Mining and its Long-term Impacts on Local Livelihoods

A Case Study of Expected Mine Closure in Kwale county, Kenya

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Abstract

For as long as new mines have been opened, others have been closed. Mineral resources are finite and eventually all existing mines will cease operating. However, what is often excluded from studies on mining and its impact on the local host-community, is the final stage of a mine's life-cycle: mine closure. This research set out to describe and analyse the long-term impacts of mining on the livelihoods of host-community members, including implications associated with expected mine closure. It makes use of a particular case study, being that of the Kwale Project in Kwale county, Kenya, where mining company Base Titanium is extracting minerals ever since the start of production in 2013 and is expecting to close the Kwale mine mid-2023. Primary data has been collected through ethnographic participant observation and semi-structured in-depth interviews with community members and other relevant stakeholders carefully selected through snowball sampling. Fieldwork has been carried out in February and March of 2020 in Kwale county, Kenya. Due to the global pandemic and subsequently, the ending of field work, primary data has been complemented with secondary data, consisting of a combination of textual sources (e.g. statistical data archives, previous relevant research, reports from local NGOs, CSOs and Base Titanium, and internet-accessible interlocutors). Outcomes of this research confirm that local host-community members are negatively and positively impacted by Base Titanium's mining activities in the past, present and presumably also in the future. Positive impacts include a substantial rise in community development projects initiated and implemented by Base Titanium, enhanced skills through the provision of trainings, improved health and nutrition and promising educational opportunities. Negative impacts include adverse environmental consequences, challenges as a result from MIDR relating to conflicts on land-ownership, land use and land value as well as difficulty in sustaining livelihoods and contributing to further marginalization, unavoidable expected loss of employment opportunities, and possible out-migration of skilled mine workers. Moreover, results have brought to the fore that Base Titanium has inadvertently contributed in the creation of a dependency culture among the local community of Kwale county through its implemented Corporate Social Responsibility (CSR) strategy. This means that even after closure of the Kwale mine, the local community will be subjected to implications related to mining. Also, a consistent lack of community participation as well as limited collaboration between key stakeholders (e.g. the investor/mining company, national and local government and indigenous/affected communities), are identified as threatening local livelihoods and having adverse implications for local development.

Key words: impact; local livelihoods; host-community; mining activities; Corporate Social Responsibility (CSR); mine closure

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List of abbreviations

CDA	Community Development Agreement
CLA	Community Land Act
CSO	Civil Society Organisation
CSR	Corporate Social Responsibility
EIA	Environmental Impact Assessment
EMCA	Environmental Management and Coordination Act
EMP	Environmental Management Plan
ESMS	Environmental and Social Management System
HUDA	Human Development Agenda
KFS	Kenya Forest Service
KHRN	Kwale Human Rights Service
KLA	Kenya Land Alliance
KNBS	Kenya National Bureau of Statistics
KWACODEP	Kwale Community Development Programme
KYGC	Kwale Youth Governance and Consortium
MIDR	Mining-Induced Displacement and Resettlement
NEMA	National Environment Management Authority
PAP	Project Affected People
PAVI	'Pamba na Viazi' (= Swahili for 'cotton and potatoes')
SLO	Social License to Operate
SML	Special Mining Lease

Chapter 1. Introduction

1.1 Introduction

Over the past several years, land-grabbing has emerged as an important issue (Zoomers, Van Noorloos, Otsuki, Steel & Van Westen, 2017), referring to the interest from foreign actors to invest in 'empty' land in distant countries (Borras, Hall, Scoones, White & Wolford, 2011). The acquisition of land for industrial mining is often positioned as one of the varieties of land-grabbing (Huggins, Buss & Rutherford, 2017), as land is being expropriated from local inhabitants through forced evictions or opaque lease agreements. Land occupied by indigenous communities is 'taken' by the state and 'given' to multinational companies (Kariuki & Ng'etic, 2016). From a positive perspective, this is seen as a development opportunity in the sense that it could create additional revenues as well as employment opportunities for the host-country. However, it should not be surprising that the expropriation of land often goes hand-in-hand with conflict. Especially within the mining industry, large-scale land-based acquisitions often coincide with disputes over land ownership, land access and land-use (Huggins et al., 2017). Large-scale land-based investments in the mining sector are not a new phenomenon and consequences of these investments on host-countries have been topic of debate for decades.

From the literature (e.g. Laurence, 2006; Davis, 1995) it has become clear that there is a growing awareness of the consequences of mining activities on host-communities. The acknowledgment that positive consequences are often offset by the value of negative effects has led to a demand to implement strategies that mitigate the negative effects. Especially during the first stages (exploration and extraction) of a mine, the consequences of mining activities are increasingly being addressed, monitored and mitigated. However, one particular stage within the mine's life-cycle is often being neglected, namely the final stage, mine closure. "The excitement and fanfare that surrounds the opening of a new mine is never present when it finally closes" (Laurence, 2006, p. 285). An analysis of trends in the mining sector reveals a general lack of understanding of the significant consequences that mine closure can have on affected communities (Ackerman, Van der Waldt & Botha, 2018). The lack of understanding of this crucial stage of a mine life-cycle presents an interesting avenue for development research. The mining industry has not yet embedded mine closure an integral part in its system and there is a need to better understand the impacts of mine closure on host-communities. This research aims to contribute to closing this knowledge gap by conducting research on the consequences of mining activities on the livelihoods of local men and women in host-communities in order to say something about the long-term impacts of mining - including expected mine closure - through a case study of 'the Kwale Project' in Kwale County, Kenya.

1.2 Outline of thesis

Following the introduction, chapter 2 provides the theoretical framework this research is embedded in. It reviews currently available knowledge on the research topic through a literature review and elaborates on the theories and approaches this research is guided by. Chapter 2 also discusses the central research question, sub-questions and outlines the research objectives. Subsequently, chapter 3 presents the adopted methodological approach adopted to carry out the research and analyse the gathered data. It briefly reflects upon the positionality as a researcher and the challenges that conducting research in times of a pandemic brings. Finally, it takes into account the validity and reliability of the chosen methodological approach. Chapter 4 reviews the state of the art of the research topic in its specific geographical context. In chapter 5, 6 and 7, the research findings are systematically presented according to the sub-questions. Chapter 8 is dedicated to an interpretation of the research findings and critically discusses the implications of the findings in relation to the assumptions, expectations and the relevant academic literature. Chapter 9 is ultimately dedicated to answering the central research question. Furthermore, it reflects on the limitations of this research and finally it provides recommendations for future research.

Chapter 2. Theoretical Framework

This chapter reviews currently available knowledge on the research topic through an extensive literature review and elaborates on the theories and approaches this research is guided by. It also discusses the central research question, sub-questions and outlines the research objectives

2.1 Literature review

The Global Land Rush

Over the past several years, the global land rush has emerged as an important issue (Zoomers et al., 2017). The 'land rush' or at least media awareness of it, started with the 2007-2008 commodity price boom (Arezki, Deininger & Selod, 2015). Mainly as a result of the global food crisis of 2007-08, capital-rich countries with limited possibilities to produce their own food started to buy and lease large tracts of land overseas (Zoomers et al., 2017). Moreover, powerful transnational and national economic actors from corporations to national governments searched for 'empty' land often in distant countries that can serve as sites for fuel and food production (Borras et al., 2011). However, while commodity prices soon returned to more moderate levels, investors' interest in land persisted (Arezki et al., 2015). This interest from foreign investors led to an increase in large-scale, cross-border land deals or transactions and is referred to as 'land grabbing' (Zoomers, 2010). According to Zoomers, the global land grab is to a large extent the result of the liberalisation of land markets, which became a major policy goal in the course of 1990, and went hand in hand with rapid increases in foreign direct investment (FDI) (2010). Since the attraction of foreign capital is seen as a necessary condition for economic growth, foreign investors are pampered and can fairly easily become the owners of houses, land and forests (Zoomers, 2010).

Around the world there have been strong reactions from states, corporations, and civil society groups (Borras et al., 2011). On the one hand the trend of foreigners acquiring large tracts of arable land in developing regions has been strongly criticised by international advocacy groups and NGOs such as GRAIN and Oxfam, who see such transactions as a practice which alienates smallholder farmers in from available land, displaces local populations and advances the marginalisation of the rural poor (Lisk, 2013). At the same time, and from a different perspective, other stakeholders such as host-country governments have argued that large-scale land-based investments could be an opportunity to develop and modernise the continent's agriculture with potential gains in terms of additional revenues and new employment opportunities (Lisk, 2013). It is evident that the global land grab has become a key development issue (Zoomers, 2010), where some see land grabs as economic opportunity and others see land grabs as a major threat to the lives and livelihoods of the rural poor.

Land-grab in the mining industry

The expropriation of land for industrial mining is sometimes positioned as a sub-set of the land-grab literature, as one of several varieties of corporate land-grabbing (Huggins, Buss & Rutherford, 2017). This is due to the fact that, often, land occupied by individuals and groups is being compulsory acquired by the state and given to multinational companies (Kariuki & Ng'etic, 2016). The pre-existing uses of land are disregarded while exploration and extraction of minerals are given top priority (Kariuki & Ng'etic, 2016). This is not a new phenomenon and impacts from mineral extraction on population and development patterns in Africa have existed since pre-colonial times. However, an unprecedented mineral boom is now occurring in Africa with much of the increase in foreign direct investment linked to extractive industries (Weng, Boedhihartono, Dirks, Dixon, Lubis & Sayer, 2013). It should therefore not be surprising that mineral exploration and large-scale land-based investments in the mining sector go hand-in-hand with disputes over land ownership, land access and land-use (Huggins et al., 2017).

Consequences of mining for host-communities

Globally, there is growing awareness of the consequences mining activities have on host-communities and conventional approaches to mining and mineral development have at their worst not only been associated with local economic instability, but also with adverse environmental aspects and social and cultural disruption. That the effect of mining activities is not limited to a country's economy has been evidenced by the major environmental complications it can bring along. According to Van Tonder, Coetzee, Esterhuyse, Msezane, Strachan, Wade and Mudua (2009), mining can have a devastating impact on the environment within which it occurs. For instance, Tewary, Singh and Dahr (1996) argue that the mining sector has not always recognised the ecosystems which form the basis of all ecosystem goods and services upon which sustainable livelihoods and food security depend. Whilst the majority of the literature is focused on economic and environmental consequences of mining activities in the sector, there is an additional set of literature consisting of the socio-economic impacts on host-communities, both negative as positive. It should therefore be noted that mining activities does not always nor only bring negative consequences. Positive consequences of mining range from economic growth through royalties, employment generation, to an increase in initiatives aimed at helping the community and strong social cohesion of the local people (Siyongwana & Shabalala, 2019). However, as is widely acknowledged and evidenced in the literature, mineral exploration and development are increasingly taking place on the lands of some of the world's poorest and most marginal communities, and since these groups typically reside in small, simple communities that are largely unexposed to global society, they are particularly vulnerable to the negative impacts of development.

Mining-Induced Displacement and Resettlement (MIDR)

A concept often returning in the literature is Mining-Induced Displacement and Resettlement (MIDR) and relates to the upheaval and displacement of indigenous communities. In the name of development, affected communities are often displaced and/or resettled, with little attention given to the impacts on their livelihoods and well-being (Chu, Young & Phiri, 2015). Occasionally, local citizens and members of host-communities are forced to settle in other rural regions in order to create space for mineral exploration and development. Physical displacement, relocation and resettlement are widely acknowledged as posing enormous risks to project-affected people (PAPs) (Owen & Kemp, 2015). Displacement involves not only the physical eviction from a dwelling or squatter, but also the expropriation of productive lands on other assets to make possible an alternative (Downing, 2002). Each year, more than 10 million people are involuntarily displaced to make way for development projects (Downing, 2002). Hydropower generation is responsible for most of this displacement, but mining accounts for an undetermined proportion (Downing, 2002). The typical strategy of a number of mining companies in the past was to provide both financial compensation and social support to communities, and in the event of relocation, to finance the development of housing in an uninhabited area and to ensure that living conditions are improved overall as a result of the relocations (Hilson, 2002). However, because of strong ties to the environment dating back thousands of years, it is argued that monetary compensation rarely makes up for land loss (Hilson, 2002). Besides, according to Hilson (2002), it is unrealistic to assume that any sum of money could compensate entirely for the disruptions in lifestyle caused by local mining activity.

Corporate Social Responsibility (CSR) in the mining industry

Even though mining also brings positive consequences, these are often offset by the value of negative effects (Lahiri-Dutt, 2011). Mining companies and government bodies at the national and regional level acknowledge this and more often agree on the fact that relationships with affected communities can make or break mining activities. Therefore, strategies are implemented to enhance and strengthen positive relationships with host-communities to contribute to more positive experiences on the ground. One of such strategies is Corporate Social Responsibility (CSR). CSR is the process by which companies integrate social and environmental concerns in their business operations and transactions with stakeholders on a voluntary basis (Dahlsrud, 2016). According to Abuya (2016), from the above definition, it is clear that, apart from making a profit, mining companies should equally concern themselves with the activities that can improve the lives of the communities which touch operations. It is argued that apart from responding to external pressures, mining companies also engage in CSR for the following reasons: (a) to obtain competitive advantage; (b) to maintain a stable working

environment; (c) for public relations (PR) purposes; and (d) to motivate employees (Frynas, 2005). It is now the norm for big business to be involved in the design and implementation of community development projects, the proliferation of which has been attributed to the decline of the welfare state, economic crisis in the workplace, a rising neo-liberal movement and accompanying globalisation, the entrenched poverty found in most developing countries, and the failure of socialism (Kapelus, 2002; Makaros & Zehavi, 2008).

One way in which CSR is operationalised in the mining industry, is through a social license to operate (SLO). A social license is a tool used to avoid potentially costly conflict and exposure to social risks and is set between a mining company and the host-community. A social license exists when "a mining project is seen as having the broad, ongoing approval and acceptance of society to conduct its activities" (Prno & Slocombe, 2012, p. 346). Local communities are often a key arbiter in the process of gaining a social license to operate, by virtue of their proximity to projects, sensitivity to effects, and ability to affect project outcomes (Prno & Slocombe, 2012). SLO remains a responsibility of companies and is not mandated by law (Meesters & Behagel, 2017). Often, efforts made to operationalise CSR in the mining industry have had limited impact, especially in developing countries (Abuya, 2016), and the activities of mining companies have for the most part failed to alleviate poverty (Akpan, 2009). In many cases, they have exacerbated hardship, created landscapes of uneven development and/or caused unwarranted tension (Kapelus, 2002). These efforts have also led to 'dependency mentality' in mining communities (Jenkins & Obara, 2006).

Mine closure

When a new mine is opened, often by a local politician, notable excitement and goodwill typically accompanies this good news story (Laurence, 2006). In general, the mining industry is promoted in ways that highlight benefits it brings host-communities. It is however less common to discuss what happens when a mine closes, which is inevitable due to the finite nature of natural resources. When a mine closes, there are no politicians to mourn the demise to the mine, and "*the excitement and fanfare that surrounds the opening of a new mine is never present when it finally closes*" (Laurence, 2006, p. 285). For the past decade or more, the term 'mine closure' has firmly entrenched itself into the lexicon of mine operators and regulators (Laurence, 2006).

Generally speaking, the life-cycle of a mine consists of at least four stages, being exploration (1), construction (2), operations (3) and closure (4). Exploration is a precursor to mining and often occurs simultaneously with prospecting. Prospecting is the process of searching for mineral deposits in a certain region. In mining exploration, experts use additional techniques to determine the possible size and value of the mineral deposit(s) discovered during prospecting. Mining activities within this stage

often consist of airborne and ground-based geo-chemical, and geophysical surveys, claim staking, line cutting, stripping, drilling and trenching, road/trail building and bulk sampling (Fourie & Brent, 2008). Stage 1 is therefore often referred to as the stage of 'finding and defining'. Stage 2, the construction of the mine, is the planning and building stage. Budget and financial reports are prepared, and permits are requested. Also, plans are made for the appropriate type of mining. In the operations stage (3) – also often referred to as the extraction stage – the minerals are removed. The final stage (4) encompasses the decommissioning of the processing plant and physical rehabilitation of the mine site (Bainton & Holcombe, 2018).

Although mine closure is recognised as an important component of a mine's life-cycle, Ackerman et al., argue that mine closure is more than a managerial-technical-engineering aspect within the life-cycle of a mine (2018). According to Chaloping-March mine closure should be understood as "*a social episode in the lives of individuals, households, families, communities and local governments*" (2008, p. 864). Moreover, mine closure could be identified as "*an episode or a moment in the ebb and flow of life in the surrounding communities – a moment that can stretch from several years to several generations as the memories and legacies of mining persist well past formal extractive activities*" (Bainton & Holcombe, p. 2). This final stage of the mine life-cycle should therefore get at least as much attention as when a new mine is opened. However, an analysis of trends in the mining sector reveals a general lack of understanding of the significant consequences that mine closure may have in affected communities (Ackerman et al., 2018).

Mine closure planning

The concept of 'good mine closure planning' is often regarded to as a requirement to mitigate the negative consequences of mining on host-communities. Mining activities and mine closure can have major consequences for social development in host-communities, in the surrounding local and regional environment, and even further afield. However, these consequences do not all have to be negative and can also create new opportunities. Harnessing and adequately resourcing and managing these in an integrated way has the potential to create the foundations for long-term development (Bainton & Holcombe, 2018). Optimised mine closure processes would for instance enhance (rather than detract from) local capital – produced, natural, human, financial, social and cultural – to create the foundations for a more sustainable post-mining future (Bainton & Holcombe, 2018). Good mine closure planning is therefore a crucial component. The World Bank (2002) lists three requirements for closing a mine successfully, being: early, constructive action by mining companies to ensure that the memory of mining is not one of negative environmental and social impacts – a reputation that will increasingly threaten future mining operations elsewhere; proactive involvement by local communities to ensure that the

benefits from mining are sustainable for future generations, and; legal frameworks, with early planning and support to local communities by government, to ensure that the authorities are not left to manage large environmental and social problems. Moreover, the World Bank states that good mine closure planning should commence in the design phase and should contain times and costs; specifics about the expected final landform and surface rehabilitation, including detoxification of dumps and removal of plant; risk assessment to help prioritisation; cost-benefit analysis of different options; management plan for implementation of closure, and; post-closure monitoring proposals and this should be integrated with annual mine plans (2002).

Managing closure impacts on communities is however a relatively new imperative and has partly arisen from the incorporation of the principles of sustainable development into mine management (Hoadley & Limpitlaw, 2008). In the contemporary world, the guiding rationale for mine closure stems from the concept of sustainable development, one mining-related definition of which is "*using, conserving and enhancing the communities' resources so the ecological processes on which life depends are maintained and the total quality of life now and the future can be maintained*" (Stacey, Naude, Hermanus & Frankel 2010, p. 382). Currently, there is a growing demand for mining companies to align themselves more closely with the tenets of sustainable development. The industry has in many cases responded positively to these demands, having recognized the old ways of doing business are no longer an option if the sector is to remain viable (Prno & Slocombe, 2012). For instance, from the 1970s to the mid-1990s, mine operators and regulators mainly emphasised environmental issues in closure plans and mine rehabilitation techniques improved dramatically as a result (Laurence, 2006), but partly due to an increased focus on sustainable development and its application to the mining industry in recent times, the need to address equally important social and community aspects of mine closure has been put in perspective (Laurence, 2006). As a result, considerable work has been done at a global level to minimise the impact of mining on communities under the banner of sustainable development in the last five years (Laurence, 2006). Even though, the mining industry has not yet developed or embedded the sorts of 'social performance capabilities' that are required to consistently identify key social risks and trends, undertake analysis and manage operations in complex socio-political environments and minimise social impacts (Owen & Kemp, 2015). Therefore, a knowledge gap remains and there is an urgent need to better understand the social impacts that accompany mine closures (Bainton & Holcombe, 2018).

