism' as a consequence of weak financial asset base. The mindset of 'short-termism' is argued to be a symptom of low profitability, meaning miners are seen to "[...] have a relatively short horizon when it comes to the kind of evaluation of what's best for them in the long-term" (interviewee 3). In other words, ASGM operators are framed as 'incapable' of cultivating long-term (formal) investments and providing both financial and 'ESG' assurances for the sustainability of their business and, thus, financial and 'impact' returns (interviewee 3). The 'controversial' reputation of ASGM as a synonym to, e.g.,

[16] **Investability** can broadly be defined as "conditions that are conducive to a higher level of investment and refer principally to the business environment in which economic agents operate" (Begg, 2002:187).

environmental degradation, is argued to further magnify the 'reluctance' by investors to make 'meaningful' investments into the sector (interviewee 5).

Many investors in the sample referred to the logic of economic and ESG viability as a 'herd effect' of *impact investing*. One interviewee (6) explained this as a 'first-mover disadvantage' in impact investing in contrast to commercial investing, where there is a 'first-mover advantage' to being an early investor in a viable business case (potential for high returns). The first-mover *dis*advantage can be understood as the risks and potential drawbacks associated with investments made into a new or risky market (Robins, 2012:15). ASGM, explained by one interviewee, is considered to be both a controversial (and risky) business and a 'new market' for investments (interviewee 1). Thus, investment valuation must be done with ESG considerations in mind (interviewee 3) in order to attract higher levels of investment into ASM. The quote below exemplifies this:

> "It's less of a trade-off and more complementary because I don't think a concession model that involves both charitable and impact concession finance stacks up unless it prioritises ESG, what we broadly call responsible practice. There is no TIF unless they can say that they're investing in the ESG, and that they're making operational improvements to health and safety and environment along the way" *(interviewee 1)*.

Programme implementers of TIF broadly conform to this notion, stating that "it [TIF] wants to see change, which is broadly coherent with downstream expectations of market performance [...] which we can only do by diagnostics and understanding the existing performance of mine sites in line with those criteria[17]" (interviewee 8). Diagnosing ESG (under)performance is, as aforedescribed, seen as contingent upon the financial and operational (in)capacity of ASGM operators. The subsistence nature of ASGM in Migori is broadly referred to as "hindering appropriate environmental practices" (interviewee 9), with *productive inefficiency* as a central underwriting factor. Since the financial yields are low, the interviewees further argue that miners "neither have the technical knowledge to improve nor the capacity or willingness to do so" (interviewee 7).

[17] Referring to the ESG criteria outlined in the Impact Escalator (recall background).

The findings presented above, therefore, broadly point to how investors and programme implementers of the LVGP frame, in primacy, productive inefficiency as a central problem to both poverty (subsistence mining) and non-investability (economic and ESG viability). While inherent political and socio-economic factors (informality) are recognised as causing precarious livelihood conditions of ASMG operators, the 'problem' is that there is (currently) no *incentive* for miners to engage in 'responsible' practices (defined through ESG standards). The wider 'field of visibility', then, can be seen as a narrowed reality of a marginalised space (the ASGM sector) which is currently *unproductive* and *unprofitable*, populated by 'incapable' ASGM operators to *become* productive, profitable, responsible and investable *on their own*. The next section will explore how the programme intervention is tied to these self-diagnosed problems.

6.3. Technical aspects: the 'techno-finance' fix

To recall the theoretical framework, the technical aspects in a programme intervention stipulates creating external incentive structures to motivate 'subjects' to voluntarily choose 'appropriate' practices (self-regulation) (McGregor et al., 2015) which, in turn, is measured and enforced through benchmarking and 'best practices' (Lloro-Bidardt, 2015). As noted by Li (2007:31), these technical solutions are intimately framed to correspond with the defined problems that are within the range of the self-appointed technical expert to rectify. Therefore, this section presents and analyses the findings from the sample of programme implementers and investors of the LVGP to understand the formulation and implementation of 'solutions' to the aforedescribed 'non-investability' of ASGM operators in Migori through neoliberal eco-governmentality.

To reiterate the background of the LVGP, TIF employs an investment and incentives-based approach to the social, economic and environmental empowerment of ASGM operators in Migori County. In order to support ASGM operators to become *investable* by becoming *productive* and *responsible*, TIF declares two primary 'solutions' that reflect the aforedescribed diagnosed 'problems'. The first is facilitating access to equipment finance (techno-finance), which is seen as central to 'boosting' productivity and profitability as well as enabling strong and 'responsible' mining businesses. The second objective is to construct an 'investment-conducive environment', demonstrating to 'downstream investors' that

ASGM operators are investable, meaning "they can receive a form of financial support and repay that over time" and comply with 'internationally recognised ESG criteria' (interviewee 8).

The first solution - access to techno-finance - is predicated on the idea that ASGM operators will *choose* to improve mining practices, such as safeguarding health and safety for workers or driving mercury elimination, only if there is an *incentive*[18] for them to do so. In other words, the leasing of 'modern' gold mining equipment is expected to result in financial benefits for ASGM operators and sequentially *encourage* them to gradually engage (and 'invest') in 'responsible' practices. This lays the foundation for the second solution, which addresses both the aforedescribed economic and ESG 'unviability', reassuring investors that investments into ASGM in Migori will yield both financial and 'impact' returns. This is further illustrated in the quote below by an investor:

> "You can't just give them a loan and then let them do whatever they want to do with it. Because in the worst-case scenario they're going to buy a few balls of mercury and that's not what you want. So you have to use incentives and at the same time have a certain control over what impact the money is going to have, e.g., on the environment, the livelihood of individuals and their communities" *(interviewee 3)*.

The quote above reiterates not only that an economic incentive is needed to gradually improve mining practices but also that such improvement needs to be controlled according to the rationale of investors/implementers. TIF codifies this (controlled) incentive through legal means of contract signing. The contract outlines provisions of obligations, including financial obligations (repayment), and non-financial obligations (ESG commitment). The former is supposed to manage financial risk (economic viability) and the latter reputational risk (ESG viability) in an investment proposition. The latter is also regulated by a 'code of conduct[19]' that ASGM operators must sign in the onboarding process. This is further complemented by an ESG assessment that assures the investment committee[20] of the LVGP

[18] Recall background: "the better a mine performs against the Impact Facility's ESG escalator, the bigger the financial offering to them" (TIF, 2020:2). This is an example of benchmarking.
[19] The code of conduct includes a declaration that the ASGM operator does not, e.g., engage in corporal punishment, does not tolerate child labour, and is committed to the elimination of toxic chemicals.
[20] Every investment proposition must be approved by an investment committee.

that the prospective investee is compliant with respect for, e.g., 'basic' human rights. In case of non-compliance to the aforementioned contractual obligations, the equipment can be retracted by TIF, which can be seen as a means of *dis*incentivising non-compliance.

