

**Investigating Social License to Operate and Pacification  
associated with the heavy sand mining at Fairbreeze, KwaZulu-  
Natal, South Africa.**

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## DECLARATION

I, Nomthunzi Khuzwayo (207503256), hereby declare that this master's dissertation entitled: Investigating Social License to Operate and Pacification associated with the heavy sand mining at Fairbreeze, KwaZulu-Natal, South Africa is the result of my research, assessment, analysis, and investigation. This dissertation has not been submitted to any extent for any other degree or any other institution. All citations and references have been acknowledged to the best of my ability. The University of KwaZulu-Natal provided ethical clearance for this research. This dissertation is being submitted for the degree of Master of Science in Geography in the College of Agriculture, Engineering and Science, University of KwaZulu-Natal, Pietermaritzburg, South Africa.

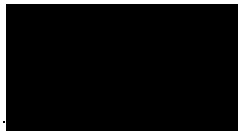
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As the candidate's Supervisor I agree/do not agree to the submission of this thesis.

Supervisor: Dr A. Nel \_\_\_\_\_



Date: 9/10/23

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## ACRONYMS

ABET	Adult Basic Education
BA	Basic Assessment
BAR	Basic Assessment Report
BEE	Black economic empowerment
CFR	Cape Floristic Region
COM	Chamber of mines
DEA	Department of Environmental affairs
DME	Department of Mineral and Energy
DMR	Department of Mineral resources
DWA	Department of water affairs
EIA	Environmental Impact Assessment
EJ	Environmental Justice
GPS	Geographical positioning system
HSM	Heavy Sand mining
I&A	Interested and affected parties
IEM	Integrated Environmental management
KZN	Kwa-Zulu Natal
MPRDA	Mineral and petroleum Resources Development Act
NDP	National Development Plan
NEMA	National Environmental Management Act
NGO	Non-Governmental organization
NRM	Natural Resource Management
PE	Political Ecology

RBM Richards bay Minerals

RSA Republic of South Africa

SLO Social Licence to operate

TA Traditional authority

TKAG Treasure Karoo Action Group

TPSN Theoretical, Place, Scale Network

WULA Water Use License application

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## **ABSTRACT**

Extractivism is a term associated with the extraction and export of resources extracted from the Earth's surface, that open doors for economic opportunities and job creation. The extraction of sand and heavy minerals has been occurring since ancient times, affecting both developing and developed countries. Heavy Sand Mining (HSM) is a form of extractivism, which results from the excavation and processing of minerals such as titanium and ilmenite and is utilized in many major industries. In a South African context, there are several examples where mining company operations within communities and fragile ecosystems are contested, and exhibit a weak 'Social Licence to Operate'. Even though formal rights to mine may be granted, social consent on the part of affected communities can remain in question. While this fact is acknowledged, there is little research in South Africa on how diverse stakeholders, including mining houses and adjacent community groupings, navigate and contest the Social Licence to Operate, over the inception and running of HSM activities.

The Fairbreeze mine, adjacent to the Kwazulu-Natal town of Mthunzini, South Africa has a reported history of contestation over the inception of the mine. For the study, a qualitative methodology and case study approach was adopted. The study aimed to investigate how stakeholder perceptions of and relations to the mining activity changed over time, as well as the perceived environmental and social impacts of the mine. For data collection, a questionnaire was distributed and interviews involved interested and affected parties, including community members and focus groups that were both purposely and randomly selected. A field of study known as political ecology was utilized for the research to politicize an understanding of the mining operation and explore the relationship between the various stakeholders, not least adjacent communities, and the local community environment. A conceptual framework using the two concepts of Social Licence to Operate (SLO) and Pacification was used to analyse the evolving relationship between the mining company and other stakeholders.

The results indicated that a small percentage of the population were granted employment for short durations, while the majority of the community as a whole, did not see significant economic improvements in their livelihoods. Some positive economic impacts were the improvement of infrastructure and roads. Economically, the mine assisted in the economic growth of the area. Environmentally, habitats have been affected negatively. There are however long-term plans to rehabilitate the affected area through offsetting methods, once mining is complete. More importantly for this thesis, I characterize the contested licensing process for the mine to have had a weak social license to operate, and an evident process of pacification, whereby resistance to the mine was, over time, diminished or undermined in court. The research indicated that future heavy sand mining projects must involve a stronger social license to operate, which will assist the relationship between affected communities. Lastly, more environmental programs should be conducted in mining-affected areas, to ensure that skills development and sustainability remain the major focus in affected communities.

# **CHAPTER ONE: BACKGROUND ON EXTRACTIVISM AND MINING**

## **1.0 Introduction**

Extractivism benefits many affected nations economically. Extractivism is understood to be the broadening of economic growth at the expense of the exploitation of natural resources and embarking to extract potential areas which have been ignored in previous times. (Svampa, 2015). Extractivism is the extraction of natural resources from the Earth, ostensibly for the benefit of the country's development (Aguilar, Gudynas, 2010). It can also be seen as a development scheme or method utilized by a certain country or region, in the improvement of their socio-economic and political livelihoods (Gudynas, 2010). Improved livelihoods resulting from extractive activities are considered to be a sign of growth (Aguilar, 2012).

However, extractivism can negatively affect neighbouring communities and environments. Furthermore, economic growth based on natural resources is short-lived with some negative impacts such as inefficient planning or limitations of long-term projects, as well as reduced standards of livelihoods within a resource-rich country (Lahiri-Dutt, 2006). With extractivism, natural resources can become vehicles that play a role in increasing personal or national wealth, without any consideration for other sectors which might be affected. Three types of extractivism have been distinguished. The different types of extractivism include 'depredating extractivism', which is the most common form and excludes social and environmental concerns. 'Cautious extractivism' considers certain elements, including social and environmental standards, and economic aspects such as the creation of job opportunities in a country. The last type of extractivism is called 'indispensable extractivism' and refers mainly to a reduced extraction of resources, which could mean adopting a greener environment or sustainability approach such as cleaner technologies (Gudynas, 2013). The main aim of indispensable extractivism is extracting as modestly as possible, supporting sustainable activities such as recycling, as well as ending pressure on ecosystems, and minimizing emissions.