Women in the mining industry

When looking at the available literature on mining, women are often excluded from the equation. Many studies in the mining sector have described how masculine the industry is and mining is commonly seen

as a quintessentially masculine endeavour (Lahiri-Dutt, 2011). But the role women play in the mining industry should not be underestimated. There has been considerable work that describes how gender, ceteris paribus, is an important determinant of how rights, responsibilities, and resources tend to be allocated (Poats, 1991; Moser, 1993, Thomas-Slayter & Rochleau, 1995 in Meinzen-Dick, Brown, Feldstein & Quisumbing, 1997) and widening the perspective allows to see the significant, yet chronically underreported major role women play in the mining sector. Moreover, according to Archambault and Zoomers (2015), not only in the mining industry, but gendered impacts of the global land rush in general, have been relatively understudied, and it is therefore a necessity to shift away from the gender-blind conceptual, analytical, and measurement approaches, in order to shed light on the differences and complementarities between men's and women's interests, roles, and resources uses which are often overlooked (Meinzen-Dick et al., 1997).

2.2 Research approach

A critical review of the literature allowed for an identification of the research main concepts and knowledge gap. This section of chapter two outlines the perspective and lens adopted to look at the research topic.

Micro perspective

Within studies related to mining industries, there has been a deep belief that countries blessed with natural resources can base their development on natural resources and use them as a key path for sustained growth. Although there was some opposition to this conventional wisdom, the optimistic view prevailed until the early 1980's. At this time, the 'Dutch disease' emerged to pave way for the second more pessimistic perspective (Badeeb, Lean & Clark, 2017). The term concerns the decline of the Dutch manufacturing sector after the discovery of natural gas sources. According to Davis (1995), the Dutch disease "*simply denotes the coexistence of booming and lagging sectors in an economy due to a temporary increase in export earnings. In the core theory, the mining sector booms while manufacturing and agriculture shrinks*" (p. 1768). The Dutch disease can be considered an immediate predecessor of the resource curse thesis (Badeeb et al., 2017). Gelb (1988) and Auty (1993), use the term 'resource curse' to describe how countries rich in natural resources had lower economic growth than countries without natural resources. Briefly put together, the resource curse thesis refers to an inverse association between natural resource dependence and economic growth and challenges the conventional view that natural resources are a blessing for developing countries.

The debate on whether natural resources are beneficial or not to countries and host-communities, has for a long time and to a large extent been dominated by the assumption that

development is measured in terms of economic growth. Development is a contentious issue with several conventional and unconventional positions within it. In brief, the conventional position within development studies asserts that development is equal to economic growth. Economic growth means achieving a more massive economy – producing more goods and services on the one side, and a larger total income on the other (Westen, 2019). Opponents of this conventional view argue that measuring development in terms of economic growth, with 'the level of development' seen in terms of 'size of economy' is too narrow. Moreover, development thinking in general has long been dominated by using theories that try to explain 'everything' and viewing development as a singular issue or situation, one that can be defined in terms of broad societal characteristics and structures. Many social scientists are now sceptical about such overarching 'grand theories', preferring to study and explain social phenomena in terms of the initiatives of individual people, organisations and other 'stakeholders'. Today's dominant discourses of international development increasingly focus on human agency as the measure of development in terms of individual capabilities, and human agency is at the heart of development discourse (Chandler, 2013). Within this body of literature, economic growth is not denied as important for development, but it is argued that economic growth also depends on the quality of human beings and that of being cultivated through deliberate public policy and social commitment (Westen, 2019). In brief, development thinking is moving away from structural and macro approaches in development theory in favour of micro and actor-oriented approaches. Agency is prioritised over structure. This centrality of the human in often greeted as liberating and emancipatory in contrast to framings of liberal modernity, which are alleged to see economic growth in narrow material terms (Chandler, 2013). This research is guided by such a micro perspective in which the human is put central.

Gender-analysis lens

It is difficult to imagine current development discourse and practice without reference to gender. The concept has become widely 'mainstreamed' and the recognition of women and their specific situations and needs in development has meant an important step forward (Westen, 2019). Within the literature on women in the mining industry, there is an expanding body of research on the intersection between gender and mining (Keenan, Kemp & Ramsay, 2016) (*see literature review*). This work has raised awareness of the roles and experiences of women and men in a range of mining contexts: within mining companies, in the communities affected by mining, and in the informal mining sector (Lahiri-Dutt, 2011). While women have been linked to the mining industry in a variety of ways, mining remains a characteristically 'masculine' industry, where the power and profits tend to reside with elite males (Keenan et al., 2016). The industry and its related institutions tend to reproduce this inherent gender bias, which reinforces a male-centric view of development (Macintyre, 2011; Robinson, 1996) and can

exclude women from exercising agency in relation to mining developments and their impact on livelihoods (Lahiri-Dutt, 2011). A way to shed light the different roles played by men and women in the mining industry is by adopting a gender-lens. A gender-lens means working to make gender visible by asking if, how, and why social processes, standards, and opportunities differ systematically for women and men. According to Keenan et al., using gender as a 'lens' to look at the changes brought about by mining – in this context: mine closure – allows to differentiate some of the impacts experienced within a community (2016), and is an appropriate tool to apply to overcome often ignored complementarities between men and women (Meinzen-Dick et al., 1997).

2.3 Research objectives

The overarching objective of this research is to gain understanding of the long-term impacts of mining on host-communities. By using the Kwale mine in Kwale county, Kenya, as a case study, this research aims to describe and explore the consequences of mining operations and activities as experienced by the local host-community from commencement of production up until mine closure.

2.4 Relevance of the research

With the global land-grab becoming a key development issue, there have been firm reactions from states, corporations, and civil society groups around the world (Borras et al., 2011). Especially in relation to the mining industry, where large-scale land-based investments have been associated with both positive and negative implications for host-countries. On the one hand it is argued that these investments contribute to economic growth through royalties, employment generation, an increase in initiatives aimed at helping the community and increased social cohesion. However, it is often also associated with issues such as mining-induced displacement and resettlement (MIDR), local economic instability, adverse environmental aspects and social disruption. Strategies to mitigate these negative impacts are not compulsory to implement and as a consequence, mining actors might not always feel the urgency to improve. It is particularly interesting to study these dynamics in the mine closure cycle. Globally, there are relatively few publications that specifically address mine closure (Bainton & Holcombe, 2018), and as stated before, there is a general lack of understanding of the consequences that mine closure may have on affected communities. Moreover, relatively little is known on a global scale about the current trajectory of mine closures in different jurisdictions, let alone the social liabilities that accompany those closures (Bainton & Holcombe, 2018).

Furthermore, the use of a gender lens is highly relevant in this context. While there is a significant amount of scholarly work published on gender, development and mining, mining is still commonly seen as a "*quintessentially masculine endeavour*" and many studies in the mining sector have

adopted gender-blind approaches, reinforcing the masculinism the large-scale mining industry is already notorious for (Lahiri-Dutt, 2011, p. 9). By shifting away from gender-blind approaches and conducting this research through a gender lens, it is possible to shed light on the differences and complementarities between men's and women's interests and roles which are often overlooked (Meinzen-Dick et al., 1997).

2.5 Research questions

Following on from the theoretical embedding and the research objective of this research, several research questions have been formulated. The three sub-questions are answered in the analytical chapters (5-7), and the main research question is answered in the conclusion (chapter 9). Sub-question 1 provides insights in Base Titanium's history as a mining company, its role in Kenya's mining sector and examines Base Titanium's vision regarding (community) development programmes and plans in place. Sub-question 2 focuses upon the consequences and impacts of the arrival of Base Titanium on local communities in the study area. A key part of this part is to uncover current involvement and engagement of local men and women regarding the Kwale Project by Base Titanium. It provides insights in who is actually considered the host-community that is affected by Base Titanium's mining activities and explores local perceptions by unveiling local perspectives on the ground. The third sub-question of this research encloses relevant processes taking place on the ground and outlines Base Titanium's vision regarding its expected mine closure and how this is perceived on the ground. It also takes into account lessons learned from past mine closure and looks at how other mining companies have prepared for mine closure.

Main question: What are the long-term impacts of mining on local livelihoods and development?

The sub-questions are:

1. What are the characteristics and development path of titanium mining in Kwale county?
2. In retrospect: What have been the local impacts of the Kwale Project from its inception?
3. In prospect: What are the local impacts of Base titanium's expected mine closure?

Chapter 3. Methodology

This chapter covers the methodology adopted in this research. First, the research design is outlined. Thereafter, methods and techniques used for data collection and analysis are provided. This chapter also includes a description and rationale for the selected respondents. Finally, it reflects upon the positionality as researcher, limitations and potential biases, and outlines the challenges that conducting research in times of a pandemic brings.

3.1 Research design

Qualitative research

From previous research and academic literature, it has become clear that both qualitative as quantitative approaches and methods have been applied in impact-related research. Conducting quantitative research has both advantages and disadvantages. For example, using (structured) questionnaires is a useful technique to gather data in a limited time frame and data is often very consistent and precise. However, quantitative methods are not particularly useful to understand the context of a phenomenon and data may not be robust enough to explain complex issues. Since this research aims to understand the context of a specific phenomenon, it is argued that a qualitative approach fits best. Quantitative information from secondary sources might be very relevant but are always used to supplement qualitative data. There is a wide consensus that "qualitative research is a naturalistic, interpretative approach concerned with understanding the meanings which people attach to phenomena such as actions, decisions, beliefs and values within their social world", as stated by Ritchie, Lewis, Nicholls and Ormston (2013, p. 3). It is an approach that allows a researcher to examine people's experiences in detail, by using a specific set of research methods. One of the main distinctive features of qualitative research is that the approach allows a researcher to identify issues from the perspective of the study participants and understand the meanings and interpretations that they give to behaviour, events or objects. Qualitative research is an interpretive approach which means that things are studied in their natural settings, attempting to make sense of, or interpret, phenomena in terms of the meanings people bring to them (Hennink, Hutter & Bailey, 2019). Since this research focuses on gaining insight in the long-term impacts of large-scale land-based investments in the mining sector on men and women's livelihoods, less structured approaches are more appropriate.

Case study

This research is geographically confined and focused on one specific case study. The case study as a scientific method is, and has been for a long time, a subject of heavy discussion (Krusenvik, 2016). The

advantage of making use of a case study is that is can close in on real-life situations and test views directly in relation to phenomena as they unfold in practice (Krusenvik, 2016). Moreover, according to Krusenvik (2016), case studies as research method have their strength in obtaining detailed and relevant data and the information will not be taken out of context. Given the connectedness of space, it should however, be taken into account that this particular case study is not only confined to its geographical location, as localities are interconnected with other localities elsewhere. Therefore, development within this case study should not be studied in isolation but should be studied in relation to other places and people elsewhere (Zoomers & Van Westen, 2011). It is therefore that several other cases from different locations are also included within this research, each selected upon their relevance for this research (e.g. because of (expected) mine closure).

3.2 Research instruments

This research relies on both primary as well as secondary data to answer the research questions. Primary data comprises of information collected in the field from a sample of the target population. It includes responses from semi-structured in-depth interviews, participant observation and ethnographic fieldnotes. Secondary data is collected to complement the primary data from the field and includes information from secondary sources such as published or unpublished work based on research that relies on primary sources (Rabianski, 2003).

Primary data collection

Ethnography: participant observation

The definition of the term ethnography has been subject to controversy but in practical terms, ethnography usually refers to the study of social interactions, behaviours, and perceptions that occur within groups, teams, organisations, and communities (Reeves, Kuper & Hodges, 2008). Ethnographic methods rely substantially or partly on participant observation (Hammersley & Atkinson, 1994). Observational techniques make sense when one wants to understand experience from the point of view of those who are living it or from the context in which it is lived (Adler & Clark, 2014). It has been argued that in a sense all social research is a form of participant observation, because one cannot study the social world without being part of it (Hammersley & Atkinson, 1983 in Hammersley & Atkinson, 1994). Especially when dealing with sensitive topics, participant observation allows researchers to observe events that informants may be unable or unwilling to share when doing so would be impolitic, impolite, or insensitive (Marshall & Rossman, 2014). Furthermore, in revealing what lies beneath, ethnographic research can empower the very people being studied, transforming the 'public consciousness' and 'common sense' about the disadvantaged in society (Fine, Weis, Weseen & Wong, 2003). Ethnography

through participant observation allows for an insightful understanding of the consequences of mining activities and expected mine closure on the livelihoods of local communities by immersing oneself in personal face-to-face relationships with a variety of local community members in order to gain an insider's view of the issues under study.

(Digital) semi-structured in-depth interviews

Another useful instrument to gain in-depth information on people's experiences, life stories and feelings is through semi-structured in-depth interviews (Hennink et al., 2019). The less structured interviews allow for exploratory and descriptive work and to develop insights into other people's worlds (Adler & Clark, 2014), which is especially relevant for this research. For the impact-related part of this research, semi-structured in-depth interviewing as a method allow for describing and exploring the consequences of mining activities and expected mine closure as experienced by local community members. Moreover, making use of semi-structured and (in)formal interviews is useful to map out all the players in the field, from non-governmental, humanitarian and civil society organizations, to government officials in order to get a grip on their views and perspectives. By making use of an interview guide, consisting of a list of topics and open-ended questions, the interview can be easily modified and adapted for each interview, and participants are encouraged to 'tell their stories' (Adler & Clark, 2014). Due to the (travel)restrictions associated with the current pandemic, the method of semi-structured in-depth interviewing is not solely used on-site but complemented with digital Skype and/or WhatsApp (video)calls.

Secondary data collection

Secondary data collection already starts prior to departure to the research area, mainly through online desk research. Briefly stated, secondary data sources consist of data collected earlier by others or for other purposes than research and includes official statistics, administrative records and other accounts kept routinely by organisations (Hox & Boeije, 2005). These organizations are established for the precise purpose of acquiring, archiving, and disseminating data for secondary research (Hox & Boeije, 2005) and are often found in official data archives online. Online desk research includes gathering and analysing these existing resources, in print or published on the internet. It is not only useful to prepare for fieldwork, since it collects knowledge about important concepts, but also to supplement primary data collection. The advantage of (online) desk research is that previous research is reviewed which provides a broader understanding of the field or topic under study (Travis, 2016).

In terms of textual secondary sources, this research relies on a combination of different sources of information. It includes online data gathered from official data archives such as Kenya National

Bureau of Statistics (KNBS), Kenya Land Alliance (KLA), annual reports from mining companies (e.g. Base Titanium), reports from (local) civil society organizations, researchers, PhD-students and internet-accessible interlocuters. Some primary website materials are also accessed (e.g. Base Titanium's website). This list is not intended to be exhaustive; rather, it is dependent on whenever sufficient different dimensions of the same phenomenon are captured.

3.4 Sampling strategy

Selection of respondents

For the primary data collection part of this research, the target population encompasses all relevant stakeholders, ranging from (grassroots) women organizations, local civil society organizations, local non-governmental organizations, local community organizations, employees from Base Titanium to community members who are involved in the Kwale Project. The question of what sample size is needed for qualitative research is frequently asked by individual researchers (Dworkin, 2012 in Boddy, 2016). However, in this research, it is difficult to identify the sample size on beforehand, since the concept of data saturation is adopted. Data saturation is the point at which no new information or themes are observed in the data from the completion of additional interviews or cases (Boddy, 2016). Even though this method provides little guidance for estimating actual sample sizes, the idea of saturation is very helpful at the conceptual level. The sample procedure used in this research is a combination of convenience sampling as well as snowball sampling. Convenience sampling involves the selection of the most accessible subjects within the target population. The subjects are chosen because they are the easiest to recruit and are willing to participate (Marshall, 1996; Lunsford & Lunsford, 1995; Sedgwick, 2013). This sampling technique is also the least costly in terms of time, effort and money (Marshall, 1996; Lunsford & Lunsford, 1995). A sampling procedure may be defined as snowball sampling when informants are accessed through contact information that is provided by other informants (Noy, 2008). This process is, by necessity, repetitive: informants refer the researcher to other informants, who are contacted by the researcher and then refer her or him to yet other informants, and so on (Noy, 2008). Snowball sampling is arguably the most widely employed method of sampling in qualitative research in various disciplines across the social sciences (Noy, 2008).

3.5 Data analysis

Inductive approach for analysis

For both primary and secondary data collected, an inductive approach for analysis is adopted. What makes a study qualitative is that it usually relies on inductive reasoning processes to interpret and structure the meanings that can be derived from data (Thorne, 2000). Generally, inductive reasoning

uses the data to generate ideas, whereas deductive reasoning begins with the idea and uses the data to confirm or negate the idea (Thorne, 2000). The assumption of an inductive approach is that the most important themes will emerge from specific group discussions and this information is then organized into a codebook (Ayala & Elder, 2011). Codes are defined as "tags or labels for assigning units of meaning to the descriptive or inferential information compiled during a study" (Miles & Huberman, 1994, in DeCuir-Gunby, Marshall & McCulloch, 2011). A codebook is then a set of codes, definitions, and examples used as a guide to help analyse the data (DeCuir-Gunby et al., 2011). Codebooks are essential to analysing qualitative research because they provide a formalized operationalization of the codes (DeCuir-Gunby et al., 2011). Through a careful analysis of data, using this inductive process, tentative theoretical explanations are generated from empirical work (Reeves, Kuper & Hodges, 2008). Analysing qualitative data involves shifting and sorting through pieces of data to detect and interpret thematic categorisations, search for inconsistencies and contradictions, and generate conclusions about what is happening (Thorne, 2000).

3.6 Reflection

Positionality as a researcher

In order to ensure validity of the research stance, it is critical to reflect on, flesh out, interrogate and state my positionality as a researcher. Beliefs, value systems, and moral stances are fundamentally present and inseparable from the research process. Therefore, it is necessary to acknowledge that this research is not completely objective but influenced by the social and political context that creates my identity in terms of race, class, gender, sexuality, and ability status. It is my ethical duty to intentionally and mindfully attend to these roles in this researcher reflection memo.

For this proposed study, the primary researcher is a 26-year-old white atheist woman who is working toward a master's degree in international development studies. She is aware of the existing stereotypes and roles assigned to her as an academic white female from the global north, conducting research in the global south. She is aware of the fact that she is not the first white researcher visiting the research area, and that local perceptions might be shaped by previous experiences of having white researchers in the area (e.g. being seen as either the one who brings money and/or resources or there to help in any other way – being seen as 'white saviour' and/or empowerment facilitator). During data collection and data analysis she acknowledges the importance of constantly emphasising the role of student. A role in which she is eager to learn, flexible and open-minded. She is not an expert but on-site to collect views, opinions and perceptions from the locals itself, who she sees as the expert.