The various techniques employed to 'manage risk', whether financial or reputational, are strongly influenced by the 'need[21]' to 'prove' that ASGM operators 'can comply' with responsible management of both financial and, e.g., environmental provisions. A common view among the sample of investors and programme implementers is that this objective relies on the ability of TIF to distinguish between irresponsible, illegal, and non-investable cases from responsible, investable businesses. This 'differentiation' is done through a 'screening' process of TIF, establishing the threshold for what is considered a prospective *investable* mine (interviewee 8). This, in turn, establishes technical metrics of what is considered an 'appropriate investment proposition', exemplified in the quote below:

> "The success of demonstrating that there is an investment case to be done [in ASGM] relies on the strength of our due diligence processes to screen out unsuitable investees and also minimise the risk of default[22], late payments, and so on" (*interviewee 8).*

At the same time, an 'appropriate investment proposition' also stems from the rationale that there are 'universal' ways of 'best practice', which, in turn, is defined through 'internationally credible and legitimate' standards of ESG performance. Through TIF's Impact Escalator, OECD Due Diligence Guidance, Swish Better Gold Association (SBGA) and Fair Trade Standards are, thus, reinforced as 'universal' norms and values of 'responsible' mining practices that, regardless of the context, apply to all people and cultures (see: Ward, 2013). Thus, 'ESG' norms are (re)declared as quintessential for responsible mining. In so doing, TIF also positions itself as 'facilitators' for universally accepted assumptions of 'best practice', which ASGM operators must (and 'will') comply with in order to obtain 'higher levels of investment' into their mining operations, which is further illustrated below by a programme implementer:

[21] Recall the objective to 'create an investment-conducive environment for ASGM'.
[22] Referring to a situation where an investee would 'fail' to comply with the obligations outlined in the contract (and is used to justify retraction of equipment).

> "What do we mean by responsible mining? We mean batches of performance which are already recognised by downstream partners as having credibility, such as OECD, SBGA, and Fair Trade. We bring that to life through incentivising access to finance, and guiding mine sites through those different pathways of performance" *(interviewee 8).*

The quote above further exemplifies how TIF is positioning itself as 'knowing' how to bring about the well-being of others, which is defined as committing and fulfilling ESG criteria and, thus, engaging in 'responsible mining'. In so doing, TIF is implicitly drawing a line between those that *ought* to improve (ASGM operators) and those with the 'know-how' or 'expertise' to *perform* improvement through technical assistance (see: Li, 2007). Additionally, *environmental, social, and governance* 'problems' are concentrated to a set of technical criteria which, in principle, can be 'fixed' by means of guidance through the 'different pathways of performance'. This is further reasoned to encourage long-term adherence to 'good practices' since ASGM operators are, eventually, expected to 'self-regulate'. This is exemplified in the quote below:

> "[I]f the motivation [to meet ESG criteria] does not come from within and it comes from us, then it will be a loss because eventually when we leave them after a year or so, they will drop the gun and say: it's the Impact Facility's initiative not our own initiative. So we are here only as experts to provide technical assistance" *(interviewee 9).*

A central aspect of this facilitation is the assumption that ASGM operators, once producing sufficiently to yield 'enough' profits, will *become* capable of self-regulating responsible practice. The wider narrative of 'improving' mining practices is, therefore, inherently placed on the *individual* entities/subjects to both 'improve' their *own* situation and to conform to ESG criteria (i.e., individual responsibility). In other words, positioning access to techno-finance as a rectifying solution to precious livelihood conditions of AGMS operators inexplicitly obscures potential 'structural' political and socio-economic problems that underwrite such conditions (see: Li, 2011). It 'detaches' individual ASGM operators from its inherently informal context and assumes their eventual capability of (on their own), once 'productive', can rectify the broad set of problems that underwrite the ASGM sector.

Thus, the 'solution' of providing access to techno-finance is positioned by the TIF as a 'fix' proffered to mitigate social and environmental harm in ASGM activities (see: Markusson et al., 2017), as well as 'break' the subsistence[23] cycle of ASGM operations (see: Yue et al., 2020). Beneath this logic, according to neoliberal eco-governmentality, is the idea that ASGM operators will calculate, as 'rational actors', that the supposed increased productivity of gold mining will maximise utility and, thus, outweigh the cost of *not* being enrolled (or 'stay' compliant) with the LVGP (see: Fletcher, 2017). Additionally, since the 'terms of repayment are better' than informal financial arrangements, another assumed 'benefit' is that ASGM operators can end reliance on 'unscrupulous middlemen' (recall: Childs, 2014a).

The findings presented above, therefore, widely point to a 'technical delineation' made between those ASGM operators which can be deemed suitable versus unsuitable, viable versus non-viable, investable versus non-investable, and responsible versus irresponsible. The logic pertains that those that are 'rendered' suitable in the screening process, are also reflective of the 'universal' criteria of possible compliance. Within the 'space' of 'suitable' investees, 'responsible practices' are argued to be reasonably expected since the subject is deemed 'rational' (or conscious) enough to respond to the incentive provided through access to techno-finance. Furthermore, TIF and its investors are also implicitly delineating between those that deliver improvement through claimed expertise and those who need to improve. Such delineations can be viewed as techniques to create a 'technical space' within which an entity can be governed, managed and steered towards practices deemed appropriate for an investable and viable subject (see: Le Billion & Spiegel, 2022). In contrast, those that are rendered unsuitable (by means of screening) therefore fall outside the scope of what is considered rectifiable within the capabilities of the implementer.

6.4. Forms of knowledge: diverging narratives?

To recall the theoretical framework, forms of knowledge refer to how various forms of thought are privileged in the context of a programme intervention (Oels, 2005). So far, the analysis has showcased a field of visibility (problematisation), used to rationalise and justify an 'intervention' into the ASGM space in Migori County (technical fixes). As presented

[23] And thus 'solve' aspects of 'income poverty'.

above, the corresponding 'narrative of improvement' centralises access to techno-finance, increased productivity, and investability at the forefront for 'responsible mining'. Bruckmeier and Tovey (2008) highlight how the essential self-proclaimed expertise (of TIF) to justify a programme intervention tend to privilege a form of knowledge, and, therefore also obscure other (local) ways of thinking about problems and solutions (see also: Hirons, 2011; 2020). To understand what is obscured, but also what is conformed to or confronted, the following two sections seeks to understand how miners perceive the aforediscussed improvement narrative of the LVGP.

The findings derived from the interviews and survey with ASGM operators, showcase how miners describe their livelihood as precarious (recall 6.1.). Most refer to gold as the 'main' resource of their area (Migori), and that mining represents a central, sometimes the only, opportunity to sustain their livelihoods. Many young workers saw mining as a stepping stone to fund college education, and older mine (business) managers viewed mining as providing financial security. However, productive insecurity is widely referenced across the sample as a central obstacle to achieving the various personal objectives of miners. The 'capital-intensive' nature of 'productive' gold mining is, therefore, centralised as the main reason to what many of the miners (also) refer to as the 'subsistence nature' of mining in Migori. For the mine managers, this was the main 'reason' for 'seeking' to engage with TIF's lease-to-own model, exemplified in the quote below:

> "Because we are not all equal here. There are some laws as to our case that we are not "financially fit". We have to have some form of method of getting finance and to get someone to support us and our production. Because the government is not doing it. I cannot go to a bank. That is why I know that the Impact Facility's programme is good" (*interviewee 15).*

As the quote above illustrates, the mine managers broadly subscribe to the notion that miners desire 'access to finance'. Similarly, it is commonly argued among the mine managers that the government's lack of accountability and poor market infrastructure are central impediments to problems associated with low production, which in turn hinders 'good' environmental management. In other words, 'transcending the threshold of subsistence' (interviewee 13) is largely seen to be, equally, intrinsic with 'making enough profits to be

financially able to *care* for the environment (interviewee 15). This exemplifies not only how nature as a 'consumable commodity' (i.e., the economic value of gold as a natural resource) is widely accepted and internalised, but also that 'nature as an ecosystem' can 'only' be protected through the maximisation of the former (Robbins, 2011). This suggests how the 'commodification of nature' as a central discourse, also propounded by TIF by incentivising environmental protection through claimed increased productivity, is widely embraced by miners (see: Smeassaert et al., 2020). This is represented in the quote below:

> "Mining activities have very adverse effects on the environment, we know this. Eventually, you will be getting one thing [gold] and losing another [good environment]. But if you look on the other side of it in terms of development the moment people are doing things right [making a consistent profit from production] you will start using part of that profit in protecting the environment. Otherwise, if there isn't much somebody's making it will be like a chase. Every time, every day, chasing for profit and profit. When you're in that stage, you won't care much for the environment" *(interviewee 16).*

As illustrated in the quote, economic growth through increased production is constructed as a necessity to protect the environment. However, there is a central issue of contention in the narratives between TIF's and the miners around LVGP's main proposed solution: access to techno-finance. Whilst 'lack of equipment', indeed, is recognised by the miners as a central problem to productivity; it only tells parts of the story. Instead, miners declare their frustration with broader structural factors that underwrite the political-economic context of mining in Migori. In other words, the informality of the ASGM sector in Migori has led to a profusion of inferred problems such as 'landlordism', 'lack of prospecting data', and unequal trade terms. This frustration implicitly challenges the notion that increased productivity as *intrinsic* with 'better' mining equipment will proffer 'improved practices'. This is exemplified in the quote below:

> "When the Impact Facility comes and say organise your business, start mining, keep records, and we will give you machines. I will do that very quickly. But my main motive will not be helped: we need permits, better prices, prospecting data, to assure

> us that they are not coming to aid us, they are coming to assist us to improve our mining" *(interviewee 13)*.