South Africa has in recent times ostensibly adopted the more cautious type of extractivism where social and environmental concerns are incorporated. Legislative measures including the Mineral and Petroleum Resources Development Act (MPRDA) was introduced in 2004 to highlight past inequalities regarding mining (Heyns, 2020). One of the objectives of the MPRDA was to ensure the inclusion of previously disadvantaged individuals in the mineral sector. The Mining Charter of 2018 also has a number of aims. Firstly, to promote equal access to the nation's mineral resources to all the people of South Africa (Sanchez, 2009). Secondly, the charter aimed to substantially and meaningfully expand opportunities for historically disadvantaged South Africans (HDSA), including women, to enter the mining and minerals industry; it also intends to benefit this group from the exploitation of the country's mineral resources, for example through initiatives and community upliftment programs. Thirdly, its charter's purpose is to develop the existing skills base for the empowerment and progress of historically disadvantaged South Africans (Sanchez, 2009), so they can utilize the full capacity of the existing skills base of HDSA and serve the community.

The charter also encourages employment opportunities and advances the social and economic welfare of mining communities, and the major labor distribution areas. Finally, it serves to promote the positive impacts brought about by minerals. While this initiative aims a cautious extractivism it is highly contested, and there is criticism that its aims might not be achieved, particularly in ensuring that all parties interested and affected by any development, are compensated and share in the benefits that it is likely to occur in that area (Snachez, 2009).

The mining charter was not the only initiative that was introduced to ensure equality in mining-affected areas; there was also Operation Phakisa, which points to a more neoliberal aspiration for the mining sector. The relevance of Operation Phakisa is that The Chamber of Mines (COM) considers modernization as a process of transition and transformation of the mining industry (Chamber of Mines, 2016). One of the stated objectives of Operation Phakisa is that greening initiatives and environmental protection are adopted, which includes the extraction of minerals in a sustainable approach. Another objective is the prioritization of people and communities affected, through creating work opportunities and skills development. However, the final objective seems to receive the most attention, which is the prioritization of growth in the mining sector to ensure the benefits of the activity (Letsoalo, 2017). Although initiatives and programs have been implemented to assist communities affected, it is also in question as to whether this more liberal orientation to facilitate mining will result in increased community benefits, while its approach to ‘hurry up’ mining attracts significant attention.

Within this mining context, the growth in population and the increase in development projects have been responsible for the demand for sand in South Africa, and throughout the world (Kondolf, 2000), however, the impact of sand mining in South Africa is relatively unexplored. The extraction of sand activities occurs in different forms. One form of sand extraction is floodplain gravel mining (Ladson and Judd, 2014). This activity includes the extraction of fine sand. This type of sand mining is considered safer than the direct extraction of sand from rivers, but there remains a substantial threat from it as well (Ladson and Judd, 2014). The negative risks triggered by this type of mining can varyingly include environmental impacts such as the loss of farmlands, social impacts such as noise and dust within the affected communities as well as the disturbances of cultural values and changes in the beauty of the area (Ladson and Judd, 2014). In recent years, there has been a demand for people to mine beach sand, and in the process disturbs the coastal landscapes (Pilkey et al., 2007, Barnett 2012 Kondolf 2000). The destruction of coastal areas due to beach mining is recognized, as is the need to preserve beaches for future generations.

The aspect most relevant to this research, however, is the mining of heavy sand minerals (HSM). Worldwide, minerals such as titanium, titanium dioxide, and zircon are extracted from Heavy Sand Mining. “Seventy-five percent of the world's titanium is produced from HSM, the rest being extracted mainly from hard rock” (Tyler and Minnitt, 2004, p. 89).

The demand for the production of titanium is high. More than 80% of Titanium is used for the production of pigments the medical field also uses it while zircon is used in TV screens. Zirconium is in great demand in chemical industries (Tyler and Minnitt, 2004).

The presence of heavy minerals such as ilmenite, rutile, and zircon are present in mineral sands along the east coast of South Africa, between East London and the Mozambique border - estimated at 2476 million tonnes (Wipplinger, 1985) - and from Strandfontein to the Orange River mouth, along the west coast, with volumes estimated at well over 100 million tons (Wipplinger, 1985). Mineral sand is a term applied to sand that is generally black (Schroeder, 1997), and is found in beaches and dunes along the coastline, and were first discovered in the 1920s (MacPherson, 1982). Other African counties, including Mozambique, Kenya and Madagascar have also been associated with HSM (Tyler and Minnitt, 2004, p. 89).

According to Carrere (2004), sand mining operations have negatively impacted the environment. As a result, sand mining has been halted in many countries. However, dune mining continues and remains an important global challenge, with more than 30 environmentally damaging beach mining projects and operations having been documented. In this context it is important to consider mine-community relations, and the concept of Social Licence to Operate (SLO). Communities affected by an HSM operation influence its success or failure. It is therefore advisable that mining companies maintain good communications with affected and interested parties. In recent times, communities have been included in major mining operations thereby affecting their lives (Majer, 2013), and there can be instances of high contestation, or where SLO is weak or contested. In such cases the question arises as to how the relationship between mines and communities shifts over time, and how mining companies can continue to provide a conducive environment for the operations to continue. The next section will give a brief description of the ilmenite mine at the core of this thesis, known as the Fairbreeze mine

## **1.1 Fairbreeze Mine**

The Fairbreeze mining area represents a coastal dune sequence that accumulated north of the Thukela River near Mthunzini. The northward movement of sediment by longshore drift is currently the dominant contributing factor to the accretion of ilmenite in the Fairbreeze deposit on the coastline, and development of parallel dune systems along the coastal zone in the Amatikulu-Mlalazi area. Beach swash zone processes and wind transport off the beach resulted in heavy mineral concentrations on the windward dune face, in localized enrichment parallel to the dune forms (BAR, 2012). Tronox KZN Sands (Pty) Ltd is currently mining these mineralized dunes, which contain economic deposits of heavy minerals including ilmenite, leucoxene, zircon, and rutile” (King, 2021, p. 2). The Fairbreeze mine was commissioned in 2016, making use of 250 ha of open surface (Cocks, 2019, p. 479).

Some of the ecological impacts of the Fairbreeze mine are on the environmentally sensitive areas bordering the mining operation. Tronox proposed sustainable plans which were put in place as soon as the mine commenced in the area (Moodley, 2012). The Fairbreeze mine, however, has also impacted commercial farming in the area, including sugar cane plantations and eucalyptus trees. Moreover, natural habitats have also been affected by the mine but were intended to be mitigated by offsets.