One's positionality is however not fixed or static, but constantly evolving. The researcher-participant relationship is also fluid. Each one is constantly influencing the other through interactions. It is therefore that a journal is kept throughout the process of data collection and analysis. The journal is there to capture understandings, through writing notes of (cultural) encounters in the field. These notes are described and analysed while conducting research, allowing for constant critical self-reflection and therefore contributing positively towards awareness creation of the positionality as a researcher.

Conducting research in times of a pandemic

Conducting research in times of a global pandemic comes with several challenges. While it is not unusual to encounter challenges, disruptions, and situations while conducting research that result in a change of plans, methods, and research questions, this requires adaptation and flexibility skills. The COVID-19 pandemic is truly exceptional, with profound implications for this research. First and foremost, the 'field itself is disappearing' (Burman, Johnson, Jörgenson, Jung, Leonardsson, Linholm & Schulz, 2020). A large share of this research depends heavily on work conducted in the field – on the ground. However, due to an abrupt ending of this fieldwork because of the coronavirus, a shift in focus from field research towards (online) desk research is necessary. Where the initial focus is on primary data collection in the field, secondary data collection through online sources gains a more prominent place. Because of the unexpected disruption of the fieldwork, not all research sites planned on visiting have been visited, not all key interlocutors have been met and not all desirable primary data has been collected in the field.

The pandemic also raises acute ethics concerns of several types that need to be considered carefully. For example, relating to selected interlocutors whom may find themselves in more vulnerable positions than was anticipated before the pandemic. Moreover, while it is often already challenging to reach marginalized groups, being forced to work at a distance due to the pandemic will make it even more challenging to do so. Often ad hoc measurements and informal means of communication are necessary. The pandemic, however, restricts this and requires the use of more formal channels to get in touch with respondents and key interlocutors. These formal channels and gatekeepers often have relatively more power, which raises ethical concerns (Burman et al., 2020). One way to limit the impact of the global pandemic while conducting research is to be transparent and constantly reflect on how it has affected the process. By regularly making notes about how it is affecting the research, and what choices are made because of it, these challenges can be used to become a better researcher through adapting, being flexible and making methodological contributions.

3.7 Potential limitations

Besides the challenges a global pandemic brings for this research, there are also methodological limitations that need to be taken into account. With regards to the chosen research design, qualitative research is an interpretive approach (Hennink et al., 2019). While there are several unique advantages of qualitative research, it also comes with some limitations. Within interpretive research social reality is embedded within and impossible to abstract from the researchers own social settings. Reality is interpreted through a 'sense-making' process and is therefore never completely objective but always influenced by the researchers own biases and views of reality. It is therefore that primary data generated by interpretivist studies cannot always be generalized since data is heavily impacted by personal viewpoint and values. Therefore, reliability and representativeness of data is undermined to a certain extent as well. This limitation can however be mitigated by placing critical attention towards the role of the researcher throughout the data collection and analysis process. For example, in case research, the researcher must take a 'neutral' or unbiased stance during the data collection and analysis processes and ensure that personal biases or preconceptions does not taint the nature of subjective inferences derived from interpretive research. Besides, while reliability and representativeness of primary data might be undermined, primary data generated via an interpretive approach are often associated with high levels of validity because data tends to be trustworthy and honest.

As argued earlier, case studies as research method have their strength in obtaining detailed and relevant data and the information will not be taken out of context. This is however, also one of the main limitations of case studies. One of the biggest concerns and most common critiques against case studies, is its lack of scientific generalizability. Because case studies are highly specific and relate to a particular context, the question arises if it is possible to generalize from the result, to say that what applies to the few also apply to all others. Case studies are therefore said to have low external validity (Krusenvik, 2016). However, even though the case study as a research method is faced with some criticism, some researcher argue that these are not always entitled. According to Woodside (2010), the objective of case study research is not to generalize findings to a population, but to prove theory. Moreover, generalizability of findings is not the main aim of this research. Finally, this research is conducted in collaboration with vulnerable communities. Working with vulnerable communities bears inherent dangers (Abuya, 2013). According to Abuya (2013), one such danger is the possibility that the affected persons may exaggerate their present circumstances in an attempt to seek sympathy and/or support. This could be identified as a limitation that should be taken into account. By making clear from the onset, and throughout data collection, that no sides are taken, and the motive is to unveil social dynamics, this is mitigated.

Chapter 4. Geographical Contextual Framework

This chapter reviews the state of the art of the research topic in a wider perspective and narrows it down to its specific geographical context. It starts off with a global perspective, including mining regions around the world. Followed by a description and rationale of the particular choice of site in this research. Subsequently, it looks into this research regional setting.

4.1 Where mining is thriving

The mining industry exists on a global scale. The biggest mining region in the world by far is Asia, which excavated almost 10 million metric tons in 2017, followed by North America with around 2.5 billion tons (Buchholz, 2019). Because of the large Australian mining sector, Oceania is also one of the biggest contributors to mining worldwide, on par with Latin America and Europe (Buchholz, 2019). Numerous industries worldwide depend on the supply of commodities from underground such as minerals and metals (Garside, 2019) and the products of the mineral industry are numerous and extremely diversified (Bosson & Varon, 1977). Consequently, the mining sector is pivotal to the world's economy (Garside, 2019). In terms of volume, the most exploited commodities worldwide are coal, iron ore, bauxite, and potash (Garside, 2019).

Mining in the African context

Africa contains around 30% of the world's mineral resources – including the largest known reserves of a wide range of strategically important minerals, including phosphate, platinum-group metals, gold, diamonds, chromite, cobalt, manganese, and vanadium, and huge deposits of aluminium, uranium, iron ore, and coal (Taylor, Schulz & Doebrich, Orris, Denning & Kirschbaum, 2005). Africa's mineral wealth is now attracting a stampede of foreign investment (Edwards, Sloan, Weng, Dirks, Sayer & Laurence, 2014), and many countries in Africa have either recently introduced or are working on new mining laws that seek to encourage investment. For example, more than 230 Australian mining companies are involved in over 600 projects in mining exploration, extraction, and processing across more than 42 African countries (Edwards et al., 2014). Such investment is historically unprecedented in African natural resource development (Broadman, 2007; Janneh & Ping, 2011). The future is bright for mining in Africa, and the opportunities for mining, resources and infrastructure companies are impressive, however there are also many obstacles that need to be taken into account.

4.2 Choice of site

This research main focus is the Kwale Project in Kwale County, Kenya. Even though this mine is currently still operating, it is expected to close in the near future. According to the General Manager for External Affairs of mining company Base Titanium, it's Kwale Mine has just over three years mine life remaining and by mid 2023, all currently identified deposits of minerals have been extracted and mining operations will cease (Simon Wall, General Manager for External Affairs, Base Titanium, 2020).

Name of the case	*Investor (mining company)*	*Geographical location*	*Mine closure*
The Kwale Project	Base Titanium Limited	Kwale County, Kenya	Mid 2023

Table 1. Main case study

Base Titanium Limited, an Australian-based, African-focused mineral sands producer and developer, bought the mines in Kwale County in 2010 (Hakijamii, 2017) and finished construction of the mine site in 2013. The mine site is located 10 kilometres inland from the Kenyan coast and 50 kilometres south of Mombasa (Chelagat, 2015).

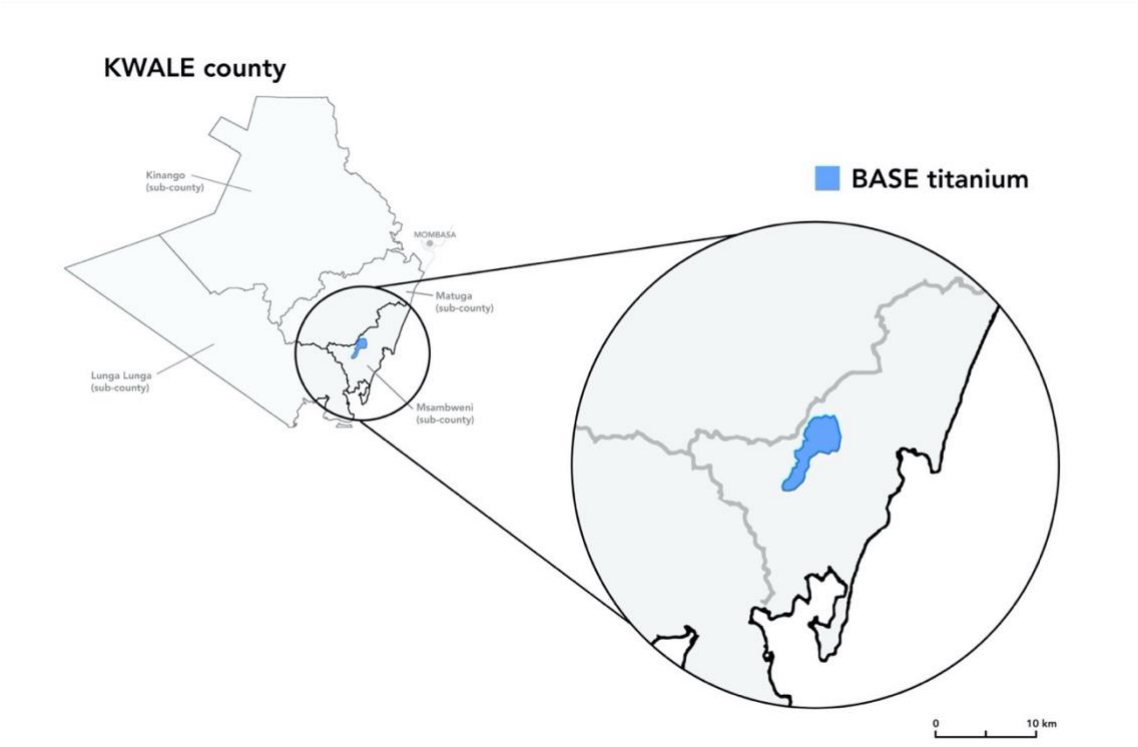


Figure 1. Visualization of Base Titanium's mine area

4.3 Regional setting

A Kenyan perspective

Kenya has not been a major player in the mining industry. However, with the arrival of Base Titanium Limited, this is slowly starting to change. Kenya is a republic located in Eastern Africa, bordered to the north by South Sudan and Ethiopia, to the east by Somalia and the Indian Ocean, to the south by Tanzania, and to the west by Lake Victoria and Uganda (Ominde, Ntarangwi & Ingham, 2019). It has nearly 50 million people and unlike many of its global counterparts whose populations are rapidly ageing, Kenya's population is one of the youngest, with the median age being only 20 and nearly three quarters of the population is under 30 (Nelson, 2019). Kenya gained independence from the British in 1963. Following political instability, a new Constitution was adopted in 2010. Changes included, inter alia, a reduction in the power of the presidency, and provisions for a new decentralized government structure based on counties (Ominde et al, 2019). Kenya is divided into 47 counties, which are headed by directly elected governors. Each county has an assembly, which is composed of directly elected members and nonelected members who are selected after being nominated by political parties. During the past several decades, Kenya's economy has undergone many changes and economic performance has been characterized by periods of stability, decline, or unevenness (Hope Sr, 2011). Vision 2030 – the long-term development blueprint for the country – aims to transform Kenya into a newly-industrializing, middle-income country (Hope Sr, 2011). Two sectors that are great contributors to Kenya's economy are the service sector and agriculture. Agriculture does not only supply the manufacturing sector with raw materials and generates tax revenues and foreign exchange that support the rest of the economy, but also employs the majority of the population. Even though agriculture plays an important role in Kenya's economy, efforts have been made to decrease its dependence on volatile agricultural markets by diversifying exports and exploring other sectors in the last decade of the 20th century (Ominde et al 2019). One of these other sectors is the mining sector.

Kenya's mining sector currently contributes less than 1% of Kenya's Gross Domestic Product (GDP) and Kenya has not been considered a particularly mineral rich country (Kenya National Bureau of Statistics (KNBS), 2019). Geological surveys have however indicated that this assumption could have understated what is actually available. Kenya has sizable deposits of limestone, marbles and dolomites and numerous mineral occurrences have been recorded and mapped in the country. Mineral resources in Kenya include gold, iron ore, talc, soda ash, earth minerals and gemstones (Government of the Republic of Kenya, 2016). However, limited detailed exploration work has been carried out to establish the extent of most of these mineral occurrences.

Even though Kenya is still new to the industry, it is assumed Kenya's mining sector has the potential to become a major contributor to the country's GDP. Large deposits of minerals such as

titanium exist on the coastal strip of Kenya, accounting for 40 percent of the world's known titanium reserves and claimed to be worth over trillions of dollars on the world's market (Abuodha, 2002). Kenya's coastline runs for some 600 km bordering the Western Indian Ocean (McClanahan, Mwaguni & Muthiga, 2005). The definition of the coastal region of Kenya includes six counties: Taita Taveta; Kwale; Mombasa; Kilifi; Lamu and the Tana River. With the arrival of mining company Base Titanium Limited in Kwale county, the area has been the first to host a large-scale mining project, labelled as 'the Kwale Project'. Kwale county is situated in the South-eastern corner of Kenya and covers an area of 8270.2 km2. It has four major topographical features, making it ideal for different types of economic activities such as agricultural production, livestock rearing, wildlife conservation, fishing, tourism and mining. It is populated mainly by the Digo and Duruma natives, though it has experienced immigrations from other Kenyan and foreign communities (Hakijamii, 2017). According to KNBS (2019), Kwale county's population is 866,820, consisting of 425,121 males, 441,681 females and 18 intersex persons. Kwale county has especially deposit of diverse minerals, with those already discovered and being exploited including titanium (rutile, ilmenite, zircon), among others (Hakijamii, 2017). Hosting the Kwale Project marked the beginning of a new dawn for the mining sector in Kenya.

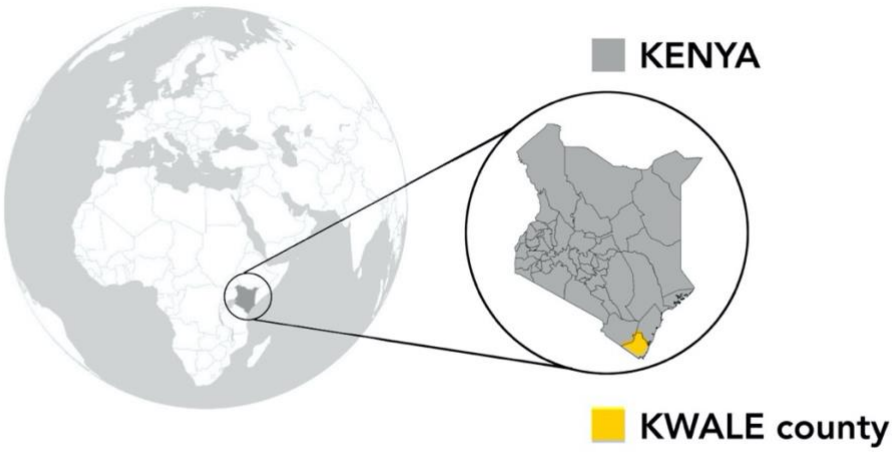


Figure 2. Geographical location of Kwale county in Kenya

Kenya's mining industry: the policy, legislative and institutional framework

In Kenya, government policy on mining has been largely tacit, with the Mining Act dating from 1940 (Irwin & Waweru, 2017). This changed however in 2013 when the government directed efforts to improve mineral exploitation by establishing a ministry dedicated to the development of the mining sector. The Ministry of Petroleum and Mining undertakes various functions aimed at enhancing growth of the mining sector in the country (Muigua, 2019).

Constitution of Kenya 2010

The mining sector in Kenya is to a large extent governed by the Constitution of Kenya 2010 and the Mining Act 2016. The Constitution of Kenya 2010 makes provisions on 'natural resources' which means the physical non-human factors and components, whether renewable or non-renewable, including rocks, minerals, fossil fuels and other sources of energy (Muigua, 2019). Article 60 of the Constitution provides for the principles of land policy which include sustainable, equitable, efficient and productive management of land resources. Under Article 62 (1) (f) of the Constitution "all minerals and mineral oils as defined by law" are classified as public land and by Article 62 (3) public land is vested in and held by the national government in trust for the people of Kenya. Regulation of land use and property is provided under Article 66 (1) and states that the State may regulate the use of any land, or any interest in or right over any land, in the interest of defence, public safety, public order, public morality, public health or land use planning. Legislation shall be enacted by Parliament (Article 66 (1)), ensuring that investments in property equitably benefit local communities and their economies. The Constitution further provides the national values and principles of governance which bind all State organs, state officers, public officers and all persons whenever any of them applies or interprets this Constitution (Article 10 (1) (a)), enacts, applies or interprets any law (Article 10 (1) (b)); or makes or implements public policy decisions (Article 10 (1) (c)). This includes any decision-making or implementation of any law affecting the mining sector (Muigua, 2019).

Mining and Minerals Policy, 2016

The Mining and Minerals Policy was put in place to address gaps that have existed in the mining sector and form the basis for review of the outdated Mining Act of 1940. The overall goal of the Policy is to set out frameworks, principles, and strategies to provide for exploration and exploitation of mineral exploration (Muigua, 2019).

Mining Act, 2016

The Mining Act 2016 was enacted to give effect to Articles 60, 62 (1) (f), 66 (2), 69 and 71 of the Constitution in so far as they apply to minerals; provide for prospecting, mining, processing, refining, treatment, transport and any dealings in minerals and for related purposes (Muigua, 2019). The Mining Act further requires that mining operations comply with provisions of existing water rights law, occupational health and safety laws, land use laws, and environmental management and protection law (KPMG International, 2016). Under this provision, the Act mandates that a prospecting license, a retention license or a mining license shall not be granted to an applicant unless the applicant has submitted site mitigation and rehabilitation or mine closure plans for approval (Mining Act, Article 180 (1)). Also, the Cabinet Secretary may prescribe Regulations for site rehabilitation and mine closure obligations separately as well (Mining Act, Article 180 (2)).

The Environmental Management and Coordination Act (EMCA), 2012

The Environmental Management and Coordination Act 2012 is the law on environmental management and conservation in Kenya. EMCA establishes among others the National Environment Management Authority (NEMA). NEMA is the principal instrument of government charged with the implementation of all policies relating to the environment, and to exercise general supervision and coordination over all matters relating to the environment. NEMA is empowered to develop regulation, prescribe measures and standards and, issue guidelines for the management and conservation of natural resources and the environment. The Act provides among others for environmental protection through an Environmental Impact Assessment (EIA), and NEMA is mandated by the EMCA no 8 of 2012 to administer the EIA.

An EIA is a critical examination of the effects of a project on the environment. It identifies both negative and positive impacts of any development activity or project, how it affects people, their property and the environment. EIA seeks to minimize adverse impacts on the environment and reduces risks. The Second Schedule of EMCA 2012 specifies the projects to be subjected to EIA and includes among others, processing and manufacturing industries, including mineral processing, reduction of ores and minerals (Article 9 (a)). Section 58 (1), part VI of the EMCA 2012 requires that "*any approval, permit or license granted under this Act or any other law in force in Kenya, any person, being a proponent of a project, shall before an financing, commencing, proceeding with, carrying out, executing or conducting or causing to be financed, commenced, proceeded with, carried out, executed or conducted by another person any undertaking specified in the Second Schedule to this Act, submit a project report to the Authority, in the prescribed form, giving the prescribed information and which shall be accompanied by the prescribed fee*".