The inability of miners to secure a mining permit, and to be 'legally recognised', most mine managers explained, is foundational to most social and environmental problems in Migori. To exemplify, the lack of prospecting data shapes what Geenen (2018) denotes as 'the power of uncertainty'. In other words, the miners in Migori describe mining activities as 'guess-work' meaning that "nobody *knows* if gold is actually there, because we do not have the geological survey" (interviewee 12, *emphasis added*). The 'curse of not knowing' where the 'good gold reef' is located, is further argued to exacerbate problems such as low productivity and can cause 'rushes' to potential deposits causing "unnecessary degradation" (see: Hook, 2019a).

In the same vein, miners expressed a form of resentment towards large-scale mines and the government to "withhold prospecting data" and "access to mineralised land" (interviewee 18) because of "competitive interests" (interviewee 16). This frustration is furthered by the argument that miners are placed in something of a legal grey zone where mining is concerned, as illustrated as: [w]e are treated as criminals but we are not arrested for doing supposed illegal mining" (interviewee 11). Since miners do not have mining permits, the majority across the sample argued that they cannot access support from geologists, sell gold to 'formal' traders[24], nor obtain loans to cover operational costs of the mining activities. Additionally, it is noted by several mine managers that they are placed in the 'power of the landlord' who, despite 'formal' land rental agreements, can "evict us at any point in time since we are not legally permitted to mine" (interviewee 13) if terms are perceived 'unfavourable' for the landowner.

The plethora of challenges facing miners as a consequence of informality is, therefore, widely seen to stretch 'far' *beyond* that of lack of equipment (even if it is viewed as an important part of it). Additionally, the informality is declared by miners to cause a wide range of issues that are 'beyond' the capabilities of the individual miner to rectify. In other words, the insecurity of mining gives rise to a variety of practices which are deemed harmful

[24] To recall the background of the 2016 Mining Act in Kenya, without a mining permit, people are not 'allowed' to engage in mineral dealings.

both for workers and the environment (Verbrugge & Geenen, 2019). One example oftentimes referenced by miners are overcrowded shafts, since all workers are 'responsible' for their own ore share[25] of the day (interviewee 21). Since mine managers cannot guarantee profitable yields, workers are sequentially 'moving around' across various mine sites looking for the best reef (interviewee 24). Decentralised production also entails fragmented processing, meaning that individual workers oftentimes process their gold (with mercury) in various locations (interviewee 23).

The mobile nature of workers and the subsequent decentralised networks of production and processing, therefore, showcase how social and environmental problems are *transboundary*, meaning it 'transcends' the individual property of a mine site (and thus, also, the 'technical' space delineated by TIF) (Clifford, 2011). Inevitably, this 'blurs' the lines of 'responsibility' and 'accountability' for compliance to various social and environmental standards (Van Bockstael, 2014) expected by TIF. Sequentially, many mine managers question the 'individualistic' focus of TIF's ESG provisions (recall non-financial obligations) since they repeatedly find themselves at a disadvantage to 'fulfil' or 'comply' with such criteria due to structural issues following the informal nature of ASGM. The 'enforcement' of certain criteria, such as mandatory usage of personal protection equipment (PPE) is widely seen to *further restrain* competitiveness and productivity of the mine, since workers (who cannot afford PPE) would choose not to work at their mine site (interviewee 10). This is further explored in 6.5., below.

These sentiments (re)confirm the value placed on productivity made by miners, as well as the variegated forms of challenges that informality brings about. In essence, however, it also showcases that miners largely conform to the same 'form of knowledge' proposed by TIF that increased productivity is of central importance to fulfil ESG criteria, despite contesting the level of efficacy provided by the 'sole' access to techno-finance. The 'alternative' policy prescription of miners was, therefore, to 'reinforce' the necessity for market and economic-centred policies (further elaborated below). Thus, as will be presented below, whilst confronting propounded solutions such as access to techno-finance, the ASGM operators in Migori *nonetheless* reconfigure themselves within TIF's terms of reference to, e.g., secure further funding from TIF.

[25] Recall the 'you eat what you mine system' introduced in 6.1.

6.5. Formation of identities: the 'entrepreneurial and investable miner' as a subject

To recall the theoretical framework, the 'formation of identities' asks what form of "self" is sought in the actor that is targeted by the intervention (Oels, 2005). In the context of neoliberal eco-governmentality, this can be understood to take place as a process of 'nurturing' a self-interested rational agent driven by utility maximisation using a cost-benefit calculation (Dilts, 2010). To recall, the objectives set out in the LVGP can be seen as a set of techniques to 'nurture' investable subjects by making them 'economically and ESG viable'. ASGM operators are, thus, encouraged not only to rationally commit to financial and non-financial obligations to become a receipt of the intervention, but also to invest in ESG standards to receive further access to techno-finance.

Thus, the intervention - access to techno-finance - seeks to nurture not only an *investable* subject but also an *entrepreneurial* subject that rationally calculate that investing in ESG standards will provide them with supposedly more economic gains, which is the most beneficial course of action to maximise the returns of their efforts (see: Fletcher, 2010). By placing productivity as the solution to precarious livelihood conditions of ASGM operators and assigning 'responsibility' to the ASGM operators who qualify for investments, TIF has 'designed' a programme which seeks to *enable* that entrepreneurship (TIF, 2020).

The findings from the interviews of ASGM operators suggest that, as introduced in 6.4., the rationale for mine managers' 'choosing' to participate in the LVGP is mainly driven by the financial incentive of doing so. This is, as aforedescribed, heavily influenced by the wide-spread 'hardship' miners face by the terms of their 'informal' status. To 'improve' their own livelihoods, most miners view increased productivity as the solution. TIF, offering access to techno-finance, was seen as *one* viable means of supporting this objective. As the quote below illustrates, the mine managers in particular declare a 'desire' to make mining into a business venture, and in doing so finding optimal solutions to that end. In the absence of 'other means of access', the lease-to-own model was, thus, welcomed as such:

> "So the reasoning for joining them was: we will be having this equipment for our own use while paying as time goes, so it was a way to achieving our goals faster as opposed to working in a small way until we achieve a level at which we can now buy

> the items ourselves outright. But now we are able to pay bit by bit and it supports our work then that's why we decided to go for that" *(interviewee 10)*.