Finally, the mining company also claims to have supported local programs through initiatives, to assist in the upliftment of people and their livelihoods. Some community youth were supported to pursue educational programs, especially students who had performed well in their matric exam, as they were offered opportunities as process controllers in the mine and these have been reported (Moodley, 2012). Other internship positions were to be offered to people who had obtained an S4 qualification. However, there have also been allegations of negative impacts by communities, which were associated with a rift among the communities themselves, as environmental protection was a major challenge during the mine operation (Moodley, 2012). Initially there was opposition that was attributed to a small group of individuals who had an emotional connection to the Fairbreeze mine area, which further contributed to the delays of the mine project at Fairbreeze mine commencement (Jikijela, 2013). The initial resistance started in Mthunzini when the affected parties realized the extent of the footprint the mine was going to cover hence the impacts it would bring forth to the nearby communities and environment (Bisht and Alier, 2022). The communities formed an alliance to contest against the proposed mine and employed a lawyer to assist them in tackling the mining company and its proposed operations

## **1.2 Research Problem**

There is no research on the outcomes and process of heavy sand mining at Fairbreeze and given the contested nature of the mine's inception, as well as the increased demand for mining heavy minerals in South Africa, research into these facets is important. Furthermore, there is a need to understand how the mine-community relations can change over time, and how the operations have persisted even in the face of contestations. In such contexts the application of concepts such as social license to operate and pacification has gained increasing prominence, but have not been applied to mining contexts in South Africa, such as at Fairbreeze. While this importance of a SLO is acknowledged, there is little research in South Africa on how diverse stakeholders, including mining houses and adjacent community groupings, navigate and contest the SLO, over the inception and running of HSM activities.

## **1.3 Aim and Objectives of the Study**

### **1.3.1 Aim:**

The study aimed to investigate the experience of heavy sand mining at the Fairbreeze mine through a political ecology approach, to give a clearer understanding of its localized impacts and the changing relationships and perceptions it created in the area.

### **1.3.2 Objectives:**

- To describe the reported impacts on people and environment pertaining to the sand mining in Fairbreeze, Mthunzini,
- To detail the changing relationship between stakeholders around the mine, as well as stakeholder perceptions of the mine itself.
- To utilize the concepts of Social Licence to Operate and Pacification in explaining the research findings.

## **1.4 Problem statement and Research approach**

The issue of extractivism and how relations between communities and mining companies change in communities remains a challenge provincially, nationally and globally. The issue of communities contesting mining companies has also seen a slight increase in recent years. Contesting mining companies persists in communities especially rural communities who are emotionally attached to their land. The research approach for the Fairbreeze mine was not only conducted in one way but was conducted in different ways and forms. In the case of the study of the Fairbreeze mine the method of data collected varied. Firstly, questionnaire surveys were utilized including community members of the four affected area, secondly key informant interviews were conducted for the Fairbreeze mine case, thirdly field observation was also conducted whereby I was recording what is visible to my eye at that time and finally literature review and document analysis were also used in my analysis for the Fairbreeze mine case.

## **1.5 Background of the Study**

The themes I will discuss in this section are divided into two categories, namely social and ecological issues of HSM, with both focused on traditional rural areas. The first theme is mine community relations; the second one is social acceptance and mining; the third one is the contestation of mining communities; then I will next discuss the environmental authorization and EIA; and lastly there will be a discussion on biodiversity offsets

Sand mining concerns are not only relevant to the South African context but affect countries on a global scale, as well as the mining industry in general (Hansen Ibrahim 2012, p. 32-46; Warhurst 2001, p. 57-73). Today there is more focus on sustainability and questions regarding mining. Mining can have a major negative impact

on the environment, it should “be recognized that the processes of prospecting, extracting, concentrating, refining, and transporting minerals have great potential for disrupting the natural environment” (Rabie *et al.*, 1994, p. 823).

Even though in recent years, research has shown that mining companies have become more environmentally alert and are increasingly pushed to protect the environment, the mutualistic component of sustainable development between the environment and mining, still lacks support in the literature (Lambert 2001, p. 275-284; Warhurst 2001). The demand to prioritize communities and the environment is increasing, but the planning process is yet to be changed, and necessary tools to avoid social dangers remain unclear. Planning in mining is becoming broader and involves a wide variety of stakeholders, and interested and affected parties, unlike previously (Salim, 2003).

Environmental authorization and the EIA process are examples of regulatory processes that are integral to HSM, as any activity which is likely or can potentially impact or affect communities or the environment, must be investigated legally under environmental legislation. Environmental authorization applications are dealt with within the National Environmental Management Act, 1998, read in conjunction with the Environmental Impact Assessment (EIA) regulations, and three different types of listed notices. In recent years, the inception of the Environmental Impact Assessment procedures has aimed to identify problems associated with an activity and propose sustainable solutions, to the benefit of all parties involved (Jain *et al.*, 2016). But there have been debates in the literature about the contents of an EIA, and how the possible challenges can be overcome at an early stage of the project life (Rhodes, 2012). For Spiegel, EIA requirements continue to provoke major challenges “in mining communities, where dynamic struggles raise important avenues for understanding how discourses of environmentalism are situated and contested in complex political terrain” (Spiegel, 2017, p. 96).

In recent years, the literature has painted a picture of large mining companies silencing community members about big decisions (O' Faircheallaigh, 2017), and that mining companies push for developments more than protecting the affected parties (Spiegel (2017) Gwimbi (2014) and O' Faircheallaigh 2017). While the direct impacts of conflicts between communities and mining companies can be avoided in the early stages of the operation (Muntingh, 2011), mining environments are often highly contested, and many communities often feel excluded from the planning of the operations. Contestation is linked to HSM operations; as environmental organizations also seek support in prohibiting HSM mining operations in their neighbourhoods, and often contestations occur during court cases against mining organizations to sustain the sustainability of natural environments. Contestations against mining companies occur all over the world, where communities embark and fight for the protection of their land, and in South Africa have been prominent on the Cape West Coast (Presence, 2010), in the Mapungubwe World Heritage Site (Tempelhoff, 2010) and in the Karoo region (Fakir, 2011; Pitock, 2011). There can be significant costs to mining disputes, which can extend to the loss of life (Swanepoel, 2011).