Chapter 5. Characteristics of Titanium Mining in Kwale county

The following chapters (5, 6 and 7) are dedicated to a systematic presentation of the research findings according to each of the three sub-questions. These findings are based on primary data gathered during the field work period taking place between February 9, 2020 and March 17, 2020, as well as secondary data gathered through online desk research.

5.1 Introducing Base Titanium and the Kwale Project

Base Resources Limited is an Australian-based, African-focused established mineral sands company, listed on the Australia Securities Exchange (ASX) in Australia and Alternative Investment Market (AIM) in the United Kingdom. Base Resources Limited is headquartered in Perth, Australia. Base Titanium is a wholly-owned subsidiary of Base Resources Limited (Base Titanium, 2020). Mineral sands are typically old beach or dunal sands that contain concentrations of important titanium minerals (including rutile and ilmenite) and zircon. Mineral sands deposits are most commonly formed along beaches and coastal dunes from the natural concentration of heavy minerals by wave and wind activity. They are found in a range of everyday consumer goods such as pigment for paint, paper and plastics as well as toothpaste, sun cream and homewares such as ceramics. New housing construction, growth in floor space, health of emerging economies and the seasonal northern hemisphere painting season are all key drivers of demand for mineral sands (Base Resources, 2020).

With the Kwale Project, Base Titanium holds a Special Mining Lease (SML) No 23, located in the Kwale Prospecting License. Base Titanium's SML is valid until 6 July 2025, whereas it's prospecting licenses are valid until 25 May 2021 and 4 December 2021 (*see table 2*). The Kwale Prospecting License comprises three mineralised zones, the Central, South and North Dunes. The Kwale Project comprises the Central and South Dunes, which are separated by the Mukurumudzi River (Base Titanium, 2020). Base has exhausted the Central Dune in June 2019 and shifted its operations to the South Dune (Juma, 2019). The Magarini Sands, which host the Kwale deposit, are of aeolian origin deposited as coastal dunes after conditions of intense erosion (Base Titanium, 2020).

License		*Valid until*
Special Mining Lease No 23		6 July 2025
Prospecting License PL/2018/0119	SW Sector of PL/2018/0119	25 May 2021
	NE Sector of PL/2018/0119	
Prospecting license PL/2015/0042		4 December 2021

Table 2. Mineral Rights of the Kwale Project

The planning and development of the Kwale Project has occurred over a number of years, with initial exploration and prefeasibility work being undertaken in the late 1990s (Base Resources Ltd, 2012). Project development commenced in November 2011 and was completed in November 2013 (Base Titanium, 2020). As part of the project development, Base Titanium implemented several infrastructural projects, to which they refer as infrastructure packages. Construction of each infrastructure package has been completed before commencement of production in November 2013. These infrastructure packages enabled the development of Base Titanium's mine area, including the construction of process plants, marine facilities, power line and tailings storage facility. Besides, it comprises an 8km sealed 'Mine Access Road' linking the mine site to the coastal highway as well as an 8.8 million cubic metres water storage dam ('Mukurumudzi Dam') on the Mukurumudzi River.

Base Titanium's corporate social responsibility (CSR) strategy

Base Titanium is committed in limiting and mitigating its negative impact on the host-community and therefore implemented several programmes and plans during its operational phase. Through these programmes and plans, Base Titanium aims to maintain a social license to operate (SLO). The SLO builds upon strong relationships between the mining company and the communities. In Base Titanium's case this is established through an Environment and Community Affairs Department which forms a bridge between Base Titanium and the communities. Communities are engaged by Base Titanium through the formation of committees and efforts to create community awareness. Committees are formed to address grievances and concerns; identify community priorities and achieve participatory solution. Examples of these committees are 'Affected Stakeholder Committees' and 'Sub-county Liaison Committees', the latter consisting of affected stakeholders, community leaders representing women, youth and/or persons with disabilities, political leaders, religious leaders and government and county-level lead agencies and administrators. Efforts to create community awareness consist of the provision of project information to stakeholders through discussion, drama, formal presentation and display events in schools and village centres.

Community development

Besides engaging communities through the establishment of committees and awareness creation, Base Titanium has a suite of community development programmes in place. In brief, these community development programmes are focused on four key pillars: providing social infrastructure for the communities (1); promoting livelihood upliftment and enhancement programmes (2); improving community health (3), and; providing educational opportunities (4).

Key pillar 1: Providing social infrastructure for the communities

The first of Base Titanium's four key pillars focuses upon the provision of social infrastructure for the communities. Base Titanium has constructed social, educational and medical facilities, ranging from the built of a social hall, dispensary and rehabilitation of roads in host-resettlement site Bwiti village, upgrading existing educational facilities throughout Kwale county and a health centre in Magaoni village. Table 3 shows a total expenditure on social infrastructure of Ksh 335,1 million (Ksh 19,1 million + Ksh 228 million + Ksh 88 million), which is approximately €2,8 million.

What	*Where*	*When*	*Funding Base Titanium*
Social facilities			
Social Hall	Bwiti Village, Lunga Lunga Sub-County	2009	Ksh 5.4 million
Security Lightning	Ukunda	2015	*Unknown*
Community Gym	Ukunda	2015	*Unknown*
Rehabilitation of roads	Jego-Kiwegu road and Bwiti roads	*Unknown*	Ksh 12 million
Green houses and agricultural projects	*Unknown*	*Unknown*	Ksh 1.7 million
Educational facilities			
Upgrading/refurbishing existing facilities, and new schools	Lunga Lunga, Msambweni, Matuga and Likoni Sub-counties	2011-2020	Ksh 228 million
Medical facilities			
Health centre	Magaoni Village, Msambweni Sub-County	2014	Ksh 26 million
Dispensary	Bwiti Village, Lunga Lunga Sub-county	2012	Ksh 14 million
Ambulance (Toyota Landcruiser 4X4)	Msambweni County Referral Hospital	2015	Ksh 4.8 million
Water supply scheme comprising pump, tank, tank stand and piping	Mbuta health centre in Mtongwe	2015	Ksh 1.1 million
Staff housing for Ng'Ombeni Dispensary	Ng'Ombeni	2016	Ksh 7.4 million
Blood bank	Msambweni County Hospital	2017	Ksh 15 million
Maternity wing	Likoni Sub-county Hospital	2017	Ksh 19.7 million

Table 3. List of construction projects in Kwale County

Key pillar 2: Promoting livelihood upliftment and enhancement programmes

The second key pillar of Base Titanium's community development programmes is aimed at improving living standards and providing of livelihood opportunities through livelihood enhancement projects, empowerment and capacity building programmes, sports programmes and livelihood programmes. Examples of livelihood enhancement projects implemented by Base Titanium are potato, cotton, sorghum and poultry farming and beekeeping. Table 4 provides insights in the number of beneficiaries reached, being a total of approximately 1775 community members.

Livelihood project	*Initiated when*	*Beneficiaries*
Potato farming	Trials in 2014	40 farmers
Cotton farming	Trials in 2014	1000 smallholder farmers
Sorghum farming	Trials in 2016	700 farmers
Poultry & Beekeeping	Trials in 2016 and 2017	35 community groups

Table 4. Statistics on Livelihood projects (Base Titanium, 2020)

Examples of empowerment and capacity building programmes are Village Savings and Loan Association trainings, Community Economic Empowerment trainings and Maritime trainings. A sports programme is the 'Life Skills Programme' which focuses on improving children's performance through building life skills using the medium of sports and enjoyment and seeking to instil values through attitude shaping (e.g. gender equality, teamwork, anti-bullying, respect, co-existence and environmental awareness). Finally, an example of a significant development coming out of the livelihood programme initiated in 2014, was the birth of the PAVI Cooperative in 2016 (an acronym representing 'Pamba na Viazi', Swahili for cotton and potatoes). PAVI is a wholly farmer-owned cooperative, set up by the community, in partnership with Cotton On Group, Base Titanium Ltd. and NGO Business for Development (B4D), to generate income earning opportunities for farmers by creating direct links to market. It is committed to integrate cotton farmers in Kwale and surrounding counties into the supply chain of global garment company Cotton On Group. Farmers pay a membership fee of 2USD and purchase a minimum of 100 shares at 0.2 USD nominal value (20 USD) in order to join.

Key pillar 3: Improving community health

The third key pillar is focused on improving community health. In 2012, Base Titanium carried out a Health Impact Assessment (HIA) in which problematic health issues were identified. The identification of these issues led to an implementation of initiatives throughout Kwale county such as vaccination campaigns and drug-resistant tuberculosis awareness campaigns. Moreover, Base Titanium supported the Prevention of Mother to Child Transmission ('PMTCT') project, initiated in 2016, offering a range of services for women of reproductive age living with or at risk of HIV to maintain their health and stop their infants from acquiring HIV.

Key pillar 4: Providing educational opportunities

The fourth and final key pillar is related to the provision of educational opportunities in Base Titanium's host-community. Base Titanium provides academic scholarships to 'bright' students from Kwale County, that cover tuition fees. Furthermore, Base Titanium works with a number of local education NGOs and institutions by providing financial support to fund various other educational programmes aimed at increasing the number of boys and girls able to access secondary and tertiary education. A total of over 2000 students have been funded by Base Titanium between 2015 and 2019, covering an investment cost of Ksh 282 million, which is approximately €2,3 million.

What	*When*	*Beneficiaries*	*Costs/investment*
Scholarship and bursary programme	2015-2019	Over 2000 students	Ksh 282 million

Table 5. Statistics on scholarship programme from Base Titanium (Base Titanium, 2020)

Employment: 'fencing system'

Besides community development programmes and plans, Base Titanium has implemented an employment system referred to as the 'fencing' system (*see figure* 3). The fencing system is based on the principle to prioritise opportunities for local communities. According to Suleiman Mpole, a Human Resources Officer at Base Titanium, the fencing systems works as follows:

> *There are people who used to live where the mine site is located. These are the ones we call Fence 1. Fence 2 are those whose villages are located next to the mine site. Fence 3 are those whose villages are located in the wider area around the site. When there is a vacancy at Base, we give first priority to those living in Kwale county by advertising the opening through local committees. If we fail to get anyone with the required skills from the local communities we then advertise widely. If this continues and we still can't find the required skills we then advertise countrywide and also on our website* (Base Titanium, '*Local content' documentary*, 2018).

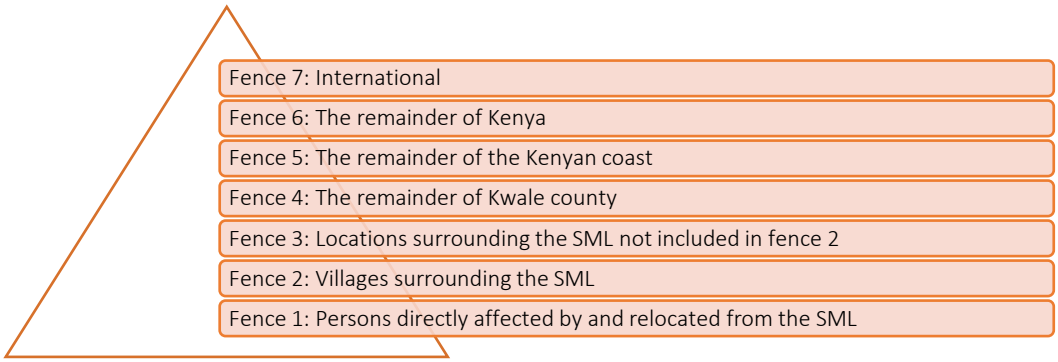


Figure 3. Fencing definitions in descending order or priority from fence 1 to 7

During the construction phase, Base Titanium reports to have employed 1,300 people from local communities. According to Base Titanium's External Affairs Manager:

> *Currently, in the operational phase, over 1,100 people are employed. Because of the fencing system, 68% of the employees are sourced from Kwale county. 30% is from the rest of Kenya and a lot of foreigners are gone. There are about 22 foreigners left (2%) and their jobs are very specialized* (*personal communication*, 2020).

	Local (Kwale County)		*National (Kenya)*		*International*		**Total**	
Construction phase	1300	100%	0	0%	0	0%	1300	100%
Operational phase	748	68%	330	30%	22	2%	1100	100%

Table 6. Employees hired by Base Titanium (Base Titanium, 2020)

Base Titanium's External Affairs Manager also states that the Kwale Project "*consists of a workforce that is 16 percent female*" (*personal communication*, 2019), meaning that 176 of the 1100 people working at Base Titanium are female and 924 people are male.

Environmental impact

Base Titanium is required under Kenyan law to conduct an Environmental Impact Assessment (EIA), which needs to be approved by the National Environmental Management Authority (NEMA) (*see chapter 4.3*). In July 2002 the National Environmental Management Authority conditionally approved the Project EIA and a License was issued in June 2005. With the Environmental Impact Assessment License EIA/001, Registration No. 0000048 issued by NEMA in 2005, the mine is compliant with Kenyan legislation. The validity of the license is maintained by way of Annual Environmental Audit Reports prepared by NEMA-licensed and registered environmental experts who undertake environmental, social and occupational health and safety compliance assessments.

In order to carry out the mandate to drive environmentally responsible actions and undertake activities in a way that minimises impacts on the environment and maximises opportunities for positive environmental outcomes, Base Titanium implemented an Environmental Policy. The Environmental and Social Management System (ESMS) was developed to give effect to this Policy. Integral to the ESMS, Base Titanium has developed a suite of Environmental Management Plans (EMPs) and programmes to guide the environmental management of the operations. The EMPs are live documents that are continually reviewed and updated in response to evolving circumstances identified through the ESMS (and are designed to cover the mine site, the Likoni port facility, minerals transportation and the water supply system). An overview of Base Titanium's environmental programmes implemented during the operational phase of the mine can be found in table 7.

Programme	Aim/what
Biodiversity and Conservation Programme	Improving conservation outcomes and improving knowledge of biodiversity
Rare and Endangered Flora Propagation Research Programme	Identify, research and propagate species of conservation interest to be used in the rehabilitation and re-vegetation of areas impacted by the project
Wetland Restoration Programme	Restoring, rehabilitating and establishing new wetlands within Base Titanium's areas of operation
Establishing a Biodiversity Corridor	Achieving net positive biodiversity outcomes by establishing a Biodiversity Corridor in the mining lease
Rehabilitation and Restoration Programme	Returning land disturbed by mining activities to a degree of its former state
Waste Recycling Programme	Preventing pollution, maximising resource efficiency and encouraging responsible behaviour in others, driven by the principles of Reduce-Reuse-Recycle
Environmental Education Programme	Encourage collective responsibility for the environment through presentations, training and workshops

Table 7. Overview of Base Titanium's Environmental Programmes

Chapter 6. Impacts of the Kwale Project on Host-community

Whereas chapter 5 focuses on a description and close examination of Base Titanium and its implemented CSR strategy, this section provides insights in local perspectives. It outlines how Base Titanium and these programmes and plans are perceived on the ground. Moreover, it encloses a presentation of gathered data on the issues arising because of Base Titanium's presence in the study area as experienced by the host-community.

6.1 Who is the host-community?

Identifying the host-community is crucial to assess local engagement in relation to Base Titanium, which is relevant to be able to say something about how they are affected by Base Titanium's expected departure in the near future. A thorough internet research before entering the field enabled an identification of the host-community, often being regarded to as all communities within Kwale county. Kwale county consists however of a large number of villages spread out over its five sub-counties (Kinango; Lunga Lunga; Msambweni; Matuga and Samburu-Kwale), that are affected by Base Titanium differently. Together with a programme officer and geomatics engineer from Kenyan-registered NGO Kenya Land Alliance (KLA), five villages have been identified as being directly affected by Base Titanium's mining activities in the past. The identification of these five villages has been verified by multiple other actors, such as a community facilitator from local civil society organisation (CSO) Kwale Youth Governance and Consortium (KYGC), and a coordinator from local CSO Human Development Agenda (HUDA). Being on the ground allowed for an identification of nine other villages that are affected by Base Titanium's mining activities. Besides these fourteen identified villages in total, it should be kept in mind there might be more villages in Kwale county that are affected by Base Titanium', which have not been identified in the past. See table 8 for an overview of households affected Base Titanium's mining activities and under which category they fall (host-resettlement site; environmentally impacted; awaiting compensation; previous compensated; negotiation on compensation and villages earmarked for exploration).

Sub-county	**Village**	**Nr. of affected households**	*Host-resettlement site*	*Environmentally impacted*	*Awaiting compensation*	*Previous compensated*	*Negotiation on compensation*	*Earmarked for exploration*
Kinango	-	-						
Lunga Lunga	Bwiti	190	X					
Msambweni	Kibwaga	32		X				
	Fingirika	288		X				
	Miembeni	34		X				
	Bumamani	250			X			
	Vumbu	48			X			
	Nguluku	74				X		
	Mafisini	92					X	

	Magaoni	-						X
	Darigube	-						X
	Mchinji rini	-						X
	Fahamuni	-						X
	Kidzumbani	-						X
	Gonjora							X
Matuga	-	-						
Samburu-Kwale	-	-						
		Total = 1008						

Table 8. Overview of villages affected by Base Titanium in Kwale county (Employees from KLA and KYGC, *personal communication*, 2020)

Almost all identified affected villages are neighbouring or close to Base Titanium's mine site area (BASE titanium) located within Msambweni sub-county, Kwale county. Except for Bwiti village, which is located in Lunga Lunga sub-county, Kwale county (*see figure 4*).

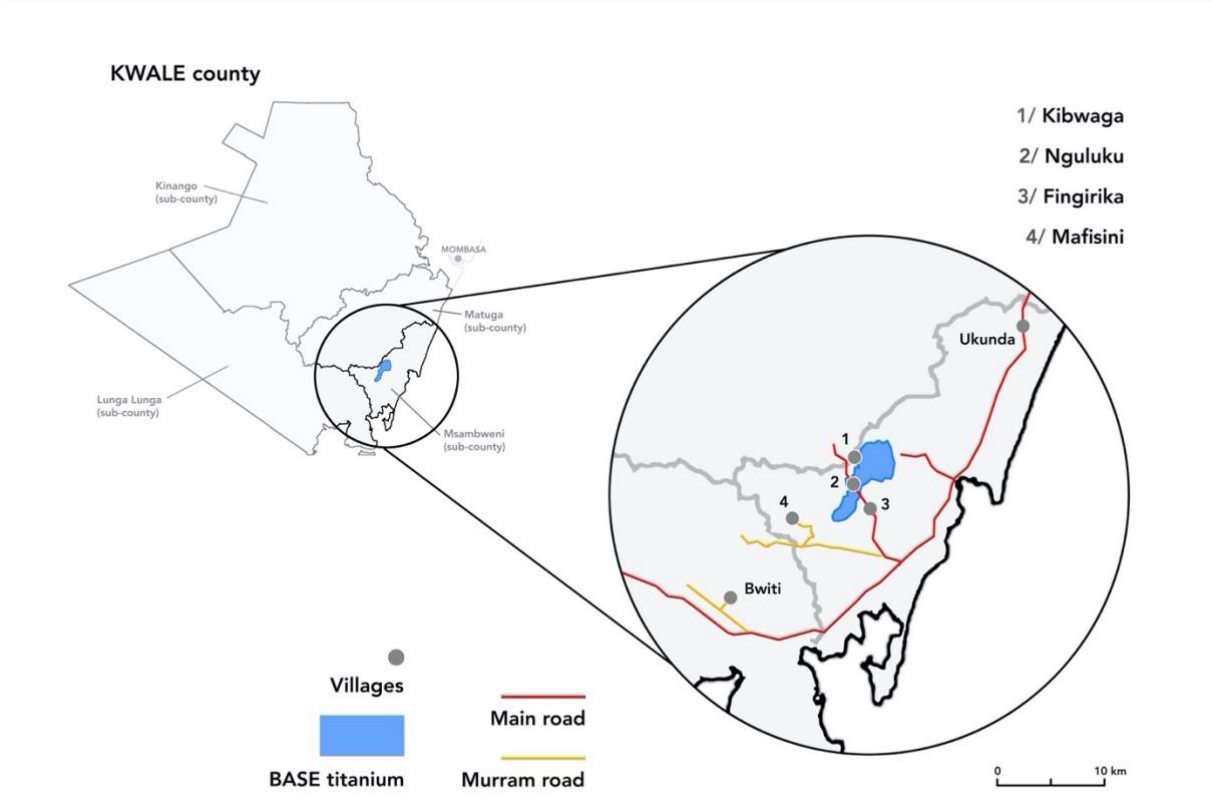


Figure 4. Villages affected by Base Titanium's mining activities in Msambweni and Lunga Lunga sub-counties, Kwale county

According to KNBS (2019), Kwale county's population is 866,820, consisting of 425,121 males, 441,681 females and 18 intersex persons. The number of households spread across Kwale county is 173,176, with an average household size of 5 persons (KNBS, 2019). The table below (*9*) presents the population census in sub-counties of Kwale county (e.g. male/female/intersex ratio).