As stipulated by neoliberal eco-governmentality, the above quote can be interpreted as a 'cost-effective rational self' responding positively to the incentive of accessing techno-finance since the alternative course of action - to opt out of the programme - was seen as less beneficial (Valdivia, 2015). It further illustrates a common conception among mine managers that to 'move beyond subsistence', higher levels of mechanisation (equipment) were viewed as means of building business resilience (interviewee 11). Dilts (2010) denotes this notion as a (re)confirmation of an 'entrepreneurial drive' for utility maximisation, a 'new' undertaking to increase a competitive advantage (see also: Hilson & Maconachie, 2020b). Consequently, the mine managers noted that the main reason for complying with the financial obligations (repayment) in the contract was done to both avoid retraction of equipment (the 'disincentive') and the potential for 'additional finance' (the 'incentive'). However, most managers, as aforementioned, found themselves reluctant to subscribe to the *efficacy* of access to techno-finance as a *sole* means to, in particular, 'breaking the threshold of subsistence' (interviewee 13).

The logic proposed by TIF that the 'techno-finance fix' will increase productivity, increase business performance, and enable 'responsible practices' seemingly, according to miners, falls short in its foundational assumption: equipment does not *necessarily* equal better production. Whilst the proposition of increased production was argued to be attractive for miners, inspiring them to engage with the LVGP, most mine managers seem to echo the same critique: "machines do not mine, people do" (interviewee 14). Without supplementary funding, denoted as 'seed money', most mine managers 'still' found themselves 'stuck' in the subsistence cycle, despite having received 'modern mining equipment'. This is exemplified in the quote below:

> "You see, mining is not done by machines. It's done by people. Even if I have the machines, I have other costs that are not covered. I need seed money for that. If everything we earn here goes into the repayment of machines every month, how will I pay my workers? How will I pay for gas to keep the machines running? We still

need more support in moving beyond that threshold of subsistence production" *(interviewee 13).*

An 'unintended' consequence of the 'techno-finance fix' was, therefore, that, in order to repay the equipment on a monthly basis, some mine managers noted that they had to turn to other (informal) networks of pooling resources to cover running costs of the machines. Additionally, this 'challenge' to the efficacy of techno-finance seemingly also undermines the 'inbuilt incentive' to commit to, and invest in, ESG improvements. One mine manager argued that ESG provisions are 'time-consuming and costly' and that there 'is no point' in prioritising ESG improvements if production is not consistent (interviewee 15). From a cost-benefit perspective, this sentiment indicates in part that there is currently no financial benefit that outweighs the cost in *choosing* such measures. Additionally, it shows that the incentive of access to techno-finance to facilitate ESG improvements has not been *fully* acted upon as such whilst, at the same time, it (re)confirms the 'need' for *further* finance to *eventually* prioritise ESG improvements.

Furthermore, the findings suggest that there is, at times, a 'reluctance' to entirely 'buy-in' to the narrative of ESG as synonymous with 'responsible practices'. To most mine managers, they were 'already committed to good practices', declaring certain 'unfulfilled' ESG criteria as outside 'their responsibility'. This encapsulated, for example, the management of waste from processing[26]. In other words, there is rather, in part, an 'epistemic opacity' to TIF's 'narrative' of improvement rather than to 'improvement' itself (see: Hook, 2019a). Notwithstanding, most miner managers *still* made 'uninspired' attempts to fulfil the Continuous Improvement Plan (CIP) formulated together with TIF (recall impact escalator). This was done, primarily, with the hope that it would lead to additional finance that could *'eventually'* improve production (interviewee 10). Moreover, the mine managers were also careful to impose TIF's ESG provisions on certain practices onto their workers, exemplified below in the context of occupational health and safety (OHS) provisions:

[26] Since the management of waste from e.g., cyanide or mercury processing was seen to be primarily the government's responsibility.

> "But you cannot force, as in say, punish somebody to adhere to some of these things because then this is somebody who, if he does not work today, he will go hungry and you see if he goes hungry then levels of violence goes up" *(interviewee 10)*.

A worker further exemplified this 'livelihood versus safety dilemma':

> "I have to mine the way I am. You see, I'm a digger. I dig the money out. For me to afford any protective equipment, I need to dig. But if my family is hungry, I need to attend to that first. Protection comes later" *(interviewee 22)*.

The aforedescribed sentiments, or 'fears' of hunger leading to violence were also complemented by a 'fear' of mine managers to 'lose their workers' if they made too many demands. This was particularly highlighted because 'other' miners in Migori would 'never force these things' onto their workers which, thus, declares a 'competitive advantage' to do 'bad mining' (interviewee 13). In other words, the enforcement of certain ESG criteria are seen as a 'cost' to their livelihoods which is *not* outweighed by the 'benefit' of accessing additional finance. This is, however, not to say that the workers or the mine managers 'do not want to do mining better'. Most miners declare that they 'want' to engage in improved gold mining practices, primarily by disassociating themselves from the 'rest' of the miners in Migori. This is exemplified in the quote below:

> "I want everybody here, using this product in our area, to do so in ways which do not kill people. I could easily do shoddy mining here too like everyone else, if money was all I cared about. I could have been rich like them. But because I want to improve gold mining here, I have to pay for it. This is why it's going slower here, but I know I'm reaching there" *(interviewee 13)*.

These 'shoddy miners', as labelled by one mine manager, are referred to what Hilson and Maconachie (2020) would call opportunistic ('get-rich quick') miners who 'ravage' the lands in pursuit of gold and, thus, profits (interviewee 13). Various workers in the sample testify to being forced to work in insecure shafts, without personal protection equipment after blasting (exposed to toxic fumes), and simultaneously being told that "if they don't do it, we'll find someone else" (interviewee 17). These "shoddy miners" are, as such, referred to as

exploiting the poverty and insecure working situation of young workers in the region (interviewee 12), "knowing very well that without work there will be no food to feed our family and children" (interviewee 24). Perversely, these dynamics have created a stifled competition where the 'cost' of conditioning[27] that which is considered 'better practices' is *too high* to outweigh the benefits of 'unconditional access' to shafts.

Programme implementers of TIF, fully aware of these 'shoddy miners', note that, indeed, the miner managers which have formed a relationship with TIF represent a minority of miners in Migori "with a mindset and willingness to do mining better" (interviewee 9) and, thus, fall under the technical definition of 'responsible' subjects that can be 'encouraged' to become, and remain, investable and entrepreneurial (recall ESG and economic viability). Indeed, the miners and the managers can be seen as conforming to this subjectivity by responding to the incentive - access to techno-finance - and further desiring a *'stronger'* incentive to be able to *further* improve their mining practices as laid out in the Impact Escalator. Thus, miners are similarly perpetuating the rationale that, for example, environmental protection and occupational health and safety can only be achieved by making it the most beneficial course of action from an economic standpoint.

6.6. Summary of findings

TIF and its investors have created an improvement narrative for the LVGP, and the ASGM sector in Migori County, Kenya. The narrative - understood through the co-emergence of problems and solutions - places the aspect of 'low productivity' at the centre of its justification (problematisation) and intervention (technical solutions). Lack of access to techno-finance, brought about by informality, is declared by TIF as a *central* impediment to 'thriving mining businesses', as well as *dis*incentivising 'appropriate and responsible practices' of miners. Therefore, TIF rationalises and justifies its intervention by positioning themselves as experts with the 'know-how' of 'universal' ESG criteria, which they seek to deliver through the incentive of access to techno-finance.

At the same time, the findings suggest that the intervention is, also, justified to attract and maintain investors who, in turn, 'expect' economic and ESG viability. To demonstrate to

[27] Such as conditioning workers to wear PPE in exchange for access to the mine shaft.

investors that there can be reasonable expectations on both financial and impact returns, TIF justifies the use of controllable outputs, such as equipment, to 'manage compliance' to both financial (repayment) and non-financial (ESG) obligations. By means of screening, contracting, and 'controlling' investments, TIF is attempting to 'create' and 'nurture' investable and entrepreneurial subjects in Migori. The programme, therefore, hinges on the rationale that 'miners will self-regulate' appropriate financial, e.g., environmental behaviour since it is in their best self-interest to do so (to 'unlock' additional finance).