Often, disputes are underpinned by socio-economic and environmental issues (Masondo & Lekotjolo, 2010; The Star, 2010). Debates relating to land control have often occurred between mine-affected communities and the state. “It is often being argued that conflict arises between communities and mining companies, simply because both places fundamentally different socio-economic value on land” (Hilson, 2002, p. 68). Communities feel historically attached to the land and therefore feel that the government has no right to take their land and give it to mining companies. The government feels the opposite regarding the communities’ complaints, with sub-surface mining rights vested in the state, and feels that they are the real owner of the land after all (Lehavi and Licht, 2007). Contestation is often the result of failed promises relating to environmental protection and other social disputes within the community. Contestation of HSM operations is common as most mining companies do not achieve most goals they set out for communities, and so people feel betrayed and let down. Contestations can be a result of mining companies working in an area and not rehabilitating it properly after. Or it can arise where communities affected fear that more negative impacts that affect them will follow. A final source of contestation relates to the removal and damage of vegetation during HSM mining operations, which has resulted in major negative impacts on ecosystems and habitats. The extraction processes can be held liable for the environmental impacts, where in some instances the process of minerals commenced without proper plans being put in place, and mitigation factors being ignored, resulting in environmental degradation such as soil erosion (Ashraf, *et al.*, 2011 Jaramillo 2007, and *Mngeni et al.*, 2016)

Issues on contestation over mining underline the importance of considering mine-community relations. Mine-community relations are the relationship that exists between mining companies and the communities affected by the HSM operations. Community engagement with mining companies is an important element of a mining company's strategy, as communities surrounding the proposed mining area must be included in the development pathway. HSM operations take place within proximity to communities, which forces the mining companies to accommodate communities greatly, to prevent activities such as protests. This last point is very important, as community exclusion can result in absolute failure for the mining company in commencing its operations, for example, communities could resist having that operation in their locality. Conversely companies who work closely with communities affected are likely to be more successful, than those that exclude communities affected by an operation. In South Africa, and Kwazulu-Natal in particular, Traditional authority (TA) relations are an important factor in mine-community relations in mine-operated areas. Mining companies operating on traditional-owned land require the support of traditional leaders and communities within to ensure access to land when needed. (Render 2005). Traditional authorities play a major role in HSM operations as they become the voice of the people, so TA becomes the closest communication channel between communities and mining companies, the communities, and ensuring that all interested and affected parties are acknowledged by mining companies. Many communities affected by mining are often let down. Past regulations relating to HSM normally favoured the interests of traditional authorities over affected communities.

This is part of a broader critique where Post-apartheid laws related to traditional leadership have been criticized for promoting corruption and undermining the rights of rural communities (Claassens and Matlala, 2014).

This brings up the key theme for discussion in this thesis which is social acceptance in mining. A social license fundamentally changed how mining companies operate in affected communities. McMahon (1997) was one of the first writers to touch upon the topic of a good relationship between mining companies and communities, which also immediately raised debates around sustainable development and social license, which are interconnected terms. Pierre Lassonde (2003) drew attention to the observation that “Without local community support, your project is going nowhere”. He described social license as “the acceptance and belief by society, and specifically our local communities, in the value creation of our activities, such as we are allowed to access and extract mineral resources” (Lassonde, 2003). A social License also implies that efforts will be made by relevant parties to ensure that society monitors and measures how the project is initiated, progresses, and eventually completes its operation within that community.

A license to operate is granted on the basis that communities are alerted before the commencement of the operation and are involved in all its stages (Salim, 2003). The SLO concept can thus be a useful tool to evaluate the status of community-mine relations during the inception and operation of the mine.

Finally, the degradation imposed by mining activities implicates questions of rehabilitation and restoration, and mitigation measures which can be put in place following environmental degradation. Biodiversity offsets are a newer phenomenon and are closely related to HSM. In South Africa, these are neither mandatory nor specifically provided for in the law; however, several sectors are investigating the utilization of biodiversity offsets, including the environment, forestry, water, mining, and the municipal planning sector. These offsets are normally proposed as sustainable solutions, in trying to assist in the conservation of the affected region. They are intended as a measurable conservation outcome designed to compensate for adverse and unavoidable impacts of projects, in addition to prevention and mitigation measures already in place. However, Offsets have been criticized and are contested as many people believe they don't work. According to Huff and Orengo (2012), offsetting can be seen as a technology of ‘pacification’ in that people will be influenced to accept a mine/ development in their area. This kind of criticisms shows that there can be ways in which mining companies. Offsetting introduces forms of surveillance and accounting into the management valuation and social life of a landscape, as an offset is monitored continuously to ensure re-growth and management are prioritized. With all of this context in mind, I turn to the key concepts of the research.

## 1.6 Key concepts of the research

The mining company responsible for mining is an international company that came into the Fairbreeze area to extract as many minerals from the Earth's surface as possible. At the same time, this created social and environmental challenges, such as communities getting affected by the mine dust, and vegetation being removed as a result of making way for the mine. In this context, The Political Ecology (PE) field of study and associated concepts are important for the analysis of the Fairbreeze mine. The PE field has changed to become broader and to accommodate more discussions around environmental and social challenges including ozone depletion, depletion of global fisheries, species extinction, desertification, environmentally-related illnesses, acid rain, and the decline in air and water quality (Mwansa, 2016). According to Mwansa, the three spheres PE addresses, including humans, the environment, and the political component, all have a role to play regarding the benefits derived from an activity that utilizes natural resources within an environmental setting (Mwansa, 2016). Clearly pertinent to HSM, PE serves as the umbrella approach for research into Environmental Justice (EJ), and two more concepts of Social Licence to Operate (already touched on above) and pacification which are relevant to the findings.

As mentioned earlier in the chapter, an important concept that will be used is a social license to operate (SLO). The social license to operate is the mutual agreement that occurs between affected communities and the mining company. The SLO is an important concept regarding the argument of this research. SLO is the acceptance of the mine by the interested and affected parties, and its absence indicates weak social acceptance of mining activities. The SLO, or simply social license, can be defined as the acceptance of the mine operating in that area, most importantly, by the communities likely to be affected.

An SLO requires a good support system from all affected and interested parties (Kenton, 2019). It reflects a broader combination of increasing pressures on industry performance and societal acceptance of resource development and extraction operations (Moffat *et al.*, 2015, p. 477). The SLO term became popular after mining companies were questioned regarding the social and environmental impacts they bring about (Moffat *et al.*, 2015). The SLO concept will be applied in this thesis to characterize the social acceptability of mining at Fairbreeze, and how it evolved over time amongst different social groups.

Another key concept of the research as mentioned will be Pacification, which operates in contexts where an SLO may be contested. As Huff and Orenko (2020, p. 4) put it, pacification relates to activities and processes to assert control and stability in mining landscapes in ways which are indirect. To quote, "while direct forms of violence correspond to 'compulsory power', and indirect violence to 'institutional and structural power', pacification, though 'backed' through the exercise of other forms of violence, operates primarily through 'productive power' ensuring peace and stability". This indicates that pacification can operate as a form of power that is different from more coercive apartheid and colonial era processes of control, including displacement and marginalization, to mitigate opposition and facilitate mining development in more indirect ways (*idem.*).