County	Sub-county	*Male population*	*Female population*	*Intersex population*	*Total population*	*Number of households*	*Average household size*
Kwale		425,121	441,681	18	866,820	173,176	5
	Kinango	45,413	48,806	1	94220	16,043	6
	Lunga Lunga	97,174	101,245	4	198,423	37,366	5
	Msambweni	89,206	88,480	4	177,690	45,466	4
	Matuga	95,831	98,419	2	194,252	39,231	5
	Samburu-Kwale	97,497	104,731	7	202,235	35,070	6

Table 9. Population and housing census Kwale county and sub-counties (KNBS, 2019)

6.2 Unveiling local perspectives

Community development

While being in the field it quickly became apparent that disparities exist between what Base Titanium envisions through implementation of their community development programmes and plans, and how this is perceived on the ground.

Key pillar 1: Providing social infrastructure for the communities

A field visit to one of the affected villages in Kwale county - Bwiti village, host-resettlement site in the study area - revealed contradicting perceptions of community members in relation to Base Titanium's intention to provide social infrastructure. For instance, when asked about the role of Base Titanium in the Bwiti, the village chairman, who has been living in the village even before the arrival of Base Titanium in the area, responded positive: "*Base Titanium has helped the area develop, through several projects, such as the built of a primary school, a dispensary, a social hall and water bore holes*" (Bwiti village chairman, *personal communication*, 2020).

In contrast, some other community members of Bwiti village were rather sceptical about the effectiveness of these developments. From semi-structured in-depth interviews, it became clear there is consensus on the fact that Base Titanium's development intentions might be good, but "*only 2 or 3 out of every 100 projects as proposed are implemented successfully*" (Bwiti village community member *personal communication*, 2020). Of the projects that have been implemented, community members have a range of complaints. For example, the design and effectiveness of the Bwiti Social Hall, developed by Base Titanium. A community member reported that:

> *Base Titanium has built this social hall, but there is no electricity, and it is built in a very low standard. Also, there are no chairs to sit on. It is just a structure and they left it like this* (Bwiti village community member, *personal communication*, 2020).

Community members also claimed they were promised a lot of things, such as a health centre, good access and exits roads, tap water for every household, and a market centre. However, being on the ground revealed another perspective. Bwiti village has no health centre, but a dispensary. There is tap water, but not for every household and it is often not functioning optimally. Furthermore, relocated Bwiti village community members revealed that:

> *When we were told to be relocated to Bwiti, we were promised to get good and clean water. But when we arrived here, it was nothing like that. We were given a few litres of water and then Base Titanium stopped* (Bwiti village community members, *personal communication*, 2020).

Moreover, the access road to the village differentiates from how Base Titanium promotes it. It is in bad condition and during the rainy season, the heavy rainfall makes the road impassable. This particular road is however of great importance to community members living in Bwiti village. They are dependent on this road for getting their locally produced products on the market and because of this road being in a bad condition, they are often forced to sell locally. Having to sell products locally comes with several repercussions. For example, a mother of seven children, relocated to Bwiti village in the past, reports that: "*Whenever I have tomatoes, everyone else also has tomatoes. There is no market. Selling my products for a better price is impossible because I don't have enough money to get my products transported to markets further away"* (Bwiti village community member, *personal communication*, 2020). This means that community members are incapable to compete at and excluded from the broader market, which contributes to a degradation of livelihoods and further marginalisation.

Key pillar 2: Promoting livelihood upliftment and enhancement programmes

Regarding the livelihood upliftment and enhancement programmes, community members of affected villages in Kwale county are fairly positive. The livelihood projects implemented by Base Titanium have enabled a marginal number of farmers to enhance their skills and give their businesses a kick-start. For example, a poultry farmer in Kwale reports that "*Base Titanium took us for a training on chicken farming and taught us how to feed them, give them vaccines and water. Also, Base Titanium has provided me with a market for my chicken"* (Anastacia Mueni, poultry farmer in Kwale county, *'Livelihood Programme' documentary*, Base Titanium, 2020). The Community Affairs Manager at Base Titanium explains that the livelihood projects implemented by Base Titanium work with the skills and knowledge that the community already has. It provides training where needed, but first takes stock of what is already known and what skills can be enhanced. For example, a lot of local farmers already have the skills, but lack resources. Through the PAVI cooperative set up in collaboration between Base Titanium

and local farmers, "*farmers have the ability to access resources like tractors from the government that till the land, and get fertilizers and pesticides courtesy of the cooperative*" (Mahmoud Masemo, farmer and chairperson of PAVI cooperative, *'Livelihood Programme' documentary*, Base Titanium, 2020).

Key pillar 3: Improving community health

From conversations with affected local community members, it has become clear that Base Titanium has contributed positively to the health of a large share of Kwale county's population through implementation of their health projects and provision of – financial - resources. There is a reduction in home deliveries, cases of diarrhea and other infectious diseases have reduced, and two villages have been able to achieve Open Defecation Free (ODF) status. *"In the past people hardly used toilets, and this led to a rise in many infectious diseases due to poor sanitation. If people use forests instead of toilets, it is very easy to contract diseases especially cholera and diarrhea*" (Philip Kioko Muindi, Vumbu village, *'Community Health Programmes' documentary*, Base Titanium, 2020). Base Titanium has helped to create awareness and spread knowledge among communities about health issues arising because of poor sanitation and helped achieving ODF status for at least two villages in Kwale county. Before Base Titanium arrived "*there was not even one village that was ODF certified*" (Emmanuel Kioli, *'Community Health Programmes' documentary*, Base Titanium, 2020). Home deliveries have reduced because of an increase in trained traditional birth attendants linked up to healthcare centres, "*so that they can explain to the expectant mothers the dangers of home deliveries*" (Emmanuel Kioli, *'Community Health Programmes' documentary*, Base Titanium, 2020). Moreover, Base Titanium has increased accessibility of health care services among the local communities of Kwale county. "*Base Titanium supports us during our outreaches. We can go up to Vumbu village (from Magaoini village) and offer services to the sick. We also offer mosquito nets that have been provided by Base Titanium"* (Clinical Officer Magaoni Health Centre, *'Community Health Programmes' documentary*, Base Titanium 2020).

The overall view of Base Titanium's implementation of health projects is positive among local communities. "*Changes have been seen because people now have good health and nutrition*" (Philip Kioko Muindi, Community health volunteer, Vumbu village, *'Community Health Programmes' documentary*, Base Titanium, 2020). However, according to research carried out by Kenya Land Alliance (KLA) in 2018, community members of Kibwaga village encountered a rise in health issues due to their close proximity to the Mukurumudzi Dam developed by Base Titanium. KLA argues that "*the dam serves as a breeding zone for mosquitoes. This has had consequences for community members, with increasing numbers of people contracting diseases such as malaria, which are transmitted by mosquitoes*" (2018).

Key pillar 4: Providing educational opportunities

Data gathered from secondary data sources unveiled a common view among the local community as being enthusiastic about scholarship programmes and other educational opportunities provided by Base Titanium. For example, in a documentary produced and promoted by Base Titanium on its website, a student proudly elaborates on the scholarship provided by Base Titanium:

> *Had I not received this scholarship, my parents would not have been able to pay for my school fees. I would have been sent home every now and then, which could have led to early marriage or pregnancy. I am now happy because I can focus on learning without fear of being sent home* (Mwanamisi Salim Kinugii, *'Education' documentary*, Base Titanium, 2020).

The documentary further encloses a narrative of how a mother has been empowered to focus on taking care of her family through her business, because Base Titanium provided monetary funding for her kids to attend school:

> *I can now invest the money I would have used for school fees into the businesses so that I can take care of the needs of my family and home. My life and that of my family has now become better"* (Pili Hamadi Nyanje, *'Education' documentary*, Base Titanium, 2020).

According to a community life skills superintendent at Base Titanium, it is expected Kwale county will see great benefits in the years to come. Students that have been sponsored in the past are expected to have jobs and help their communities after completion of their studies.

On the ground, a different perspective unravelled. When asked how local citizens perceived the provision of educational opportunities by Base Titanium, some of the respondents felt they were not given an equal opportunity to be eligible for scholarships provided by Base Titanium. "*Last year, only one person from this area was given a scholarship*" (Bwiti village community member, *personal communication*, 2020). In an interview with a community liaison officer employed by Base Titanium conducted while being in the field the following statement was made:

> *You can't benefit everyone. There are those who get a chance and those who don't*. Every *organization or company has got its budget, and if it fits within the budget, it will get done. But in essence, it is a budget matter* (*personal communication*, 2020).

Employment: 'fencing system'

As outlined before, Base Titanium currently employs 748 people (68%) from Kwale county, 330 sourced from all across Kenya (30%) and 22 internationally recruited people. This means that 98% of Base Titanium's employees are Kenyan citizens. This reinforces claims that Base Titanium aims to prioritise (employment) opportunities for the local community. As the community liaison officer at Base Titanium puts it: "*we have a policy in Kenya that whenever there is an investment like this, you can't bring only your own people. You must consider local people and you have to give contracts to local people*" (*personal communication*, 2020). According to KNBS (2019), the dependency ratio of Kenya is 71.3, this means that the working age group of Kenya consists of 58.4% (71.3/171.3*100=41.6% non-working group; 58.4% the working group) of the total population. Kwale county's population consists of 425.121 citizens. 58.4% of 425.121 comes down to 248.271 people that fall in the working age group in Kwale county. With 748 of them working at Base Titanium, this means that 0.3% of Kwale county's working age population is employed Base Titanium. Even though this share is low in absolute terms, at the micro-level it has impacted livelihoods to a large extent.

As can be understood from the digital content on Base Titanium's website, a range of employees highlight how their lives have been positively impacted. For example, Emmanuel Mututa, employed at Base Titanium as a geological technician, states that: "*working for Base Titanium has positively impacted my life, because I can now take care of my family since I have a dependable salary*" (Base Titanium, '*Base people' documentary*, 2020). Other examples from employees whose employment status provided by Base Titanium has uplifted their livelihoods relate to (financial) empowerment, increased self-reliance and economic and financial stability. The acting community relations manager at Base Titanium reported he has been empowered through employment, "*by getting a steady flow of cash and also being able to educate my children and cater for their medication*" (Base Titanium, *'Base people' documentary*, 2020). Furthermore, a construction employee explains the positive outcome of being employed by Base Titanium as follows: "*before, people struggled with paying rent. Now there is a cash flow consistency within the local community*" (Base Titanium, *'Base people' documentary,* 2020). Furthermore, multiple employees highlight the acquirement of skills as being the main driver behind their livelihood upliftment. According to employees, the mining company has given them the opportunity to look beyond their career at Base Titanium. It has provided a future perspective by enabling them to acquire skills that are useful for multiple positions not only at Base Titanium, but in the global mining industry in general. A heavy mobile equipment mechanic at Base Titanium reinforces this by claiming he can work anywhere in the world because of the skills he acquired from the 'Base experience' (Base Titanium, *'Base people' documentary,* 2020). Besides a rise in self-reliance, having a dependable salary and acquirement of skills that could be useful even beyond Base Titanium, employees

also highlight the positive trickle-down effect Base Titanium can potentially have on the livelihoods of the communities they are part of. Joseph Ngunda Kuti, a construction employee at Base Titanium reports: "*money earned through employment at Base Titanium often remains within the local economy*", continuing: "*people tend to invest their money in the local community. You'll find many have built nice houses and have taken their children to school*" (*'Local content' documentary*, Base Titanium, 2020).

Employment opportunities that have become available to the local community in Kwale county is often highlighted by Base Titanium. Statements are made that first priority is given to the local community members, especially individuals who have been personally affected. Yet, for the local community, the prospect of company employment is all but lauded. Interviews with community members from Bwiti village revealed that: "*the number of people employed by Base Titanium from this area is less than ten"* (Bwiti village community members, *personal communication*, 2020). It soon became clear that in relation to matters of employment, there is a need to 'put things in perspective'. With approximately 190 households in Bwiti affected by Base Titanium – as identified by coordinators from local CSOs and shown in table 8 –, and average household size being 5 (KNBS, 2019), this sums up to 950 people. As shown before, Kenya's working age group is 58.4% of its population. At community-level this means 58.4% of 950 people, which comes down to 555 people that fall in the working age group in Bwiti village. To follow up on Joyce Chaka's statement that 'in Bwiti less than ten people are employed by Base Titanium', this means that less than 1.8% of the working age community members is employed by Base Titanium. Based on these numbers, it is argued that even though the percentage of people recruited from the 'local community' in relation to the total number of employees at Base Titanium is high (68%), this is not reflected at the actual community-level. Another narrative provided by a community member from the same village marks the risk that is associated with being employed by a mining company during uncertain times, referring to the fact that the mine is nearing its closure phase. She reports: "*my husband is employed by Base Titanium. He works in the mining department. We are hoping that the mining life continues. If the mining comes to an end, then my husband will not have a job anymore*" (Bwiti village community member, *personal communication*, 2020). Employment by Base Titanium might lead to short-term positive outcomes, but contributes to unsustainable livelihoods in the long-term, because of the expected mine life ending in the near future.

Environmental impact

In order to provide a complete overview of the environmental impacts associated with Base Titanium's mining activities, it would have been interesting to have access to the EMP live documents Base Titanium says to continually review and publish. However, an extensive online research resulted in the observation that those documents are not open for public review and scrutiny. Fortunately, there has

been a considerable amount of research conducted in the past, related to the environmental impacts experienced by local communities. These studies highlight concerns about the level of noise and dust that is being generated by the mining operation*, "which have become a health hazard on the local population, with concerns being raised in relation to eye and skin infections as well as dust-based ailments such as respiratory infections*" (Hakijamii, 2017, p. 44). Base Titanium has however refuted these concerns, indicating that these statements are purely fictitious as mining has been transitioned to a hydraulic method which eliminates both dust and noise (Base Titanium, *response to Hakijamii's draft* report, 2019 p.20). Furthermore, from previous research it has been argued that:

> *The mining operation and damming of the rivers by Base Titanium has changed the micro-climate in the host-community, with the result that farms have become less productive, coconut and mango trees produce lesser fruits and the fish population in the rivers have diminished* (Hakijamii, 2017, p. 44).

This statement is also refuted by Base Titanium, arguing that they have dammed the river, but continuously discharges an Environmental Flow Release that ensures that downstream ecological functioning is maintained (Base Titanium, *response to Hakijamii's draft* report, 2019, p. 20). Whilst this is one word against the other, evidence from being in the field reinforces claims about noise and dust as experienced by local communities. Mostly three of the identified affected villages are environmentally impacted by Base Titanium's mining operations (*see table* 8). Especially Kibwaga village, consisting of relocated community members and neighbouring Base Titanium. According to a coordinator from local CSO Human Development Agenda (HUDA), "*community members from Kibwaga village have been complaining about dust, noise, air pollution and water pollution*" (*personal communication*, 2020).

Mining-Induced Displacement and Resettlement (MIDR)

Dichotomy of thoughts

Simultaneously with the arrival of Base Titanium, came (involuntary) displacement and resettlement of a large share of Kwale county's indigenous communities. In order for mining to take place, displacement of populations on the land in which the mineral resource exists is inevitable. Ever since the inception of the mining project, the local community has been in conflict with the government and with the extractive company over the Kwale project. While indigenous communities hold the view that they are the 'true' owners of the contested land, the Kenyan Government considers itself as the real owner through the power of eminent domain. As explained in *chapter 4.3,* the Constitution of Kenya 2010

classifies "*all minerals and mineral oils as defined by law*" as public land (Article 62 (1) (f)), and public land is vested in an held by the national government in trust for the people of Kenya (Article 62 (3)). Even though, the local communities are convinced that they are the real owners of the land, and as such, no one, not even the government, has the right to dispossess them of their land (Abuya, 2016). Eminent domain has led to (forceful) acquisition of land by the national government from indigenous communities in order for Base Titanium to mine.

Land-ownership

Land in Kenya is a contested issue. As in most of Africa, most of Kenya is unregistered community land. Community land means land acquired, possessed, and transferred under community-based regimes. In Africa this mainly means customary tenure. Customary tenure has not been acknowledged for a very long time in Kenya. With the arrival of the new Constitution of Kenya in 2010, a discernible goal was to acknowledge these customary laws and end the century-long legal status as community land as un-owned and of lesser status than public or private property. The Community Land Act (CLA), enacted in 2016, gives effect to the provision on community land from the Constitution. The acknowledgement of customary laws has had positive repercussions for indigenous communities in relation to issues of land-ownership. For example, the majority of citizens in Kwale county hold no legal title to their ancestral land. In the eyes of these people, the fact that they have been living on the land and been the allodial owners of the land for centuries, should be enough evidence to make them the real owners. The enactment of the Community Land Act in 2016 has resulted in providing them with the ability to claim their ancestral land, even without an official title deed. Although it has positively changed at the community-level, some gaps still exist. For instance, it soon became clear that on the ground men have not fully accepted nor appreciated that land can also be owned or inherited by a woman. There is a need to discuss land-ownership at the household level.

On the ground

Interviews with relevant local stakeholders in the field, evidenced that at least 950 people *(190 households*5 (average household size) = 950)*, have been relocated in the past. A selection of these people has been interviewed in order to set out their perspective in relation to issues arising because of mining-induced displacement and resettlement. Especially those people relocated to host-resettlement site Bwiti village before the 2010 Constitution have a strong opinion. Their voice is represented by local CSOs such as KHRN, KWACODEP and HUDA. According to both a coordinator from HUDA as well as a coordinator from KHRN, those people who have been relocated to Bwiti village used to live on fertile and productive land. Even when someone was not employed, they had coconuts,

mangos, oranges and cassava. They were however resettled on distant land in a very swamp area. "*Bwiti is like abandoned land"* (KHRN, *personal* communication, 2020), and "*when it rains, the whole area is mud and water"* (HUDA, *personal communication*, 2020).