The ASGM operators of Migori County, in turn, conforms to and confronts this rationale and justification of the LGVP in various ways. Diverging narratives, or 'alternative' forms of knowledge, underpinned by local realities, point to broader political-economic factors which, in the formulation of 'solutions' by TIF, are largely obscured in the LVGP. The factors, mainly underlined by the persistent informality of the sector, undermines the *ability* of miners to conform to, and 'self-regulate', according to the expectations of ESG compliance. This was, in practice, expressed through declaring 'problems' transboundary and political, confronting TIF's exclusive focus on *individual* responsibility. Hence, what is 'known' to constitute 'irresponsible' practices, proposed by TIF to mainly be an issue of 'lack of proper incentives', is confronted by miners to encapsulate highly complex social, political and economic challenges that stretch far beyond *their* responsibility to rectify.

Lastly, although access to techno-finance was welcomed, it was broadly not seen as 'enough' to break the so-called 'threshold of subsistence production' and, thus, 'improve' livelihoods. The 'confrontation', however, did *not* materialise in a call to 'reconfigure' the improvement narrative, but to, rather, *reinforce* the need for market- and economic-centred policies propounded in the technical aspects to *be able* to improve. In other words, the miners *conform* to the *justification* of why the intervention exists in the first place by subscribing to its main rationale (productivity will enable better livelihoods) whilst confronting the *extent* to which the *sole* techno-finance 'fix' will enable such rationale. Hence, miners *sought to comply* with both financial and non-financial obligations since doing so would enable them to *eventually* access *further* finance that would otherwise not be provided. This (re)confirmed both the 'entrepreneurial' drive for utility maximisation and, an 'investable' subject, who 'reconfigured' themselves to 'fit' and 'remain' within the technical metrics of the LVGP despite, at times, being at a disadvantage to do so.

7. Discussion & Conclusion

Having, thus, analysed and presented the findings of the thesis, this section will broadly discuss those findings in relation to the wider literature presented in section three. It will do so guided by the overarching motivation of the thesis: to explore whether, indeed, the LVGP can represent a meaningful 'novel' approach to 'improve' the practices of ASGM or if it, 'inevitably', fails to deliver on its promise as previously trialled standards-based responsible mining initiatives. The section concludes with a few reflections on the implications for future research.

7.1. Discussion

7.1.1. A novel means of improving ASM?

TIF has declared a 'novel' governance approach to 'improve' the practices of ASGM in Migori County, Kenya. The LVGP has been launched in an inherently informal context, a 'space' which has been widely 'out of range' for previous non-governmental interventions (recall: Hilson et al., 2016). Indeed, the landscape of gold mining in Migori remains volatile and precarious, with subsistence levels of production, informal networks of trade, and little to no government presence. The main drivers behind engaging in the mining sector is mainly attributed by miners to hardships facing rural Kenya, with mining representing both a necessary means to secure livelihoods (see: Hilson & Maconachie, 2020b) and an opportunity for wealth creation (see: Geenen, 2018) for individuals and communities in the wider region.

The necessity and informality of mining, however, underlies risk-taking, driving miners to operate in insecure settings and with toxic means such as mercury (recall: Hilson, 2006). This has placed miners in a perpetual relationship between securing livelihoods and life-threatening situations (see: Hirons, 2011). In the absence of formal channels to access, for example, finance, TIF has positioned itself as a central actor of expertise to provide 'well-needed' technical and financial support to 'break the cycle of poverty' for good (TIF, 2020). As self-declared by TIF, they are doing so without 'imposing' expectations and, as the findings suggest, adhere to the 'criminalisation' narrative of *informal* miners (recall: Huggins, 2016). Instead, miners are framed as 'entrepreneurs' of their own environment who, with the 'right' incentive, will *choose* to engage (and self-regulate) 'responsible social and environmental practices'.

Importantly, the TIF's lease-to-own model was broadly perceived by miners as a welcomed means to support their businesses. As the findings suggested, the baseline rationale behind the programme was broadly conformed with by miners: subsistence production is a central problem that impedes the possibility of making gold mining into a 'better' livelihood activity. The perceived legitimacy of the justification, therefore, was, in its foundations, accepted and acted upon as such (e.g., Childs, 2014a). However, the findings analysed and presented in the thesis showcase a wide range of interacting structural factors that influence (and undermine) the ability of ASGM operators to adhere to, and fulfil, TIF's 'version' of 'responsible mining'.

TIF, by 'putting a price' (incentive) on ESG commitment, placed increased productivity by access to techno-finance (equipment) as the central theory of change for 'responsible practices'. There might, however, be a few inherent fallacies in the attempt to 'marketise' ESG performance. One is that, as the findings suggest, neither TIF nor the miners are in 'control' over the structural (political) problems that prevail in Migori (recall: Geenen, 2012; Spiegel, 2014; Bulkan & Palmer, 2016). Yet, since ESG becomes a central *'condition'* of the presumed cost-benefit analysis (to access additional finance), mine managers are placed in a dilemma of 'imposing' provisions, such as PPE usage of their workers, and to 'compete' with other miners in the area who do not condition shaft access. The 'fear' of losing their workers as a consequence of that conditioning could, as the findings suggest, contradictory impede production even further and exacerbate social conflict.

Notwithstanding, despite the highly complex social, political and economic challenges facing ASGM operators in Migori, miners actively attempted (and struggled) to rearrange themselves to 'fit' and 'remain' within the technical metrics of the LVGP to, eventually, unlock additional finance. This illustrated how the very existence of the 'ESG escalator' perpetuates a narrative that, in principle, assumes that miners *still* need to be *steered* to *become* investable and responsible, even if the criteria does not necessarily reflect the development priorities, or capabilities, of miners (Putzel et al., 2015). These findings concur with the argument fronted by Hook (2019a) that aspects which stretch 'beyond' the 'technical', underpinning attempts to 'deal' with ASM practices shapes, hinders, and conflict with ASGM operators *ability* to '*self-improve*'.

7.1.2. Emperor's new clothes?

Voluntary forms of regulation, such as responsible mining initiatives, have been shown to be embedded in global (universal) norms of reference for what is considered 'best practice' (Van Bockstael, 2019). TIF's LVGP is, as the findings suggest, similarly entrenched in a seemingly 'inescapable' dialectic between balancing commercial objectives with development needs (Tallorine, 2009). The commercial objectives of TIF, meaning ASGM in Migori must be made into an 'investment-conducive environment', inevitably place the interests of the investor (recall 'risk') at the forefront and, the broader development needs of miners, as secondary to those interests. This highlights a seemingly undeniable contradiction: 'standards' are not formulated to deliver development benefits to miners, they are designed to manage 'risk' for 'the downstream' (Hilson et al., 2016).

'Conventional investment logic' has it that, in order for an investment proposition to be viable, there must be certain assurances that the investment will, in one way or another, have 'returns' (and that an investor would not 'lose' money on an investment since that would, indeed, be a 'bad' investment) (recall: Spicka et al., 2018). As the findings suggest, this has evolved among (impact) investors to further include 'returns' on ESG improvements (see also: Gerard, 2019). If there is no 'viable' investment case that can provide assurances of both financial and ESG returns, the 'risk' is too high to invest (recall: Le Billion & Spiegel, 2021). ASGM operators that *want* to access formal channels of finance, through such investments, therefore, '*have no choice*' but to conform to any technical metrics of what 'investable' or 'responsible' entail (recall: Fisher & Childs, 2014).