From this perspective structures of order, such as those within mining environments, create and expand spaces and sites of pacification, not limited to spaces of liberal capitalism, colonialism, and the postcolonial aftermath” (Baron *et al.*, 2019, p. 6). This concept allows one to explore how efforts to reduce contestation and opposition to the mine operate within a broader historical context and as a form of power that operates through legal channels – in legislative and authorization processes, and the courts – and through indirect channels, such as through the provision of jobs and benefits, or through biodiversity offsets to smooth social and environmental concerns relating to mining operations in contested environments.

## **1.7 Thesis Structure and Argument**

The thesis will be divided into six chapters. I will firstly introduce extractivism and mining as a whole. I will then depict a background picture of the area Fairbreeze mine and close proximity. I will mention my aim and objectives as well as the research approach. There will also be a discussion on the background of the study. I will highlight the important concepts that serve as the main foundation of this research including the thesis structure and argument.

My second chapter is my literature review which is separated into four sections. The first section includes the theoretical overview and perspectives of extractivism. The second section includes sand mining, sand winning, and heavy sand mining. The section also includes the environmental and social impacts of HSM as well as environmentalism and contestation over extractivism. The third section includes the geography of extracting HSM on a continental and national scale as well as the regulatory processes of the operation. The fourth section consists of the study of political ecology which is the umbrella of the two important concepts of the thesis know as, of SLO and pacification. This section also includes the linkages the two concepts have with the study of political ecology.

Chapter three is my methodology chapter and consists of the introductory section of the chapter, the research design utilized in conducting fieldwork. A case study approach was adopted on the Fairbreeze mine. The chapter includes a case study approach adopted for the thesis the research techniques of the thesis have also been discussed to a certain level and the research instruments. These include questionnaires, key informant interviews, field observations, literature review, and document analysis. The sampling procedures will also be discussed as well as ethical considerations are also discussed and adhered to, as well as data analysis using the analytical framework. On a last note my positionality will also be mentioned.

Chapter four is the discussion of the Fairbreeze mine in a contested extractivist landscape. This chapter includes the discussion of the history and background of Natal where the extractive operations are taking place at the Fairbreeze mine. I will then include the timeline of Fairbreeze area as well as the discussion regarding the role players and stakeholder’s perspectives.

Another discussion includes the contestation over the Fairbreeze mine. This chapter will include graphs and tables which depict the community respondent's perspectives regarding the mine and the impacts it brought in their community and livelihood as a whole.

Chapter Five is the discussion and analysis chapter. The chapter includes the discussions of the changing relationship between the stakeholders and the mine. Those discussions include the benefits and disadvantages inclusive of a social and environmental element the HSM had on the local inhabitant near or in close proximity of the mine Fairbreeze. There is also a discussion on communication channels in and around the mine area and the two important concepts of the research SLO and pacification are also discussed and how their application can be linked to the Fairbreeze mine.

The final chapter is chapter six, which is the concluding chapter. There is a summarized element of the background, summary of the findings in relation to the aim and objectives of the study. There is also a discussion on how the two relevant concepts were utilized to answer the aim and objectives of the thesis. The discussion of the changing relationship between stakeholders around the mine as well as stakeholder's perceptions of the mine itself will be discussed as well. There will also be a discussion on the reported summarized impacts socially and environmentally regarding the mine at Fairbreeze. The summarized version of the thesis has been discussed, limitations of the research and suggestions for further research have been mentioned as well.

The argument that the research will substantiate is that there was a changing relationship between the mine and surrounding stakeholders, and that SLO and pacification can help to explain how and why this was the case. Initially there were high expectations for jobs on the part of rural communities, and hope that the mining activity and environmental damage could be prevented by the predominantly white residents of the nearby town Mthunzini. There was a weak SLO because the expectations didn't match the outcomes regarding the mine operation, which eventually lead to a protest action. In this context, however, there was a degree of pacification involved to diminish opposition in a racially divided landscape: both through successfully combating a form of 'environmentalism of the rich' in legal battles, and diminishing forms of 'environmentalism of the poor' through alignment with traditional authority and the offering of limited jobs and social development programs, despite opposition.

Four lessons are drawn from this research, with the first one being that sand mining in Fairbreeze, as in KZN and South Africa more broadly, is highly contested. The second one is that people's expectations of outcomes can differ. The third one is that power relations can affect decisions and outcomes, and lastly, there is always uncertainty about whether rehabilitation and sustainable initiatives and programs are successful.

## **1.8 Conclusion**

This chapter was divided into four sections. The first section introduced extractivism and the different kinds of it, sand mining, and heavy mineral sand (HMS) inclusive of the mining of minerals at Fairbreeze mine, as well as the research problem, the aim, and objectives of the study. The second section included the research approach of the study, the background of the study, the key concept of the research including the study of political ecology (PE), which served as an umbrella for the application of concepts of SLO, and pacification. The last section of the chapter included the thesis structure and argument.

The next chapter will include sand mining, sand winning, and extraction, and get into more specific detail in discussions on Heavy Sand Mining (HSM) and the geographies of HSM, which are global, continental, national, and provincial. The impacts associated with these activities will be included, giving relevance to the associated literature. This same chapter will also introduce the important concepts used in the thesis in more detail.

## **CHAPTER TWO: PERSPECTIVES ON EXTRACTIVISM AND HEAVY SAND MINING**

### **2.0 Introduction**

The pressure for goods and services has resulted in great demand for the extraction of minerals from the Earth's surface. Collier (2010) noted that forces of technological advancements, including the rise in the standard of living of third-world countries, had resulted in the demand for many necessities not limited to food. There is an expanding global demand for consumer goods derived from the so-called 'heavy minerals', which include ilmenite, rutile, and zircon. In a global context, the overuse of natural resources and the increased involvement of people at a global scale in the continual overuse of these resources has many environmental impacts (Collier, 2010). The growing demand for extractive environments drives the conflicts likely to occur, involving the protection of nature, including its functions such as carbon sequestration, and the natural use of the environment by people (Collier, 2010). This creates divisions or conflicts between mining companies and community members, governmental organizations, non-governmental organizations (NGOs), as well as with all those affected by the resource use surrounding them. For their part, mining houses, even at the large scale of most operations, are concerned about profit margins, which are limited by factors such as high energy costs, the availability of cheap labor, cheap or free water, heavy mineral sand transport challenges, and long distances from markets (Collier, 2010). There are multiple, sometimes contested approaches and understandings of its processes, social and economic impacts, and governance. There are also a range of studies that are pertinent to research on this topic.