In addition, there is one particular issue that comes back throughout each interview with local stakeholders. Both the mining company and the local community agree that compensation for ancestral land has been unfair in the past. When Base Titanium came in, affected community members were offered a compensational package as a way of mitigating the impact of the displacement. Claims often made in the literature that there is no commensurate for compensation for communities that have been displaced from their traditional homes, have been reinforced while being on the ground. "*Compensation is not done fairly. What the communities is given is not worth the property or the assets, the attachments*" (geomatics and geospatial engineer from KLA, *personal communication*, 2020). A community liaison officer at Base Titanium adds "*those people who had to relocate to Bwiti, the prices they got for their plots were not high. They were just given a certain amount – without negotiation*" (*personal communication*, 2020). According to Base Titanium, standard procedure in setting the amount for compensation is to collaborate with both the Kenya Forest Service (KFS), who determine the prices of trees on a particular land, and the department of agriculture, who are the ones that come up with a package for crops compensation. However, when Base Titanium came in, they engaged an independent consultant who did the assessments on behalf of the company. "*It was very biased and favouring Base Titanium"* (KWACODEP, *personal communication*, 2020). Moreover, according to a coordinator at KHRN, the relocations were not in favour of the community. Especially women were at disadvantage. "*During the relocation, the males got involved. Women were not given the opportunity to participate effectively in decision-making*" (KHRN, *personal communication*, 2020). Furthermore:

> *The way our land laws were designed, was that the man was the head of the house and owns everything on the land. Although currently we are being governed by a better Constitution, where women and children are now supposed to be consulted, there are still gaps. There are still people that don't know that land cannot be sold without informing the women and children* (KHRN, *personal communication*, 2020).

Other consequences of mining-induced displacement and resettlement as discussed in the literature, have also been reflected at community-level in the study area. Mining-induced displacement and resettlement phenomena do not represent the sole physical change of residence. Besides the loss of homes, community members in Kwale county have encountered a degradation of livelihood, marginalisation, struggle for resources, access to land and loss of social capital. The consequences of mining-induced displacement are intensely complex and there is a need to have specific standards

related to resettlement that systematically details and consolidates resettlement and compensation principles. Kenya does not have these yet. In the case of Base Titanium in Kwale county, there has been a lack of stakeholder participation. Community members revealed that the mining company has failed to communicate with the public. The community is often left uniformed about decisions that greatly impact their lives and about their rights. Without proper communication and information, the community will always feel marginalized. Therefore, local organisations take up the responsibility to represent the community and provide assistance where needed. Among other things, they create awareness, by explaining the law and telling the communities what their rights are. Also, they conduct sensitization regarding land matters. They have also been responsible for communicating and lobbying to Base Titanium on behalf of the community.

Chapter 7. It's not over when it's over

This chapter assesses Base Titanium's vision and plans and programmes in place regarding the pending mine closure in the near future. Also, it presents how Base Titanium's expected departure is perceived on the ground. Finally, it takes into account lessons learned from mine closure across the globe, in order to say something about the expected mine closure impact on the local community of Kwale county.

7.1 Rehabilitation and restoration

With the end of the mine life nearing, Base Titanium prepares for its expected departure. One way how this plays out on the ground is through rehabilitation and restoration programmes in Base's environmental management. Rehabilitation and restoration are also described by Base as two key processes necessary to minimise and mitigate impacts of mining operations. Rehabilitation is the process of returning land disturbed by mining activities "*to a degree of its former state*" (Base Titanium, 2020). Restoration is the process of ecological recovery of a site to a natural landscape and habitat that provides ecosystem services capable of supporting human, wildlife, and plant communities. Rehabilitation activities are ongoing throughout all stages of the Kwale Project. Among others, they include the establishment of the biodiversity corridor, a wetland restoration programme and rehabilitation of the Mukurumudzi Dam embankment and other areas impacted during the Kwale Project's construction. For instance, an environment programmes superintendent at Base Titanium explains that in order to ensure the improvement and restoration of the environment to its previous state before the mining, nurturing seedlings of indigenous trees found in the area have been collected. The seedlings are then planted in those areas that have been damaged once mining is complete. This process already started during the construction phase.

Another way in which Base Titanium's prepares for its expected departure is through the facilitation of a shift from a mining economy to an agricultural one. In 2014, Base Titanium entered into a partnership with an international NGO, named 'Business for Development'. According to Base Titanium's External Affairs Manager: "*this NGO came and brought experts to do soil analysis. This soil analysis led to the discovery that cotton has grown well in the region"* (*personal communication*, 2020). Cotton On Group, an Australian retail multinational, was brought on board as an offtake partner for the cotton. The collaboration between Business for Development, Cotton On group and Base Titanium has led to the establishment of the Kwale Cotton Project. The Kwale Cotton Project is a smallholder farmer livelihood programme, aiming to ensure community stability and the emergence of non-mine dependent economic opportunities. To compliment the cotton crop, the by-product of cotton is being made into cotton seed cake, which is used in feed for chicken. This initiative is said to be primarily driven by women. However, while Base Titanium's objective has been to include 10,000 smallholder farmers

in Kwale county by 2020, there are 2200 farmers involved and 4000 acres to plant cotton on, as of today (External Affairs Manager Base Titanium, *personal communication*, 2020).

7.2 Exploration

"*Base Titanium's Kwale mine has just over three years mine life remaining and by mid 2023, all currently identified deposits of minerals have been extracted and mining operations will cease*" (Simon Wall, General Manager for External Affairs, Base Titanium, 2020). Being in the field highlighted the current focus on exploration rather than rehabilitating and restoring. In an effort to extend the Kwale mine's operational life, Base Titanium is drastically seeking to identify additional mineral deposits that may lie in proximity to the existing operation. The process of identifying (additional) mineral deposits falls originally under the first stage of a mine life-cycle. Processes on the ground evidenced that instead of placing focus on what needs to be done before leaving Kwale, Base Titanium is re-starting the first stage of the mine life-cycle. Base Titanium is free to undertake exploration activities as long as it happens within their Prospecting Licenses. From 2016 onwards, Base Titanium has completed numerous exploration activities across Kwale county.

According to a chairman of a local CSO, "*all over Kwale county is blessed with minerals"* (KYGC*, personal communication*, 2020). To date, six new villages in Kwale county have been earmarked for exploration activities. These villages can be found in table 8. A coordinator from another local CSO argues that Base Titanium has found enough minerals that can take them for three or four years longer (HUDA, *personal communication*, 2020). Surveys have been conducted and it is known that minerals are there. "*That is why they are interested in those villages, they have to do the mining in those areas, otherwise they will have to close the mine in 2023*" (Coordinator at HUDA, *personal communication*, 2020). There are however several challenges that occur. For example, some communities within those villages earmarked for exploration are resisting. "*They don't allow for exploration to be conducted, because they fear to lose their lands*" (Chairman at KYGC, *personal communication*, 2020). Moreover, what is currently happening on the ground is the following. Some community members of those villages earmarked for exploration activities, are not giving consent to the mining company to conduct exploration, because they are afraid they will end up being displaced, like the people in Bwiti village. It is possible for these community members to resist and reject, but the government has the final authority to conduct a 'forceful acquisition'. The Constitution (2010) allows that the government can take that land by force – as long as the resources are there. Force is hereby defined as: "*they won't take land by force, but the police will protect those who have accepted the process to take place*" (Coordinator at HUDA, *personal communication*, 2020), and therefore discard those who have rejected.

7.3 Unveiling local perspectives

According to a community liaison officer at Base Titanium, the community is and has to be engaged from the onset, even before exploration activities take place (*personal communication*, 2020). While this is supported through interviews with affected community members, saying "*we come together with the government and the mining community through formed community development committees and we can bring proposals to meetings, so we can share and decide which project we would like to get done*" (Bwiti village community member, *personal communication*, 2020), this mainly relates to projects initiated and implemented throughout the operational phase of the mine. Moreover, there is a lack of inclusion of women. The gender gap is clearly visible when taking a closer look at those community development committees. For example, the community development committee from Mafisini community comprises of eleven members. According to a key informant from local organisation KWACODEP, "*only three out of eleven were women*" (*personal communication*, 2020). Currently, this CSO aims to form women led movements, so that *"whenever we exit from a particular project, women can then 'jump' for their rights and create rightful spaces through those women led movements*" (*personal communication*, 2020).

One of the most striking findings is that a substantial part of affected community members is not aware of the processes taking place in relation to Base's expected departure in the near future. This lack of public participation is evidenced in interviews with key informants and affected community members. For instance, a community member of Bwiti village reports: "*there is no information given about what will happen when the mine life comes to an end. I don't know if we can go back to our original land*" (Bwiti village community member, *personal communication*, 2020). Being in the field revealed that in Kenya, whenever a mining company exits, the land they operated on will automatically become government land. With the Community Land Act enacted in 2016, it has been made possible to transfer government land to community land. This means that the land is owned by communities from Kwale county. "*It belongs to the community as a whole, not to you as an individual*" (coordinator from HUDA, *personal communication*, 2020), and the county government decides what they really want to do with that land. Furthermore, there is uncertainty among community members employed by Base Titanium concerning their current employment. "*If the mining comes to an end, then my husband will not have a job anymore*" (Bwiti village community member, *personal communication*, 2020). Not knowing what awaits in the future creates high levels of uncertainty among community members and contributes to anxiety and stress (Rao & Pathak, 2005).

Besides a lack of community engagement regarding Base Titanium's expected departure in the near future, local organisations are also 'left in the dark' and no one really knows what will happen exactly. According to a coordinator from KLA:

> *Base Titanium makes sure that it is responsible at all stages. From the point of entry, it takes proper cognisance of the community and during its mine life, it also takes good care of the community. When it exits, at the end of the mine life, they do what is called a responsible exit. That when they exit, they try as much as possible to restore the land to the closest that they found it, or at least better. That is a requirement* (*personal communication*, 2020).

This reinforces what is stated in the Mining Act, 2016: "*no prospecting license, retention license or mining license will be granted to an applicant, unless the applicant has submitted a site mitigation and rehabilitation or mine closure plans for approval*" (Article 180). Base Titanium complies to the requirement in this Act to have a site mitigation and rehabilitation plan in place, which is clearly outlined on its official website. It is however unclear what Base Titanium's mine closure plan consists of.

In order to provide for a complete overview, views from other relevant stakeholders in the field (e.g. local CSOs) regarding Base Titanium's expected departure are outlined. According to a key informant from HUDA:

> M*aybe what exists are plans, but not soft exits. Base tries to come up with an exit strategy, those strategies are there*, but f*rom the inside story, I have been told chances that exploration processes will continue are very high* (*personal communication*, 2020).

This is confirmed by a key informant from KHRN, who states that Base Titanium is doing everything they can to extent their mining license. A coordinator from KWACODEP, adds that the discussions on Base Titanium's closure plans are not clear and it is unclear what will happen to the land they are mining on. Furthermore, "*there is a crucial need for stakeholders to have meetings and discuss what will happen once Base exits*" (KWACODEP, *personal communication*, 2020). The gazettement of new mining regulations while being in the field, contributes positively to this need. On the 28th of February 2020, the Kenya Gazette – an official publication of the government of the Republic of Kenya – published new mining regulations. These new mining regulations resulted in the identification of three Community Development Agreement (CDA) Committees. The CDA Committees were established between: Lunga Lunga Sub-County Community and Mrima Bwiti Resettlement Scheme and Base Titanium Limited; Msambweni Sub-County Community and Base Titanium Limited, and; Likoni Sub-County Community and Base Titanium Limited. As stated in the Mining Act (2016), a Community Development Agreement is an agreement entered into between a large-scale mining license holder, national government and the host-community. CDAs can play a valuable role in managing the expectations of a broad range of stakeholders including, for example, the mining company, the impacted communities, local and national government, and non-governmental organizations (Kenya Ministry of Mining and Petroleum, 2016).

7.4 Mine closure around the world: lessons learned

Over the next decade many mines across the globe face closure, making it an increasing priority for communities, government and the industry in general. However, globally, there is a lack of available data on abandoned or closed mines. Whereas data on operating mines around the world is fairly easy to retrieve, "*data on mine closure is not in the public domain*" (Watson & Olalde, 2019, p. 642). Old mines are not necessarily reported and when they do exist, inventories are often imprecise, sometimes intentionally so (Hufty, 2019). Therefore, what happens when a mine closes is less well-known. There are however numerous cases across the globe, in which a mine has been closed in the past, and the body of literature on mine closure has been slowly emerging over the past decade. Scholars have attempted to grasp the challenges that mine closure bring by conducting research on recent mine closures, outlining ways to optimise mine closure outcomes and present lessons learned (Laurence, 2002; McCullough, 2016). It is interesting to look at this literature concerning previous mine closures, since it provides insights in how mining companies and other relevant stakeholders (e.g. national government) have tackled mine closure in the past and allows to take into account lessons learned. This section therefore outlines several interesting cases in which a mine has been closed in the past. One of which is the Sullivan Mine in Canada, often referred to as a 'success story' when it comes to mine closure. Other cases being the abandoned mines in Namibia and the Raniganj coalfields in India, presenting the 'scars of the past' of past mine closure. The one thing these cases have in common is the fact they all have had to deal with mine downscaling or closure. At other fronts, such as how they tackled mine closure, they differ substantially.

After operating for nearly 100 years, the Sullivan Mine in Kimberley, Canada, is now regarded an example of a successful mine closure (Teck Resources Limited, 2016). Detailed mine closure planning already began in 1990 as it became clear that reserves would be depleted by 2001. What makes this case interesting and what strikes out the most is the collaboration between the mining company – Teck Resources Limited – and the local community. Surrounding and affected communities have been engaged from the start to create strategies that would mitigate the (economic) impact of the pending closure. Also, the City of Kimberley actively participated in developing the mine's 'Decommissioning and Reclamation Plan'. The plan included, among others, a transition from a town whose livelihood was dependent on the extraction and processing of minerals to a self-reliant four-season resort community. Teck-owned lands were turned over to the City to help them establish the tourism and recreation destination and the City of Kimberly began to rebrand itself. The incorporation of both the community and the local municipality allowed for an exploration of options to diversify the local economy. Soon, Kimberley's enormous recreational potential was recognized and ways to attract visitors were explored. The case of the Sullivan Mine shows the importance of active and sustained participation of local

political leaders, the mining company and the community. Another lesson learned from this case is the significance of requiring mining companies to incorporate an integrated mine closure plan through national legislation. In Canada, mining companies are required to prepare closure plans in detail during the operation of the mine. These plans are reviewed and updated routinely, usually after every three to five years. Moreover, Canadian legislation requires mining companies to specifically set aside funds to be used for reclamation following mine closure.

In contrast, Namibia has no solid piece of legislation primarily dealing with mine closure and rehabilitation. It is not clearly defined by whom and how the rehabilitation should be funded and while regulating mining activity in Namibia is primarily the responsibility of the state, there is no single department or ministry that regulates the sector. In Namibia, there are over 250 abandoned mining sites where no rehabilitation has taken place after the mining companies ceased their operations. Abandoned mines are "*mine sites that usually have not been closed down in a planned and orderly fashion*" (Salom & Kivinen, 2019, p. 4). The owner of the site cannot be traced, or the owner is financially unable or unwilling to carry out clean up after the cessation of production. Beside limited mine closure regulations in national legislation, a lack of cooperation between the government, the scientific community, and industry sectors has been one crucial constraint to successfully planning and implementing mine closure and rehabilitation in the case of Namibia. While information on closed and abandoned mines in Namibia is very scarce, existing research has enabled a list of problems recorded so far, including: "*soil pollution, surface and groundwater pollution, air pollution via wind-blown dust from the tailings and waste dumps, tailings eroded to the river, instable and unsecured structures, dangerous open workings and chemicals, and aesthetic pollution caused by abandoned buildings, machinery, waste, tailing and waste dumps*" (Salom & Kivinen, 2019, p. 5). This reinforces claims often made in the literature that every stage of mining is associated with specific impacts, which often remain significant after closure (e.g. Salom & Kivinen, 2019). The impacts after mine closure are however not limited to environmental issues solely. The case of the Raniganj Coalfields in India highlights some of the socio-economic problems faced by the area after mine closure, such as anxiety and stress among affected community members (Rao & Pathak, 2005). During its active life, a mine often provides direct or indirect employment to its neighbouring communities. The community is also provided with social, medical, educational and transport facilitation as well as welfare amenities. These provisions often cease to exist after mine closure (Rao & Pathak, 2005).

While every mine site is essentially different, there are some general lessons that can be learned. One of the prime failings in previous mine closure relates to a lack of incorporation of mine closure regulations in national legislation. Another error relates to the failure to engage relevant stakeholders - such as the host-community - in a systematic manner from the onset. McCullough (2016) elaborates on this, arguing that a lack of engagement of relevant stakeholders often results in mine

closure procrastination. Moreover, he states that it "*often arises from thinking mine closure is an activity at end of life-of-mine rather than as a process that begins with the initial mine plan and then regularly continuous throughout mine life*" (2016, p. 325). Another error in previous mine closures has been the failure to account for the long temporal scales that mine closure must accommodate, often due to closure views being short-term in order to meet immediate regulatory and operational planning needs rather than focused on the future (McCullough, 2016).

Chapter 8. Discussion

The purpose of this thesis was to contribute to a better understanding of the long-term impacts of mining on local communities. This undertaking was conducted in Kwale county, Kenya, where Base Titanium has been conducting mining activities since 2013 and is expected to close its Kwale mine in the near future. The adoption of a micro perspective and gender lens allowed for a more holistic understanding of the long-term impacts of mining as experienced by the local host-community of Kwale county. The goal of this chapter is to interpret the findings and discuss its implications in relation to assumptions, expectations and the relevant academic literature. To achieve this objective, the implications of the main results of each sub-question as divided in empirical chapters 5, 6 and 7 will be elaborated on separately.

8.1 Characteristics of titanium mining in Kwale county, Kenya

The assumption that mining activities can have major consequences for local development in host-communities has been evidenced through data gathered in the study area. Also, the claim often made in the literature that these consequences do not all have to be negative and can also create new opportunities is visible on the ground (Bainton & Holcombe, 2018). During the operational phase of the Kwale mine, Base Titanium has put considerable effort in liaising with the host-community. In relation to local development, Base Titanium has spent a substantial amount of money on the built of schools, dispensaries and, among other, exits and access roads. Base Titanium has implemented farming projects under the banner of providing alternative livelihood strategies and contributed to the creation of opportunities for local community members to enhance and strengthen their (farming) skills. Moreover, through the establishment of the PAVI cooperative, better access to quality inputs (e.g. seeds, fertiliser, crop protection), access to training, credit, machinery, technical guidance, and logistics and marketing support has been provided. Furthermore, Base Titanium has contributed to improved health and nutrition of a large share of Kwale county's population through implementation of health projects. Also, Base Titanium has enabled education and employment opportunities through the provision of scholarships and its 'fencing system'.