Made visible through a neoliberal eco-governmentality analysis, the 'dominant' form of knowledge that delineates what is considered 'true' or 'valid', 'investable or 'responsible', inevitably shapes behaviours and practices accordingly since the 'cost' of not doing so would mean that miners would, by 'force of circumstance', be 'excluded' from access to formal finance (recall: Nightingale & Ahlborg, 2018). Despite being at a disadvantage to 'fulfil' ESG criteria, miners would nonetheless seek to conform to the 'obligations' in the contract whilst they, at the same time, (re)produced the necessity for further economic-centred policies to 'improve' their practices (Hirons, 2011). In other words, it is less about what the miners *can actually do* to meet criteria which labels them 'responsible', and more so about the fact that, *if they want to 'improve' their livelihoods*', they *must* comply (Hook, 2019a).

In other words, this substantiates how the LVGP, and the miners that participate in it, is regulated by the 'power of standards to govern conduct at a distance' (recall: Fisher & Childs, 2014). These standards are, in principle, accepted by TIF as the 'universal' ideal way of conducting 'responsible' businesses (Le Billion & Spiegel, 2021). This can reinforce the 'misguided' perception that *non*-compliance of miners to 'universal standards' is equivalent to substandard performance (Hilson et al., 2016). TIF therefore, inevitably, upholds a threshold that, above all, must reflect 'the powerful expectations of the downstream' (Hirons, 2020). In other words, 'responsible' mining does not *'exist'* outside of the globally recognised standards that defines it, ineluctably disqualifying miners whose land use practices contradicts the logics of 'responsible' and 'investable' subjects (recall: Baka, 2017).

Whilst TIF fronts a 'novel' approach to erstwhile 'neglected miners', it is seemingly inherently bound by the same contradictions of 'other' voluntary forms of regulation. To borrow the terminology of Dolan (2010), the LVGP becomes ethical and technocratic, voluntary and controlling, and inclusionary and marginalising at the same time. It is 'ethical' because it seeks to give credibility to 'criminalised' miners (Fisher & Childs, 2014), yet technocratic because 'universal' standards inadvertently obscures local contextualities (Le Billion & Spiegel, 2021). It is 'voluntary' because miners seemingly *chooses* to '*voluntarily*' subscribe to, internalise, and self-govern according to the logics of 'obligations' (Sippl, 2019), yet controlling since it 'leverages' poverty to 'control' pre-defined improvement trajectories (Hirons, 2011). Lastly, it is 'inclusionary' because it includes miners who otherwise could not meet exorbitant standards (Hilson et al., 2016), yet exclusionary since it, despite its 'low bar', 'inevitably' precludes miners whose practices do not reflect predefined notions of 'investability' and 'responsibility' (Baka, 2017).

7.2. Concluding remarks

7.2.1. Motivation, purpose and research questions revisited

The motivation for the study was to explore a potential 'novel' means of 'improving' ASGM. The purpose of the thesis, therefore, was to critically examine the governance strategy of the TIF's LVGP and how ASGM operators in Migori County, Kenya, as the 'target group', perceives and acts upon such a strategy. It has done so through two interconnected objectives: to comprehend how TIF and its investors rationalise and justify the LVGP to 'improve' ASGM in Migori, and how ASGM operators in Migori County conform with

and/or confront that 'improvement narrative'. To answer these questions, the theoretical framework of neoliberal eco-governmentality was employed, and qualitative data were collected from investors, programme implementers, and miners that all participate in the LVGP in various capacities.

As presented, analysed, and discussed, TIF and its investors justified its intervention by emphasising low productivity, lack of access to techno-finance, and disincentivised responsible practices (due to informality) as key issues to be rectified. These issues were, therefore, countered with 'favourable' access to techno-finance, assuming that equipment would boost productivity and, in turn, both improve livelihoods ('end poverty') and incentivise ESG improvements. These solutions, further, supported the aim to 'create' an investment-conducive environment for ASGM, by 'nurturing' economic and ESG viable (investable) subjects. However, ASGM operators, whilst conforming to the broader improvement narrative, confronted its rationalised solutions against a wide range of structural, political, and sensitive issues (*obscured* in the LVGP) that 'impedes' their 'ability' to 'self-improve'. Despite being at a disadvantage to do so, miners nonetheless sought to 'rearrange' themselves to 'fit' and 'remain' within the metrics of 'investable' and responsible 'subjects' driven by the desire to *eventually* access *further* techno-finance that would otherwise not be provided.

The case study of the LVGP has, therefore, emphasised the power dynamics inherent in voluntary forms of regulation, and the importance of understanding the structural factors that shape, influence, and undermine miners' ability to 'adhere' to 'responsible mining practices'. This has implications both for TIF in their attempt to 'end the cycle of poverty for good' and the miners that, in their everyday lives, struggle to manage a plethora of challenges left undeniably unaddressed by the LVGP. Lastly, it inevitably has implications for the wider field of ASM governance and to the 'value' of standards themselves. As long as priorities of 'development' in the ASM sector are universally claimed, made secondary to economic returns, and defined by general metrics of investment risk and reputational management, making ASM 'investable' will inevitably be bound by its inherent contradictions, and undermine any 'novel' attempt to 'meaningfully' 'improve' ASM.

7.2.2. Considerations for future research

As more practitioners call for 'inclusive' business-led development in the ASM, this study has enacted some central questions for further exploration in the topic. Concurrently - as more studies delve into the poststructural of ASM reform - future studies should investigate the interlinkages of discourse and power that operate in the broader (local) context of mining. Although accessibility is difficult, more attention should be brought to a wider sample of actors in the locality of a case, including government officials, landowners, large-scale mining companies, and traders. This will allow for an even more holistic approach to understand integrated factors that influence and undermine various attempts, either from miners or non-governmental organisations, to formulate 'meaningful' engagement strategies.

Furthermore, an inherent limitation of this thesis is that it, indeed, binds the findings according to a specific phenomena, the LVGP, which inevitably place narratives of different stakeholders mostly in relation to each other. This is further limited by the theoretical choice made in the thesis to, predominantly, explore *neoliberal* rationalities in the formulation of strategies that seek to impact 'relationships between miners and the environment'. Future research should consider broader implications and narratives, which elucidate, in particular, communality and 'collective responsibility' undertaken by miners in their attempt to navigate various structural dynamics. This could be done by utilising further theoretical knowledge propounded by scholars of eco-governmentality which, in various other cases, have shown dynamics that stretch beyond the mere 'neoliberal' of governance.

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Appendices

Appendix A: List of Sample Clusters for: Interview + Survey Participants

List of Interview Participants		
SC 1: Investors		
#	*Title*	*Institution*
1	Charitable Trust Manager	Inst. Donor/Impact Invest.
2	Chairperson	Inst. Donor/Impact Invest.
3	Investment Manager	Impact/Private Investor
4	Industry Rep.	Jewellery/CSR Invest.
5	Manager	Industry
6	Investment Manager	Impact/Private Investor
SC 2: Programme implementers		
#	*Title*	*Institution*
7	Mining Engineer	CSO/TIF
8	Gold Programme Manager	CSO/TIF
9	ASM Advocacy	CSO/TIF
SC 3: ASGM managers		
#	*Title*	*Institution*
10	Manager	AMP Business
11	Pit Owner/Manager	AMP Business
12	Chairperson	Sacco/Cooperative
13	Manager	AMP Business
14	Manager	AMP Business
15	Manager	AMP Business
16	LSM Geologist/Manager	AMP Business
SC 4: ASGM workers		
#	*Title*	*Institution*
17	Digger/Pit Supverisor	ASGM Miner
18	Digger/Machine Operator	ASGM Miner
19	Digger	ASGM Miner
20	Washer/Processor	ASGM Miner
21	Digger	ASGM Miner