The chapter will be divided into four different parts. The first part will discuss the paradigms of mining including the philosophical theoretical interpretations of mining and sand mining. The second section will discuss the types of sand mining, environmental and social impacts of heavy sand mining, some aspects of environmentalism and contestation over extractivism, geographies of sand mining on a continental and national scale and finally environmental regulation of sand mining in South Africa will also be mentioned. The third section of the chapter will discuss the study of Political Ecology and its relation to HSM and the two important concepts of the thesis SLO and pacification. Political ecology will be utilized as an umbrella field of study, which, draws on a range of two important concepts established as relevant to case studies on heavy sand mining and extractivism. The field of study PE and two relevant concepts have been used in discussing and answering the research questions. There were two key concepts used in the discussion of the research. They include the social license to operate (SLO) and Pacification. SLO as a concept accommodates the approval of mining by interested and affected parties. Pacification, by contrast, allows a conceptual engagement with contested mining contexts, where resistance is diminished or eliminated. These two concepts will capture the main argument of the thesis, as they will show the change in the perception of community members affected.

## 2.1 Perspectives on Extractivism

In this section, I will discuss extractivism, and differentiate it, as these orientations underpin the approach to the kind of mining landscape engaged in my research. I will also describe the most common type of extractivism in African countries, and why that is the case. The term extractivism is not a novel concept. Extractivism broadly refers to “those activities which remove large quantities of natural resources that are not locally processed (or processed only to a limited degree) but are used for export” (Acosta 2013, p. 62). Extractivism can get distinguished into three main elements. Firstly, the high volumes of resources which are extracted, secondly the massive environmental impacts, and lastly resources destined for export with little or no processing (Gudynas, 2013).

Under extractivism, the exploitation of natural resources can become a foundation for personal wealth, to the exclusion of interested and affected parties, and can therefore transform and depict the inequalities in our society. People can see the surrounding area as an opportunity they can use at the expense of communities located nearby. Extractivism is, therefore, a political and an environmental project, which can be both a social and an ecological problem (Wilson 2015). On the one hand, extractivism can bring about positive changes in the communities affected. The first benefit is the work opportunities that are open for the communities surrounding the mine. The other benefit is that the area of work receives infrastructural development, for example, roads are constructed for the mining company to travel in, and efficient electricity grids are built to ensure the work in progress is conducted successfully. However, communities can also suffer from the overuse of natural resources, which are expected to improve their social well-being (Gudynas 2013). The negative impacts of extractivism can easily outweigh and displace the benefits they provide (Willow, 2016). For instance, there are concerns that resources get exploited at a rate at which they cannot re-establish themselves (Hubber, 2014 & Bebbington *et al.*, 2007). Operations can also be detrimental to the environment (Hubber, 2014 & Gudynas 2013).

There are three different types of extractivism. The first type is depredating extractivism, which is currently the most common form and excludes social and environmental concerns. As activist author Naomi Klein sees it (Klein, 2015), such extractivism is rooted in the central fiction on which our economic model is based: that nature is limitless, that we will always be able to find more of what we need, and that if something runs out, it can be seamlessly replaced by another resource that we can endlessly extract (Willow, 2016, p.2). This type of extractivism can be harsh about obtaining what is needed to ensure that basic needs are met. Extractivism values natural resources about the profits they are capable of yielding. The second type of extractivism is cautious extractivism, which considers certain elements, including social and environmental standards, but will still be based on the economic basis of a country or region.

The third type of extractivism, as mentioned by Gudynas (2013), is known as indispensable extractivism and refers mainly to reduce the extraction of resources. The main aim of this type of extractivism is extracting as modestly as possible, supporting sustainable activities such as recycling, as well as ending pressure on ecosystems, and minimizing omissions (Hubber; 2014). I will touch on the first two of these types of extractivism below, and characterise South Africa adopted largely the neoliberal extractivist approach, though with tendencies towards neo-extractivism, despite some legislation which ostensibly supports a cautious extractivist stance.

### **2.1.1 Neo-extractivism**

Neo-extractivist when the government has more power in the extraction operation process and the nationalization of natural resources; the latter is used as an important criticism of neo-extractivist. Neo-extractivist is also when the state or government owns a great portion of the mining sector and can therefore exert control and have a powerful say, with regards to the way this sector is operated (Siegel 2016, Acosta 2010 & Hogenboom, 2012). The Intervention of the government is intended to promote economic opportunities in communities. According to Acosta (2010) and Gudynas (2013), when the government has a greater say in running these mining sectors, local economies are at an advantage, as the government will ensure that these local economies also gain economically.

Neo-extractivism is a system that promotes the demand for the extraction of minerals, under new rules of gaining independence and power (Hogenboom, 2012). Neo-extractivist, therefore, includes tough state regulation, higher state shares, and their redistribution, and includes government control and takeover of the natural resource wealth and Neo-extractivism is divided into four categories (Bremer & Johnston, 2009). The first one is revolutionary resource nationalism, which means top-down actions to shift ownership of natural resources, by forced transformation of existing contracts. The second category is economic resource nationalism, where the state increases its fiscal revenue in natural resource extraction. The third category is called legacy resource nationalism, where culturally and politically rooted support of resource nationalism exists. The last category is economic nationalism, which excludes major changes in existing contracts and regulations (Huber, 2014).

In the current situation, South Africa is not a neo-extractivist state, but the state retains significant power, and certainly, the importance of mining is evident in the capitalist state. The South African capitalist system itself came into full effect after the discovery of gold and diamonds. The discovery of diamonds in the 1800s around Kimberley enabled the British Empire to take charge of the rest of South Africa. This mineral revolution of the 1870s came to shape much of modern South Africa (Beinart *et al.*, 1986). Martin Legassick wrote that full capitalist control over the country occurred late in South Africa, unlike in other developed nations such as those in Europe and the US, as there was a transition period of imperialism (Bello, 2014).

During the later transition period into democracy in recent times, the ANC proposed that all mines be nationalized and the mineral rights be granted to the state, a proposal that could have seen Blacks and Coloureds reaping the benefits of mining, which they had not experienced as yet. However, the recommendation to transfer mining rights to the state has failed, as the mining companies have indicated that they are concerned that they would be forced to adhere to expropriation without compensation (Huizenga 2019). There are still certain elements that need urgent attention to ensure equity in the mining sector. After years of negotiation within the industry over legislation, which started with the Mineral Development Bill, which was promulgated in the Minerals and Petroleum Resources Development Bill (MPRDB), the state response was a skeleton of the initial vision of redistribution. Some of the royalty payments to local communities, Black Economic Empowerment schemes (BEE), mine-community partnerships, and social and labor plans, as requirements for mining companies to adhere to (Capps, 2012, Agnew & Oslender, 2016). The South African mining context today rather reflects a context of neoliberal resource extraction; to which I turn next.