8.2 In retrospect: the local impacts of titanium mining in Kwale county, Kenya

Nevertheless, learning about the long-term impacts of mining on the local community of Kwale county, taught that disparities exist between what Base Titanium envisions and the impact experienced on the ground. The analysis of informal conversations, interviews with relevant stakeholders (e.g. coordinators from local CSOs), have brought to the fore a lack of public participation. For example, affected community members reported to have complaints concerning the execution of projects implemented

by Base Titanium, and report to have a limited say in which project will be developed when and where. The reasoning behind this lack of participation from host-community members can be explained by the fact that gaining and/or maintaining a social license to operate (SLO) has for a long time not been mandated by law. As defined in this research theoretical framework, an SLO is set between a mining company and the host-community and exists when a mining project is seen as having the broad, ongoing approval and acceptance of society to conduct its activities. In Kenya, gaining and/or maintaining a SLO has only been a requirement by law, since the gazettement of additional mining relations on the 28th of February 2020 (Mining Act, 2016). Therefore, the statement is refuted that local communities are a key arbiter in the process of gaining and/or maintaining a social license to operate (SLO), by virtue of their proximity to projects, sensitivity to effects, and ability to affect project outcomes (Prno & Slocombe, 2012). More so, Base Titanium has inadvertently contributed to the creation of a dependency culture. As discussed in literature on mining and development:

> *A failure to interact and consult with communities results in community development projects that communities do not require and/or are perceived as 'gifts' from outsiders, which the community does not feel that it collectively owns. Communities begin to rely on the company to support and maintain the company's assets* (Jenkins & Obara, 2006, p. 15).

The projects implemented by Base Titanium are seen by the local community as recompense for social and environmental damage. As discussed by Jenkins and Obara (2006), "*this results in the attitude that as the company initially provided the resource they are responsible should anything go wrong*" (p. 8).

Aside from the impact as experienced among community members relating to the implementation of Base Titanium's CSR strategy, adverse environmental impacts (e.g. dust, noise and water pollution), unequal opportunities in receiving scholarships or getting employed by Base are also reported. Whereas Base Titanium argues they review and update their environmental management documents regularly, these are not open for public scrutiny. Moreover, in research conducted by KLA (2018), Base Titanium refutes claims made that they contribute to air and/or water pollution, and that the communities who have had to deal with these issues in the past have been relocated temporarily to other locations. It is however unknown what the factual truth is when it comes to environmental impact because of a lack of monitoring, evaluating, but most importantly, documentation. Concerning Base Titanium's employment fencing system, results have indicated that there is a need to put things in perspective. Even though Base Titanium has generated employment for Kwale county as a whole, this is less visible at the micro-level. For the affected local community, the prospect of company employment is all but lauded (e.g. because of a lack of appropriate skills). The number of affected community members employed by Base Titanium is approximately less than 1.8 percent, whereas Base Titanium

promotes the fencing system as being effective based on the 68 per cent of its employees sourced from Kwale county. Moreover, those people employed by Base Titanium that are sourced from affected communities, are up for a period of uncertainty due to the expected ending of the Kwale mine. Besides the view of Base Titanium as employment generator for the local host-community, being employed by Base Titanium also contributes to the dependency mentality as aforementioned.

Another striking finding relates to the process of mining-induced displacement and resettlement because of relocation of indigenous communities in order to create space for mineral exploration and development. Analysis of data gathered in the field revealed consensus among community members about being disproportionately compensated for their ancestral land.

When Base Titanium was given the mining license and started mining, it was simple for them but not for the community. Some of the community members were compensated fairly, and some were not fairly compensated. Fairly meaning, what they were given was not worth the property or the assets, the attachments. Especially in rural areas, you will find for instance schools. The community has contributed and built a school or a church or market, and then the mining company comes and destroys it all. Even if you are given land elsewhere, where is the school? Where is your well you used to take water from? Where are your mango trees, you used to have an income from? The coconuts? (KLA, *personal communication*, 2020)

Furthermore, it became clear that community members have had to deal with multiple challenges to sustain their livelihoods. For example, a selection of affected community members highlights the exclusion from the (broader) market due to relocation to distant land, resulting in a degradation and loss of livelihoods as well as further marginalisation. This research has once more evidenced that mining-induced displacement and resettlement phenomena do not represent the sole physical change of residence, as well as that during mining-induced displacement and resettlement processes often little attention is given to the impacts on project-affected peoples (PAP) livelihood (Owen & Kemp, 2015). Also, claims made in the literature about mineral exploration and large-scale land-based investments in the mining sector often resulting in disputes over land ownership, land access and land-use (Huggins et al., 2017), are confirmed on the ground. For example, some of the community members provided narratives in which they explain how they have experienced the relocation process initiated by Base Titanium. According to one of the relocated community members interviewed, explained:

When we were located to Bwiti village, we found others living on the land assigned to us. Even though we occupied the title deed, the land was already occupied by someone else. We were given a certain

area to resettle. If we wanted to have someone removed from that land which was originally assigned to one of us, we had to compensate them. We had to do that without support from the mining company or the government (*personal communication*, 2020).

Concerning land ownership, the arrival of Base Titanium has further complicated dynamics on the ground. Community members have had to deal with aforementioned issues without the support of either the government or the mining company. Taking into account the gendered impact, as this research has adopted a gender lens, results have shown that women are especially at disadvantage when it comes to issues relating to land, in part resulting out of the arrival of Base Titanium in the area. Data analysis highlighted the conventional and traditional view of women in society which embodies the ever-existing gender gap. As explained by a programme officer from KLA, "*Kenya is inherently patriarchal*" and "*research has shown us that a fair share of our communities in Kenya have got undertones of patriarchy in the way they manage especially land issues*" (*personal communication*, 2020). For instance, as outlined in the empirical chapters, men have not fully accepted nor appreciated that land can also be owned or inherited by a woman. "*There is nothing a woman can inherit. A woman is denied inheritance from his family, from her own family and also, she is denied inheritance to her marital home*" (KYGC, *personal communication*, 2020). Moreover, a community member explains: "*Whenever something happens to the husband, the kid has the mandate to get the title deed and go to the land office to inherit the land. The female only has a verbal mandate, which actually means nothing*" (Bwiti village community member, *personal communication*, 2020). Fridah Githuku, host-supervisor in the field and director of women's organisation GROOTS, adds:

While our Constitution [Constitution of Kenya, 2010] acknowledges the rights of women and men regarding health and owning land, practices on the ground are very heavily influenced by culture. Besides gender, there are many other interests that restricts a woman access to land. There is a competition on access to land between men and women, but even men and women themselves are competing with large-scale and foreign investors for the same land. This makes it especially difficult for women, since it means there are many battles to beat first. Sometimes women feel less prioritized since focus is mainly on the large-scale investors, and deal with gender issues afterwards (*personal communication*, 2020).

In the study area, these social and cultural attitudes, values, norms and traditional attitudes that are unethical to gender equality and equity have been brought to the fore. In contrast, the KLA programme officer also explained, "*in the mining industry in the coast, they are very open-minded as far as the inclusion of women concerned. In some contexts, at least*" (*personal communication*, 2020). It is however vague how the in- or exclusion of women actually plays out in the field as Base Titanium does not enclose

gender aggregated date in its (yearly) reports, nor on its official website. Aside from the statement made by Base Titanium's External Affairs Manager, Melba Wasunna, that 16 per cent of Base Titanium's employees is female, it is unclear how the trivialization of gender issues owing to a strong culture of patriarchy, with its gender bias and practices, plays out on the ground. However, from the literature and evidence in the field, it has become clear that the social and environmental impacts of mining have a disproportionate effect on the women in society. "*Women are less likely to receive direct employment from the mine, which leads to vulnerability, powerlessness and a lack of voice and greater dependency on the mine and on men and those with power in the community*" (Jenkins & Obara, 2005, p. 9). Outcomes of this research have shown that there is awareness among local civil society organisations to emphasize and address the gender gap existing in society, contributing to the importance of tackling issues for women in relation to large-scale foreign investors coming in (e.g. Base Titanium).

8.3 In prospect: the local impacts of expected mine closure

In relation to the end of the Kwale mine life nearing, Base Titanium is preparing itself and the local community to some extent. For instance, rehabilitation and restoration of the lands on which mining activities used to take place is being conducted. This means attention is paid to what needs to happen in order to fulfil the requirement mandated by law to return the lands on which mining activities have been conducted at least to a degree of its former state. However, Base Titanium limiting its mine closure programmes and plans to rehabilitation and restoration, reinforces claims made in the literature that limited attention is paid to the social and socio-economic impacts of mine closure on the host-community. In this case study, it seems that mine closure is seen as nothing more than a managerial-technical-engineering aspect within the life-cycle of a mine (Ackerman et al., 2018) and it does not acknowledge mine closure as a social episode in the lives of individuals, households, families and communities.

One of the direct consequences of mine closure on the local community of Kwale county, is an expected loss of employment. Even though the Kwale mine has never been the majority employer, the area has seen a rise in employment opportunities in relation to before the arrival of Base Titanium. With the pending closure of the Kwale mine, job opportunities will diminish and eventually completely disappear. Not only those jobs directly created by the mine will diminish, also those jobs created indirectly. This is because the departure of the mining company simultaneously means a halt on funding, support and subsidies to local community members employed in jobs created indirectly (e.g. teaching staff in primary and secondary schools, dispensary staff). Directly related to an expected loss of employment in the study area is expected out-migration of those people formerly employed by Base Titanium. Those people trained and employed by Base Titanium have acquired skills they cannot apply

any longer when there is no mining company to work for in the area. Base Titanium's departure will evidently lead to former employees seeking (job) opportunities elsewhere.

Even though Base Titanium nowhere explicitly reports on a specified mine closure plan (yet), it does pay attention to ways in which affected communities can be aided in the shift away from a mining industry and economy. This is evidenced by the establishment of the PAVI cooperative and the Cotton On Project as discussed in the empirical chapters. However, a shift from a mining economy to an agricultural one, as a result of Base Titanium's expected departure, comes with both negative as positive repercussions for the local community. On the one hand it could be seen as an alternative livelihood strategy and a way for community members to sustain themselves and their families once mining in the area ceases. On the other hand, it is commonly known that the mining industry is a relatively rewarding industry to be employed in. Shifting from a mining economy to an agricultural one, will simultaneously mean a degradation in income generation. Which will subsequently have consequences for the living standard among the local community.

Aside from Base Titanium's rehabilitation and restoration activities, and its effort to facilitate a shift from mining to agriculture for the local community, results have indicated this is overshadowed by the aim of Base Titanium to extend its mining license. Currently, Base Titanium's focus is on conducting additional exploration activities across Kwale county. Besides having to deal with the uncertainty whether or not Base Titanium will departure from the area, community members now have to face challenges that accompany exploration activities once more (e.g. displacement and resettlement). Furthermore, it has become clear that in Kwale county, a lack of stakeholder participation prevails. Aside from the lack of participation as expressed by community members during the early stages of the Kwale Project, they also express concerns about being uninformed on processes going on in relation to the pending mine closure. This reinforces claims from previous research that it is uncommon to discuss what happens when a mine closes and the excitement and fanfare surrounding the opening of a new mine is not present when the mine is expecting to close in the near future (Laurence, 2006). Lessons learned from past mine closure cases have also highlighted the importance of engaging all relevant stakeholders. For example, the case of the Sullivan Mine in Canada shows the importance of active and sustained participation of local political leaders, the mining company and the local community in coming up with a comprehensive and sustainable mine closure plan. On the other hand, the case of Namibia shows that without solid collaboration with relevant stakeholders in the field, mine closure could lead to severe impacts for the local community.

The Conundrum of Responsibility

Today, in principle, responsibility for mines once they close is often included in the operating license. Even though, this is not the case in Kwale county, where both the affected communities as well as governments look to Base Titanium for answers. Subsequently, this contributes to the aforementioned dependency culture, which could have serious consequences for the local community, particularly after mine closure. Namely, a mining company remains in essence a profit-making entity. As Abuya (2016) puts it, "*an investor is not a social provider, they need to make profits as well*" (p. 489). A chairperson of AWEIK, a women's organization active in the study area, adds: "*when a mining company comes in, they invest their money in this hole they are digging, so they need their money back in order to get a return on their investment*" (*personal communication*, 2020). Therefore, it is arguable whether mining companies are best placed to decide what's best for the community. Through its voluntarily implemented CSR schemes, the mining companies often seek to act in the best interest of the community. However, regarding mine closure, mining companies should work in collaboration with both the affected community and the national and local government (Jenkins & Obara, 2006). In the case of the pending closure of the Kwale mine, the role of civil society organisations has become ever more prominent, while the role of the mining company and national and local government remains limited. Local CSOs not only mobilize affected communities, they also create awareness, educate and build capacity. They are, however, to a large extent dependent on funding from external donors to implement and establish projects.

Eventually it comes down to the question who takes up responsibility for mine closure. Mining companies, indigenous communities, local CSOs and governments all play a key role in supporting successful mine closure. Unclear and inadequate defined roles of the national government and mining company Base Titanium, as well as a lack of stakeholder participation (e.g. the local community) are significant challenges related to the expected closure of the Kwale mine in Kwale county.

Chapter 9. Conclusion

This chapter is dedicated to answering the central research question. This is followed by the main limitations of this thesis. Subsequently, this chapter continues with an elaboration of potentially rewarding future research directions.

9.1 Conclusion

This research has looked into the long-term impacts of mining on the local host-community of Kwale county in Kenya. Drawing on the characteristics and development path of mining company Base Titanium and titanium mining, the local impacts of the Kwale Project, and the local impacts of expected closure of the Kwale mine as experienced and perceived by the host-community, the following research question is answered:

"What are the long-term impacts of mining on local livelihoods and development?"

Through the adoption of a qualitative research approach, primary data has been collection in the field from 9 February to 17 March 2020 and consisted of semi-structured in-depth interviews and ethnography through participant observation. Snowball sampling allowed for the identification of participants, being (affected) members of the host-community, key-informants from local CSOs and NGOs, and employees from mining company Base Titanium. Due to an abrupt ending of the fieldwork because of the global pandemic (COVID-19), primary data has been complemented with secondary data collection. Secondary data collection consisted of a combination of different textual sources of information, collected from official data archives (e.g. KNBS), previous research conducted by local NGOs (e.g. KLA) and PhD-students, reports from Base Titanium and (local) CSOs (e.g. HUDA, KWACODEP, KHRN, KYGC), and internet-accessible interlocutors.

An inductive analysis of primary and secondary data collection resulted in a comprehensive understanding of the long-term impacts of mining on local livelihoods and development. Learning about the characteristics of titanium mining has highlighted mining company Base Titanium's role in local development. Especially during the operational phase of the Kwale mine, Base Titanium has put considerable effort in liaising with the host-community, mainly through its adopted and implemented CSR strategy. Their CSR strategy is guided by four key pillars, each focusing on a different development priority for the local community, being social infrastructure, livelihood upliftment and enhancement, community health and education. Furthermore, Base Titanium implemented the fencing system, through which employment opportunities for local communities has been enhanced. Being in the study area provided insights as to how the local community perceives local development initiated by Base

Titanium. Moreover, it revealed how the local community has been impacted by Base Titanium's mining activities in the past and how expected mine closure impacts local livelihoods and development. In relation to Base Titanium's implemented CSR strategy, outcomes of this research mark the existing lack of public (community) participation. During the operational phase of the Kwale mine, community members reported to have limited say in either the execution of community development projects as well as in decision-making about the implementation of these projects. This contributed to the creation of a dependency culture whereby the community does not feel it collectively owns the community development projects and relies on the mining company for support.

Regarding the impact of mining activities, this research has confirmed claims made in previous relevant academic literature that mining has major consequences on local livelihoods in host-communities. Both negative as well as positive impacts of mining activities have been reported by community members in the study area. Briefly summarizing, the arrival of Base Titanium and commencement of the Kwale Project has led to environmental consequences - such as complaints about dust, noise and water pollution -, a rise in employment opportunities for Kwale county as a whole, but less visible at the micro-level where the prospect of employment is all but lauded for the affected local community and mining-induced displacement and resettlement issues as a result of relocation processes in order for mining to take place on the lands of indigenous communities. This resulted in challenges for community members to sustain their livelihoods, and in disputes over land ownership, land access and land-use and contributed to further marginalisation. Furthermore, whereas it was thought that the mining industry in the coast of Kenya was open-minded as far as gender equality, it has become clear that the social and environmental impacts of mining remain to have a disproportionate effect on women in society. Social and cultural attitudes, values, norms and traditional attitudes that are unethical to gender equality and equity have been brought to the fore. Moreover, results have shown that women are relatively more vulnerable and to a greater extent dependent on the mine and on those with power in the community.

When it comes to the implications associated with the closure of the Kwale mine, impacts as experienced by the local community relate to an expected loss of employment, because even though Base Titanium has never been the majority employer in Kwale county, the inevitable closure of the Kwale mine will lead to a diminishing of jobs created directly and indirectly by the mine. Directly related to the disappearance of jobs, is expected out-migration of those people formerly employed by Base Titanium. Also, a decrease in and eventual disappearance of funding and support by Base Titanium regarding local development, is expected to result in a decrease in living standards among members of the host-community. Most importantly, because of a lack of an implemented integrated mine closure plan, Base Titanium has the opportunity to place focus on extending their mining license and conduct additional exploration activities across Kwale county. This results in – among other things – mining-

induced displacement and resettlement processes occurring all over again, which will impact local livelihoods in that they are once more exposed to disputes on land-ownership, land value and land use. Furthermore, public (community) participation remains limited with regards to the expected closure of the Kwale mine, resulting in uncertainty, distress, anger and conflict among community members.

In Kwale, responsibility for mine closure is not included within Base Titanium's operating license. Whereas the legislation on mining in Kenya does enclose regulations in relation to rehabilitation and restoration, mining companies are not responsible for sustainable mine closure and are therefore not required to implement an integrated mine closure plan. Without a comprehensive mine closure plan, it is expected that the local community will remain impacted post mining. Whereas the local community now (during the operational phase of the Kwale mine) frequently turns to the mining company in relation to mining-induced issues, conflicts or problems, this will disappear when Base Titanium exits, leaving the local community to deal with it on their own. Even though local CSOs aim to fulfil this gap, they remain dependable on external funding and contributions from donors, thereby questioning their capability of providing sustainable support. Outcomes of this research and lessons learned from past mine closures across the world has marked the cruciality of close collaboration between and participation of all relevant stakeholders in the field. Unclear and inadequate defined roles of the national government, mining company Base Titanium and a lack of public (community) participation and engagement are significant challenges related to the expected closure of the Kwale mine in Kwale county. The gazettement of additional mining regulations in February 2020 is promising for expected mine closure, since it brings together relevant government officials, the mining company and affected local communities. Finally, one of the main long-term impacts of mining on local livelihoods as experienced by community members of Kwale county, has been the intentional or unintentional creation of a dependency mentality towards mining company Base Titanium. Whether this is regarding Base Titanium's activities during the operational phase of the Kwale mine, during mine closure or even post mining, the local community is to a large extent dependent on support from Base Titanium.

9.2 Limitations of this research

Although this research yields interesting results, there are significant limitations that need to be reflected on. this list of limitations is not intended to be exhaustive, but rather aims to mention those limitations that influenced this research the most.

Limitations regarding the research design

This research adopted a qualitative approach, as it allowed to identify issues from the perspective of the study participants and study things in their natural and social settings. Field work enabled to make

sense of the long-term impacts of mining as experienced by the local host-community. The first limitation encountered throughout this research has been the influence of existing biases in the process of sense-making. This means that, even though critical attention has been placed towards the role of the researcher throughout data collection and analysis, this research is not completely objective.