22	Washer/Processor	ASGM Miner
23	Digger	ASGM Miner
24	Digger	ASGM Miner

List of Survey Participants				
#	Occupation	Gender	Age	Location
1	Digger	Male	26-30	Migori
2	Machine Operator	Male	26-30	Rongo
3	Manager	Male	51-60	Osiri
4	Digger	Male	31-40	Migori
5	Digger	Male	31-40	Migori
6	Digger, Washer	Male	26-30	Migori
7	Digger	Male	41-50	Migori
8	Digger, Machine Operator	Male	41-50	Migori
9	Washer	Female	51-60	Rongo
10	Washer	Male	31-40	Migori
11	Digger	Male	51-60	Osiri
12	Digger	Male	41-50	Migori
13	Manager	Male	31-40	Osiri
14	Washer	Female	26-30	Rongo
15	Machine Operator	Female	31-40	Rongo
16	Machine Operator	Male	41-50	Osiri
17	Washer	Female	31-40	Osiri
18	Washer	Female	19-25	Rongo
19	Washer	Female	26-30	Rongo
20	Washer	Female	15-18	Rongo
21	Washer	Female	31-40	Rongo
22	Machine Operator	Female	31-40	Rongo
23	Washer	Female	31-40	Rongo
24	Washer	Female	31-40	Rongo
25	Manager	Female	26-30	Rongo
26	Manager	Female	26-30	Rongo

27	Washer	Female	31-40	Rongo
28	Washer	Female	31-40	Rongo
29	Washer, Security	Female	41-50	Kenya, Rongo
30	Washer	Female	31-40	Rongo
31	Machine Operator	Male	19-25	Rongo
32	Washer	Female	31-40	Rongo
33	Digger	Male	41-50	Rongo
34	Washer	Female	19-25	Rongo
35	Washer	Female	31-40	Rongo
36	Machine Operator	Female	31-40	Rongo
37	Washer	Female	19-25	Rongo
38	Machine Operator	Male	26-30	Osiri
39	Digger	Male	41-50	Osiri
40	Washer	Female	31-40	Kenya
41	Washer	Female	31-40	Rongo
42	Digger	Male	26-30	Rongo
43	Pit Owner	Male	51-60	Osiri
44	Digger	Male	26-30	Rongo
45	Machine Operator	Male	41-50	Kenya
46	Rock Crusher	Male	31-40	Rongo
47	Digger, Blaster, Machine Operator	Male	19-25	Rongo
48	Blaster	Male	26-30	Migori
49	Manager	Male	60+	Osiri
50	Washer	Male	41-50	Migori Town
51	Digger, Blaster, Machine Operator	Female	26-30	Migori Town
52	Manager	Male	60+	Migori Town
53	Manager	Male	31-40	Migori Town

Appendix B: Survey Guides, Sample Cluster 1-4 + Consent Form

Interview Guide Sample Cluster 1 Downstream/Investors		
Type	**Question**	**Follow-up/Probe/Specification**
Introduction	Can you tell me a bit about yourself?	What do you do/occupation? Which organisation? What does your organisation do?
Background	Can you tell me about how your organisation is working with Artisanal and Small-Scale Mining?	What has been your main project/programme/approach?
		How long have you been working with ASM? / Where?
		Why do you think that ASM is important to (dis/)engage with?
Challenge identification/ perception of ASM issues	What do you believe to be some of the most pressing challenges in the ASM sector at the moment?	If risk: How do you think these challenges can be addressed? Who's role do you think it is to address these challenges?
		What are some of the most pressing challenges that you are facing in the implementation of your ASM agenda?
		Investment: How do you think that ASM can be made an investment-friendly sector?/preconditions for investment in the AGM sector
Other reflections	What do you think the future of ASM is? What role do you see your organisation playing in that sector? Is there anything else that you would like to share with me?	

Interview Guide Sample Cluster 2 Midstream (TIF interviews)			
Type	**Question**	**Follow-up/Probe/Specification**	**Notes**
Challenges	What do you think are the main challenges facing AGM in Migori?	How can those challenges best be mitigated in general?	
		-> How is the Impact Facility working towards that?	
Lease-to-own	Why do you believe the lease to own model is the best approach?	What are the main functions of the lease-to-own model?	On improved: why not debt-finance/cash infusion? Why not development grants?
		Why are they important? / Relevance for miners?	
		How can it be improved?	
Investment facilitation	Why do you believe investments is a solution to the challenges facing ASGM in Migori?	What are the preconditions for investment in your perspective?	
		How can investments best be done, in your opinion?	
Environmental, Social and Governance	How do you believe that investments can be best tied with ESG improvement programmes?	Why do you think there's a reluctance? How to mitigate?	
		How to achieve long-term sustainability?	
Other reflections	What do you think is the future of ASM, especially AGM in Migori?		

Informed Consent Form for Semi-Structured Interview (SC_3+4)

Hello, my name is Gustav Dahlqvist, and I am conducting a research project on the different challenges facing artisanal miners in Migori County. I would very much appreciate your participation. I would like to ask you some questions about your work that will be used in a Master Thesis in International Development and Management. The interview will take about 45 minutes. Any information provided will be kept anonymous, and will not be shared with any outside parties.

Your participation is voluntary, and you can choose not to answer any question I may ask you. However, I would very much appreciate your honest answers to all the questions, as your insight and perspective in these matters are very important to me. You can, nonetheless, withdraw your consent at any point in time.

At this time, do you have any questions or concerns about the interview?

Does the informant agree (verbally) to participate in the interview? (YES / NO): _____

Interview Guide Sample Cluster 3 Mine Management (AMP) ENGLISH + SWAHILI		
Type	**Question**	**Follow-up/Specification**
Demographics/ Introductory	Can you tell me a bit about yourself? *Nieleze kwa ufupi kukuhusu*	Your name? / How old are you? *Jina lako/Umri wako?*
		Where are you from? *Umetoka wapi?*
		What do you do/occupation? *Unafanya fanya kazi gani?*
		What is your educational background? *Umefika kiwango gani cha elimu?*
		Do you have any dependents? *Unawatu wanaokutegemea?*
Background /Livelihoods	What is your reason for engaging in mining? *Eleza sababu za kujihusisha na uchimbaji wa madini*	/What drove you into mining? / Why are you engaged in mining? *Kwa nini unajihusisha na uchimbaji wa madini?*
		How long have you engaged in mining? *Umefanya kazi hii kwa muda upi?*
		What did you do before mining? *Ulikuwa unafanya kazi gani kabla ya uchimbaji wa madini?*
		Are you engaged in any other livelihood activities?/ Yes: Why? *Kando na uchimbaji wa madini, unafanya kazi nyingine? Kwa nini?*
Challenge identification/ perception of ASM issues	What are some of the main challenges that you are facing in your occupation? *Ni changamoto gani zinazokukumba katika kazi yako?*	/What would you say are the main threats to miners in Migori? *Kwa maoni yako, ni shida zipi zinazowasumbua wachimbaji wa madini?*
		/How do you perceive your health and safety of working?