### **2.1.2 Neoliberalism resource extraction**

Within neoliberalism, the role of the state is to create and preserve an institutional framework appropriate and applicable to neoliberal practices. The state has to guarantee, for example, the quality and integrity of money. It must also set up those military, defence, police, and legal structures and functions required to secure private property rights and to guarantee by force if need be, the proper functioning of markets (Harvey 2000). Additionally, if no markets exist in sectors such as land, water, education, health care, social security, or environmental pollution, they are expected to be ensured by the state. Beyond these tasks, the government departments must not change or disturb anything. State interventions in markets must be minimal as the state cannot have powers greater than market signals (Harvey 2004).

Neoliberalism should be perceived as related to discourses of freedom to some extent. “Neoliberalism might be perceived as a distinct ideology, descending from, but not identical to, liberalism ‘proper’. Under this interpretation, Neoliberalism would share some historical roots and some of the basic vocabulary with liberalism in general” (Thorsen & Lie 2007, p. 2). Neoliberalism can be considered as financial economic freedom enabling free markets. Although there is considerable debate as to the defining features of neoliberal thought and practice, it is related to the laissez-faire theory of economics. Neoliberalism is ostensibly related to sustainable economic growth, in terms of creating employment through green initiatives, as a way to improve the livelihoods of people (Smith 2008). This includes skills found within a framework and highlights freedom as its greatest priority, such as free markets and free trade.

“Neoliberalism is capitalist in nature, and state power is used, not in the interest of the people, but for that of capital” (Sebake 2017, p. 6). “Neoliberalism is deepening elitism in the society, due to access to means of production to shift state power to be dominated by interest groups, rather than the society as a whole” (Chomsky 1999, p. 9). Hallum (2010) & Heynen *et al.* (2007) both indicated that privatization and free market trading have taken over in the extractive industry and many places in the management of natural resources. Neoliberalization of nature consists of many factors and components, which include the biophysical control of nature as well as biodiversity regulation (Castree, 2008 & Birch *et al.*, 2010).

One of the most critical arguments made in PE concerns the neo-liberalization of the environment. Heynen *et al.*, (2007) have argued that neoliberalism has restructured the social and property relations governing nature, and ultimately allowed for its enclosure, privatization, and marketization. In developing nations for example, this has resulted in major environmental impacts such as the illegal logging of protected areas, the poaching of endangered species, increased corruption, and usurpation of indigenous lands (Knisel, 2019). South Africa has seen a shift away from nationalisation in mining, towards more neoliberal modes of operation. In the SA context, the primary focus is achieving 26% black ownership of mining operations to increase black participation in the industry. “BEE is enforced through a list of codes to measure company success in meeting affirmative action targets, and legislating that all mining companies meet ownership requirements as stipulated by regulations” (Capps 2012, p. 322; Tangri and Southhall 2008) (Huizenga, 2019). In places where we have operations of heavy sand mining, the protection of the environment and people must always take priority, but it is argued that in neoliberal extractivist arrangements these concerns are secondary to promoting the economic benefits of mining.

## **2.2 Types of sand mining**

This section will cover the demand for sand, sand mining and its different forms, and the environmental, economic, and social effects of the extraction of sand. Sand is a natural resource, and is the most common type of material used in construction globally (Musah, 2009). Sand can be produced through the process of crushing it; however, this analysis is more focused on the sand found along water environments, for example, rivers. Sand mining occurs in two different forms. The first form is in stream sand mining and the other one in floodplain mining.

The demand for sand has in recent times seen a huge increase. Sand is a result of rocks being eroded over some time (John 2009). Evidence of sand used as an aggregate material for different civil constructions dates back to ancient times (Maya and Padmalal, 2014). Egyptian pyramid blocks were a mixture of clay and sand, or a mixture of mud, lime, and sand (Dunn, 2016). Currently, sand remains in great demand in many industries. Sand is used in various materials used in construction such as cement and bricks sand also play a huge role in processes such as water filtration (Gavriletea 2017).

Sand mining occurs in both developed and developing nations. Sand mining occurs regularly in most rivers and floodplains across South Africa (Hayer & Irwin, 2008).

Sand is used for a range of projects, resulting in economic and social value to the lives of the communities involved. Sand mining and gravel extraction occur globally. Sand mining is the removal of sand from its natural source (Ashraf, 2011). Both developed and developing countries practice it. Sand and gravel are produced and processed industrially, for use in construction and industry all over the world. Some of the global leaders in processing sand and gravel include both developing and developed nations, such as the United States of America, Australia, Austria, Belgium, Brazil, India, Spain, Nigeria, Kenya, and South Africa (Draggan, 2008). Stream sand mining is normally associated with slabs in construction, while floodplain sand mining is associated with brick layering and plastering (Dacosta & Mathada, 2017). There are essential equipment and materials required for a sand mining operation. A person, who practices sand mining, requires equipment to use in the clearance of vegetation and to build roads within the site, machinery to extract the soil, and transportation to carry the sand. These activities can be conducted at a relatively small cost (Gondo *et al.*, 2019). The operation of sand mining is closely associated with environmental problems. Sand mining operations have environmental impacts regardless of their size (Musah, 2009). The mining of sand has ecological impacts associated with it (Ashraf *et al.* 2011). Environmental problems occur when sand is extracted at a greater rate than at which it can be replaced (Mattamana *et al*, 2013). The extraction of sand is a cheap procedure; so many companies are involved in these operations, not taking note of the detrimental results to the A few of the impacts of sand mining that affect the environment are the demolishment of habitats, decrease in the beauty of areas affected, and the modification of steams. (Hayer & Irwin, 2008). Moreover, sand mining activities that cover a large scale, have impacted greatly on natural vegetation (Stebbins 2006). The extraction of sand, which occurs in water environments such as rivers, streams, floodplains, and channels, also causes problems within those environments due to the heavy machinery used (Kori & Mthanda, 2012). However, sand mining has economic and social benefits. Sand has many uses (Ashraf, 2011). Sand mining is not the only process that affects the environment and people. Another activity related to sand mining is sand winning, which also impacts communities and the environment; hence it is my next point of discussion.

### **2.2.1 Sand Mining, Sand Winning and heavy Sand Mining (HSM)**

Sand winning is the collection and movement of sand and gravel, which are mainly utilized for the building of roads and buildings (Peprah, 2013). Sand winning refers to the collection and transportation of sand used in the construction field. Sand winning can also refer to the extraction of sand from the earth's surface for use in construction (Peprah, 2013), or. uncontrolled sand mining (Mensah, 1997). It results in land degradation, which affects the integrity of the soil in many aspects. Land degradation can be defined as the progressive reduction of the intrinsic quality of land or loss of biological, and/or economic productivity of land, resulting from natural and anthropogenic processes of environmental degradation (Peprah, 2013).