Moreover, a case study as research method has been adopted. It was known beforehand that making use of a case study would have implications for the generalisation of results. However, this research's aim was to understand and analyse the long-term impacts of mining on the local community of Kwale county, which has been accomplished. The results are not generalisable to other mining industries across the globe, but this does not the diminish the relevance of the results for this particular locality. Even though this research lacks scientific generalizability and is therefore said to have low external validity, this is compensated by having high internal validity. Besides, generalisability of findings has never been the main aim of this research. In having a detailed picture of what is happening in the specific locality of Kwale county, findings automatically contribute to existing literature on the long-term impacts of mining on the local host-community and (local) development.

Limitations regarding the research instruments

Aside from limitations regarding the chosen research design, this research also dealt with some limitations regarding the measures used to collect the data.

Primary data collection

In the field, primary data has been mainly collected through semi-structured in-depth interviews with relevant stakeholders (recruited through snowball sampling), such as community members and civil society organisations from Kwale county (*see appendix A for a list of participants*). Although these semi-structured in-depth interviews almost felt like (informal) conversations, which was helpful to establish rapport, this also led to not all valuable questions being asked. This has however been dealt with accordingly, by staying in touch through online platforms (e.g. e-mail and Skype and/or WhatsApp (video) calls) after the interview, in order to be able to ask follow-up questions. Moreover, it enabled to ask the same questions as during the face-to-face interview, but then tweaked a little bit every time, in order to boost internal validity through data triangulation. Whereas it was expected less structured approaches would be helpful to gather data, this remained quite challenging in the field. For example, another limitation encountered while conducting the semi-structured in-depth interviews is the existing room for inevitable biases (e.g. like sexism and ageism). A more structured interview would ask every single participant the same questions, regardless of their gender and age.

The second primary data collection method has been ethnographic fieldwork through participant observation. For instance, before commencing data collection in the field, it was expected to interview a range of community members originating from different villages across Kwale county. Data collection would have been completed whenever data saturation was achieved. One major limitation of this research is that data saturation has not been achieved while being on the ground. Due to the unexpected disruption of fieldwork as a result of the acute global pandemic (March 2020), not all research sites planned on visiting have been visited. Semi-structured in-depth interviews as well as ethnographic fieldwork has exceptionally been conducted in host-resettlement site, Bwiti village. As a result, outcomes of this research have been drawn from a limited scope. However, this limitation has to be nuanced since data could have been gathered endlessly because the consequences and/or impact of mining are interpreted different and experienced differently by each and every community member.

Furthermore, as anticipated upon it was quite challenging to work with vulnerable communities. From the literature it became clear that one of the inherent dangers with working with vulnerable communities is the possibility that the affected persons might exaggerate their present circumstances or alter their answers in an attempt to seek sympathy and/or support (Abuya, 2013). This was evidenced during a field trip to Bwiti village. Before entering the village, arrangements were made between the researcher and a coordinator from a civil society organisation to together visit and talk to community members, whereby the coordinator would also occupy the role as translator (from Swahili to English). Aside from the limitation of having a language barrier, the fact that the researcher entered with a (for community members) known representative, already comes with several challenges and possible limitations. Community members might have altered their answers to comply with either the coordinator/translator or the researcher.

Secondary data collection

In terms of textual secondary sources, this research relied heavily upon a combination of different sources of information. This included data from official data archives such as the KNBS and annual reports from mining company Base Titanium as well as data from previous research (e.g. scholars and PhD-students), internet-accessible interlocuters and reports from local CSOs. However, what was not anticipated upon, was the difficulty to acquire some of the necessary (hard) data. For example, data on both the expected environmental impact of Base Titanium's mining activities as well as data on gender (aggregation) were not open for public scrutiny. Several attempts have been made to get access to these documents, for example through WhatsApp conversations with key interlocuters on the ground, but unfortunately this did not succeed in acquiring all the relevant data.

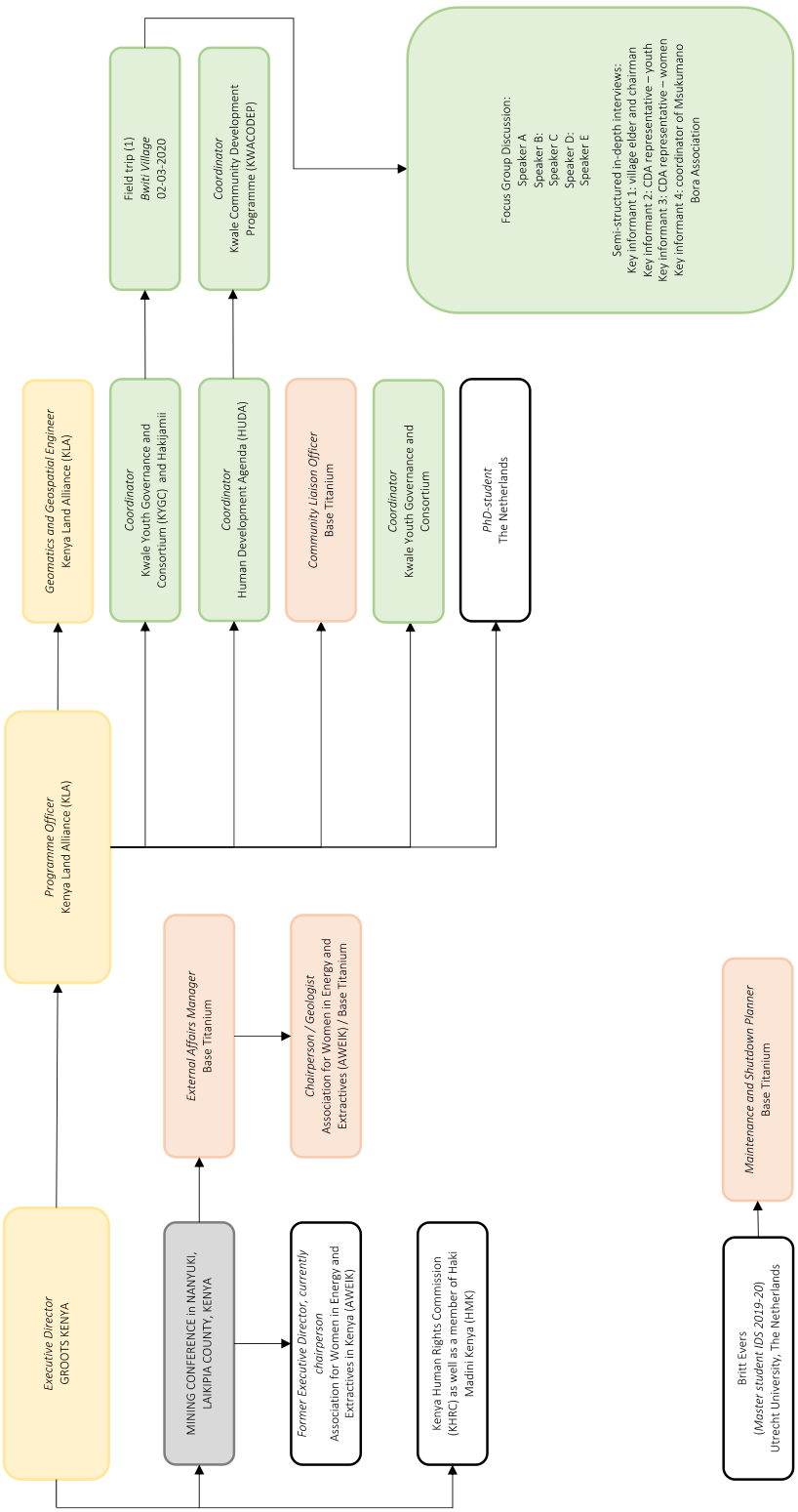
Evidently, the occurrence of COVID-19 and associated abrupt ending of the fieldwork was not anticipated upon nor expected beforehand. This required a flexible stance towards data collection in order to finalise the thesis on time, while still assuring it remains compelling.

9.3 Recommendations for future research

The empirical results from this research, combined with the limiting considerations aforementioned, uncover a number of interesting future research opportunities. First, the empirical results presented in this thesis imply the need for increased attention to micro level research on (expected) mine closure. Current understanding of mining and development is often limited by a macro approach, limiting research on cases such as Kwale county, Kenya, where the mining industry is not considered to be affecting the majority of its population and thus discarded as compelling for research. Adopting a micro perspective in additional research will contribute to the debate on whether mining is beneficial for local host-communities or not in the long-term. Second, while this research has adopted a gender lens, research on the long-term impact of mining remains predominantly gender-blind. An interesting avenue for further research is to systematically address issues related to gender, in order to place increased attention to how mining activities and mine closure is impacting men and women differently in local communities. Third, extensive stakeholder analysis could be a useful tool and might motivate an entry point for additional research. Through stakeholder analysis, one could get a grasp on and comprehensive understanding of the different stakeholders involved in mining and development. Moreover, it allows for a critical examination of the complex roles and relationships between stakeholders (e.g. government, large-scale mining companies and indigenous communities). Finally, regarding the chosen methodology, for future research it is recommended to incorporate both quantitative as well as qualitative elements, referring to a mixed method approach. Even though the qualitative character of this research captures the holistic components of long-term mining impacts on host-communities, quantitative elements could add value to the research by making it easier to generalise and minimize the limitation of researcher bias.

Appendix

A. Snowball sampling tree



Legend:
Yellow = Supervisor / Host-organization
Green = Community
Orange = Base Titanium
Grey = Events

B. Semi-structured In-depth Interview Guide

Utrecht University

Semi-structured In-depth Interview Guide – Local Communities

I am Britt Evers, a Master student in International Development Student from Utrecht University (2019-20), looking to learn more about how men and women's livelihoods are impacted by large-scale land-based investments in the mining sector. On behalf of this interview I would like to elaborate on several topics, including local engagement; meaning and perceptions, and land. The goal of this interview is to gain insight in how local men and women are engaged in the Kwale Operation and how livelihoods have been affected by the arrival of Base Titanium in order to better understand how livelihoods are impacted when Base Titanium leaves the area. In order to be able to say something about the overall participant demographics and create a useful framework for data analysis, the interview will briefly start with a couple of questions about your personal background – demographics. Participating in this interview will roughly take about 30 minutes. I would like to mention that all responses are completely anonymous and confidential. Your name will not be used, to make sure that no one can identify you with any answers and data collected through these interviews. Data will be solely used for academic purposes and will not be distributed to others. Before we start, I would like to ask if I have your consent to participate in this interview. Finally, I would like to ask for your consent on audio-recording in order to analyse the data at a later stage.

Opening questions

1. Can you tell me something about yourself?
   Probe: where were you born?; where is your home located?; are you married?; do you have children?

Key questions

Perceptions

2. What is your view on the arrival of Base Titanium in Kwale County?
   Probe: prosperity; opportunity; deprivation of land; loss of income; loss of (social) capital

3. What do you think about the Community Development Plans in place set up and executed by Base Titanium?
   Probe: opinion; views

4. Could you give an example of something Base Titanium did for you personally and/or as community?

Engagement

Employment

5. Are you currently employed by Base Titanium?

6. Is any of your family members currently employed by Base Titanium?

Resettlement and displacement

7. Did you have to relocate due to the arrival of Base Titanium?

8. Were you obliged to leave your home or place of habitual residence?
   Probe: voluntary; involuntary

9. Has your access to land or resources that are important to your means of livelihood or economic well-being been restricted?
   Probe: fully; partially

Prior informed consent

10. Have you been informed about Base Titanium's activities prior to the arrival of Base Titanium?
    Probe: meetings; when did you first hear about Base Titanium?

11. Have you been informed about the processes taking place concerning Base Titanium's plan to expand their mining activities?
    Probe: exploration

12. Have you been informed about the expected mine-life ending?
    Probe: possible expanding of the mine-life; local civil society organizations

Gender

13. If there are meetings where community members are mobilized to be informed about Base Titanium's plans, who – from the community - will attend those meetings?
    Probe: key informants; representatives youth/women; chairman

Land

Land tenure systems

14. Do you hold a government-issued land title?
    Probe: formal rights to land and resources; does your partner hold a land-title?; does one of your children hold a land-title?

15. Do you hold a right to land and resources recognized under customary tenure systems?
    Probe: informal land rights

Land activities

16. How do you use your land?
    Probe: current activities; prior activities

Value of land and compensation

17. How would you assess the value of your land?
    Probe: trees; soil

18. Have you been given compensation for your land?

19. How have you been given compensation for your land?
    Probe: monetary

Environmental impacts

20. Do you experience any environmental impacts?
    Probe: water pollution; air pollution

Fading questions

21. How do you feel about Base Titanium's aim to expand its mine-life?

Thank you note

I would like to thank you very much for taking the time to meet with me and talk about your engagement and perceptions regarding the Kwale Operation. I am looking forward to processing the data collected through this questionnaire. If you are interested in how I translated your responses in my research or need any additional information from me at this point, please feel free to contact me.

Thank you for your time.

C. Focus Group Discussion Guide

Utrecht University

Focus Group Discussion Guide – Local Communities

I am Britt Evers, a Master student in International Development Student from Utrecht University (2019-20), looking to learn more about how men and women's livelihoods are impacted by large-scale land-based investments in the mining sector. On behalf of this focus group discussion I would like to elaborate on several topics, including local engagement; meaning and perceptions, and land. The goal of this focus group discussion is to gain insight in how local men and women are engaged in the Kwale Operation and how livelihoods have been affected by the arrival of Base Resources in order to better understand how livelihoods are impacted when Base Resources leaves the area. Participating in this focus group discussion will roughly take about 45 minutes. I would like to assure you that the discussion will be completely anonymous and confidential. The notes of the focus group will contain no information that would allow individual subjects to be linked to specific statements. You should try to answer and comment as truthfully as possible. If there are any questions or discussions that you do not wish to answer or participate in, you do not have to do so, however, please try to answer and be as involved as possible. Finally, it should be mentioned that I would like to ask for your consent on audio-recording in order for me to analyse the data at a later stage. Data will be solely used for academic purposes and will not be distributed to others.

Resettlement and Displacement
"I know whether I'll get my land back after Base's departure"

Meaning
"What is your view/opinion of the arrival of Base Titanium in Kwale?" "The arrival of Base Titanium has brought prosperity for the community and positive community development" "Without Base Titanium's arrival I would not have what I have now"

Land
How would you describe the value of your land currently? Probe: What activities? How would you describe the value of your land prior to the arrival of Base Resources? "I know how I can use my land after Base's departure"

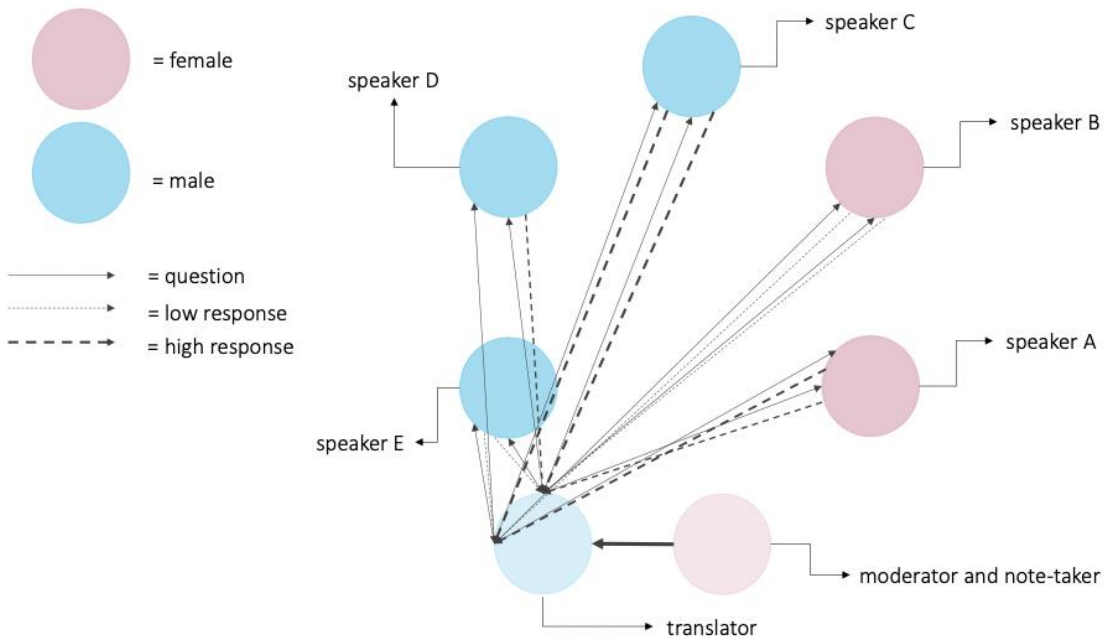
Informed consent
"I am informed and aware of the expected mine-life ending in 2023"

Thank you note

I would like to thank you very much for taking the time to participate in this Focus Group Discussion and talk about your engagement and perceptions regarding the Kwale Operation. I am looking forward to processing the data collected through this Focus Group Discussion. If you are interested in how I translated your responses in my research or need any additional information from me at this point, please feel free to contact me.

Thank you for your time.

D. Schematic overview Focus Group Discussion – Bwiti village



E. Codebook for qualitative data analysis

Sub-question	Category	Code	Primary data set	Secondary data set
Context/characteristics of titanium mining	Land	Fair (monetary) compensation	√	
		Land use	√	
		Prior informed consent	√	
		Land value	√	
	Mining regulations	Mining Act 2016	√	
		Community Land Act	√	
		Constitution 2010	√	
		Community Development Agreements	√	
		Gazette	√	
		Mine closure regulations	√	√
	(Community) development programmes and plans	Community projects	√	√
		Development implemented by Base Titanium	√	
		Shadowing system	√	
		Fencing system	√	
		funding	√	
		Social license	√	
		PAVI-cooperative		√
		Training		√
		Community Health Units		√
		Community Health Volunteers		√
		Improved access healthcare		√
		Empowerment		√
		Loans		√
Local impacts of the Kwale Project	Social cartography	Social land mapping	√	
	Women in the mining industry	Inclusion of women	√	
		Household composition/role-division in affected villages	√	
		Head of the household	√	
		Women sensitization	√	
		(Lack of) women participation in decision-making	√	
	MIDR	Displacement	√	√
		Relocation	√	
		Resettlement	√	
	Community participation	Community/local engagement	√	
		Youth participation	√	
	Livelihood changes	Loss of livelihood	√	
		Social capital	√	
		Sense of belonging	√	
		Lower living standards	√	
		Loss of market for produce	√	√
		Self-reliance	√	√
		Livestock	√	√
	Perceptions/views on Base Titanium	Dependency	√	
		Hero/developer		
		Opportunity		
		Funding		
	Community perceptions	Community responses	√	√
		(Lack of) flow-back	√	√
		No trickle-down	√	
	Environmental impact	NEMA	√	
		Complaints about air/water pollution	√	

Expected mine closure	Exit strategy/plans	Responsible exist	√	
		Exit plans	√	
	Expected mine life ending	What will happen when Base Titanium leaves	√	
		Expectations of life after Base Titanium	√	
		Extending mining license	√	
		Future perspective mine life	√	
		Cotton On Project	√	
	Mine closure plan	Exploration	√	
		Areas earmarked for exploration activities	√	
		Exploration conflicts	√	
		Rejecting the process of exploration	√	
		Rehabilitation	√	√
		Restoration	√	
		Recycling		√

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