		Unaonaje afya na usalama wa kazi yako?
		How could the mine site be improved, in your perspective? *Toa maoni yako jinsi mahali pako pa kazi panaweza kuboreshwa*
		+/How can these threats/challenges be best addressed? *Changamoto hizi zinaweza kushughulikiwa aje?*
Historical Aspects	Have there been any other interventions / finance programmes that you have participated in, in the past? *Hapo mbeleni, umewahi jihusisha na miradi yoyote ya kifedha?*	If yes: can you tell me more about that intervention? *Kama ni ndio, tafadhali nieleze kwa undani mradi/miradi hiyo.*
		If no: do you know of any other projects in the region? *Kama ni la, je, unafahamu miradi nyingine yoyote katika eneo hili?*
		/+if yes: why have you not participated in these projects? *Kama ni ndio, kwa nini hukuhusika katika miradi hiyo.*
Perceptions on the lease-to-own model	Why did you seek to engage with the Impact Facility's lease-to-own model? *Kwa nini ulichagua kufanya kazi na The Impact Facility?*	How has the lease-to-own model affected - or not affected - your mining operations? *Huu mpango wa The Impact Facility(Kukununulia mashine halafu utumie ukilipia pole pole) imekufaidi ama imeadhiri kazi yako ya uchimbaji. Tafadhali eleza.*
		How do you think that the lease-to-own model can be improved? *Kulingana na wewe, unafikiri huu mpango unaweza kuboreshwa aje?*
Environmental, Social, and Governance	Are you working on Environmental (spec) improvements in your mine? *Je, unaboresha mazingira ya kazi yako?*	If yes: how? + What are the main challenges that you face? *Kama ni ndio, kwa njia gani? Unakumbana na shida gani?*
		If no: why? *Kama ni la, kwa nini?*
	Are you working on Social improvements (spec) in your mine? *Je, unaboresha maslahi ya kijamii mahali pako pa kazi?*	If yes: how? + What are the main challenges that you face? *Kama ni ndio, kwa njia gani? Unakumbana na shida gani?*
		If no: why? *Kama ni la,kwa nini?*

	Are you working on Governance (spec) improvements in your mine? *Je, unaboresha utawala wako mahali pako pa kazi?*	If yes: how? + What are the main challenges that you face? *Kama ni ndio, kwa njia gani? Unakumbana na shida gani?*
		If no: why? *Kama ni la, kwa nini?*
Other reflections	Is there anything else that you would like to share with me around the lease-to-own model, challenges that you face, or improvements that can be made in your mine? *Kuna kitu chochote ungependa kunieleza kuhusu maisha yako kama mchimbaji wa madini, shida zinazokukumba kazini au njia za kuboresha mahali pako pa kazi?*	

Interview Guide Sample Cluster 4: Mine Workers (diggers, washers, processors) ENGLISH + SWAHILI		
Type	**Question**	**Follow-up/Probe/Specification**
Demographics/ Introductory	Can you tell me a bit about yourself? *Nieleze kwa ufupi kukuhusu*	Your name? / How old are you? *Jina lako/Umri wako?*
		Where are you from? *Umetoka wapi?*
		What do you do/occupation? *Unafanya fanya kazi gani?*
		What is your educational background? *Umefika kiwango gani cha elimu?*
		Do you have any dependents? *Unawatu wanaokutegemea?*
Background /Livelihoods	What is your reason for engaging in mining? *Eleza sababu za kujihusisha na uchimbaji wa madini*	What drove you into mining? / Why are you engaged in mining? *Kwa nini unajihusisha na uchimbaji wa madini?*
		How long have you engaged in mining?

		Umefanya kazi hii kwa muda upi?
		What did you do before mining? *Ulikuwa unafanya kazi gani kabla ya uchimbaji wa madini?*
		Are you engaged in any other livelihood activities?/ Yes: Why? *Kando na uchimbaji wa madini, unafanya kazi nyingine? Kwa nini?*
Challenge identification/ perception of ASM issues	What are some of the main challenges that you are facing in your occupation? *Ni changamoto gani zinazokukumba katika kazi yako?*	What would you say are the main threats to miners in Migori/Siaya? *Kwa maoni yako, ni shida zipi zinazowasumbua wachimbaji wa madini?*
		How do you perceive your health and safety of working? *Unaonaje afya na usalama wa kazi yako?*
		How could the mine site be improved, in your perspective? *Toa maoni yako jinsi mahali pako pa kazi panaweza kuboreshwa*
		How can these threats/challenges be best addressed? *Changamoto hizi zinaweza kushughulikiwa aje?*
Other reflections	Is there anything else that you would like to share with me about your life as a miner, challenges that you face, or improvements that can be made in your mine? *Kuna kitu chochote ungependa kunieleza kuhusu maisha yako kama mchimbaji wa madini, shida zinazokukumba kazini au njia za kuboresha mahali pako pa kazi?*	

Appendix C: Link to Survey Questionnaire (ENG+SWA)

The full survey in both english and swahili can be found in the following link: https://drive.google.com/drive/folders/1GV92axzF8JOb9-qHECYHkiSxOIWgRnnj?usp=share_link

Appendix D: Simplified coding scheme (with quote ex)

Appendix D: Coding scheme (simplified) with quote ex.				
Analytical Category	Practice/Concept	Perception	Sub-code(s)	Quote (ex)
Fields of visibility	Problematisation	Productive inefficiency impedes better livelihoods	Exclusion from formal finance	*"There is something of a glass ceiling mine sites hit at the moment in the context of their existing informal relationships [...] which tends towards short-termism, poor quality equipment, and thus worse business performance than they could experience with formal, free, competitive and strategic long-term finance" (interviewee 8).*
			Reliance on unfavourable informal investors	
			Disincentivises responsible practices	
		Informality impedes investment conducive environment (non-investability)	Perception of risk (financial/reputational)	*"So the ultimate question is: how do we build a viable business model that will attract other forms of formal finance? But it's just not easy to attract in the six and seven figure sums for something that is such a highly controversial area and where you have very little track record that points to the proper management of such finance" (interviewee 1).*
			Economic non-viability	
			ESG non-viability	
Technical aspects	Technical fixes	Productivity will improve livelihoods	Access to formal techno-finance	*"You can't just give them a loan and then let them do whatever they want to do with it. Because in the worst-case scenario they're going to buy a few balls of mercury and that's not what you want. So you have to use incentives and at the same time have a certain control over what impact the money is going to have, e.g., on the environment, the livelihood of individuals and their communities" (interviewee 3). "*
			Favourable terms for miners	
			Profitability enables responsible practice	
		Access to formal techno-finance will nurture investability	Inbuilt incentive to responsible practices /+expertise	*[I]f the motivation [to meet ESG criteria] does not come from within and it comes from us, then it will be a loss because eventually when we leave them after a year or so, they will drop the gun and say: it's the Impact Facility's*

			Obligations (financial, non-financial), compliance	*initiative not our own initiative. So we are here only as experts to provide technical assistance" (interviewee 9). "*
			Controllable output to disincentivise non-compliance	
Forms of knowledge	Confronting	Informality as structural	ESG as transboundary/outside of scope	*"When the Impact Facility comes and say organise your business, start mining, keep records, and we will give you machines. I will do that very quickly. But my main motive will not be helped: we need permits, better prices, prospecting data, to assure us that they are not coming to aid us, they are coming to assist us to improve our mining" (interviewee 13).*
			Access to techno-finance not enough / political action	
	Conforming	Informality as exclusion	Access to techno-finance welcomed / productivity	*"Because we are not all equal here. There are some laws as to our case that we are not "financially fit". We have to have some form of method of getting finance and to get someone to support us and our production. Because the government is not doing it. I cannot go to a bank. That is why I know that the Impact Facility's programme is good" (interviewee 15).*
			Call for further finance (absence of options)	
Formation of identities	Subjectivity	Benefits (to comply), self-optimisation	Incentive to access further finance (investable)	*When it comes to the environment, it also makes us think about the financial feat. Because without finance, you are not fit to solve the many problems that prevail around here. It's impossible to improve. The environment here is what pays all the people around us, so that we can enjoy it. We have to pay it back, but without finances we cannot. (interviewee 12).*
			Production as central to livelihood/environment (entrepreneurship)	
		Costs (to comply), not beneficial	ESG compliance costly / sensitivity of conditioning	*"But you cannot force, as in say, punish somebody to adhere to some of these things because then this is somebody who, if he does not work today, he will go hungry and you see if he goes hungry then levels of violence goes up" (interviewee 10).*
			Competing interests / shaft access	