Sand winning has both positive and negative impacts. Some of the benefits of sand winning is that the resources extracted contribute to improved socioeconomic growth and development in some nations (Samani, 2019). On the other hand, sand winning has negative impacts on surrounding communities. Those include the destruction of the tree population, which immediately impacts the animals that are located within the vicinity of that natural environment. Peprah (2013) mentions that this immediately impacts the number of species that remain in that ecosystem. The sand-winning process severely destroys the roots of trees, making the tree population weak, which results in these trees falling during heavy storms. The topsoil also gets carried away, directly impacting the plants, ecosystems, and animals in the area, which depend on the soil nutrients and habitat to survive, for example, earthworms. The activity of sand winning can also result in burrowed pits, which get to be occupied by stagnant water, serving as a breeding ground for mosquitoes, and creating unhygienic conditions that sometimes prevent farmers from accessing their farms beyond that point.

Ecosystems and natural habitats are also greatly affected, in that many trees get removed in these areas, increasing global warming and climate change impacts. Another negative impact is that the nutrition value of the area decreases since farmers have limited land to use to produce for themselves, their families, and their communities (Tagoe, 2004). Communities are therefore negatively affected by sand winning. The health impacts, as a result of sand winning happening near communities, included Malaria, skin disease, and diarrhoea (Tagoe, 2004). The decrease in nutrition directly impacts the education of children, as they get less food to eat; therefore, their class progress suffers, directly affecting their marks. (Tagoe, 2004).

However, sand mining and sand winning are less severe operations compared to heavy sand mining. Mining of heavy-density minerals is known as heavy sand mining (HSM). The economic components found in excavated sand are rutile, ilmenite, leucoxene, and zircon. These minerals contribute greatly to the production of titanium, which is mostly used in the paint industry. Other elements of titanium are also used in industries such as welding (Garnar and Stanaway, 1994). The mineral zircon is used in the production of stoneware, toothpaste, and polish (AME Mineral Economics, 1994). Presently, most HSM-affected countries are protected through laws and regulations. (Morley, 1982). The first step when any mining is to take place is the clearing of the land, which leaves the rest of the soil exposed and leads to the degradation of the vegetation. Mining is an ongoing operation that always moves from mined land to unmined areas, such as isolated rural areas (Namakwa Sands, 2008). HSM has occurred in South Africa for many years and includes areas such as Richards Bay and Namakwa Sands, near the Western Cape (Namakwa Sands, 2008). It has been acknowledged that HSM has challenges to review policies and align with the global concern for managing environmental impacts associated with mining industries in general (Hassan & Ibrahim 2012; Warhurst 2001).

## 2.3 Environmental Impacts of Heavy Sand Mining

One challenging aspect of the activity of HSM is related to habitats and the biodiversity surrounding some sensitive areas. Different areas are affected environmentally by sand mining practices. For instance, HSM has affected soil environments, as well as vegetation and soil quality (Mucina *et al.*, 2006). Kuttipuran (2006) noted that the destruction and loss of vegetation is normal in many Indian rivers. Heavy sand mining produces great disturbances due to the creation of road access in floodplains, and the destruction of aquatic habitats through dredging and the use of mechanical diggers. Other negative impacts relating to habitats include the destruction of forests, also known as deforestation, for wildlife species, as they require a specific habitat to ensure their long-term survival (Stebbins, 2006). The species located in water environments made their livelihoods there before people came to extract sand in their habitats, so the extraction of sand can affect the systems which operate in these environments.

Strip mining greatly affects and destroys natural ecosystems covering a vast area, since vegetation is removed from the soil. Mucina *et al.* (2006) mentioned that a mining project at Namakwa Sands in the Western Cape poses great environmental risks, as it greatly impacts the food chains and systems since vegetation and topsoil are removed. Regarding the area being discussed, Namaqualand is at a great disadvantage since the area is dry, and therefore any rehabilitation measures take a prolonged period. Relatedly, a study carried out by Saviour (2013), showed an unauthorized sand mining activity occurred in the riverbed of the Papuan catchment area in Karnataka in India; this led to environmental issues, including the diminishing water table, which directly impacted the two villages located on the bank of the river, spread across both Andhra Pradesh and Karnataka regions. Environmental challenges associated with mining have been significant as a result of the rich biodiversity of the area. According to Mensah *et al.* (2015), an area known as Prestea was one of the affected communities in Ghana, and the increased mining operations resulted in the contamination of great bodies of water. The result of this has been the deaths of water species, destruction of the biodiversity in these environments, removal of vegetation, erosion of soil resources, and the loss of farmlands of communities nearby, as high levels of arsenic and antimony concentrations were found there (Mensah *et al.*, 2015).

It is overly simplistic to portray the likely impacts of mining as entirely negative. In some instances, mining operations have effectively created conservation zones and, as such, offset some of their negative impacts. Mining has the potential to drive the development process in ways that might contribute to nature conservation (Edwards *et al.* (2014). Several large-scale mining projects such as the Mbalam iron ore mine adjacent to the Dja World Heritage site in Cameroon, now include provisions for biodiversity set-asides, which would protect rare forest mammals (Reed and Miranda, 2007).

Elsewhere in Africa, the Sperrgebiet area in southwest Namibia, an arid hotspot of biodiversity, was completely off-limits to local resource extractors because of claims on alluvial diamond deposits and has since been designated as a protected area. Such set-asides and exclusion zones, are intended to try to balance resource extraction with conservation, particularly in endemic-rich locales that lack formal protection. However, Huff and Orenge (2020) have cautioned that these can also exacerbate marginalization and fail to compensate for environmental damage. The next section will focus on these social impacts, using two KZN case studies to give relevance to this theme.

## **2.4 Social Impacts of Heavy Sand Mining**

The creation of employment opportunities, once a mine starts operating in the area, is the greatest contributor to communities accepting the mine. There can be other advantages such as improved infrastructure and development in that affected area. There are also disadvantages that I will mention in this section that greatly affect my communities. This section will first broadly speak regarding the benefits of sand mining has on communities starting from an African perspective right up to the provincial perspective of impacts that affect people in mine operating areas.

Employment plays a major role in mine operating areas, as indicated by the four case studies mentioned next. The creation of job opportunities in mine-affected areas is an advantage. Several authors agree that sand mining has brought a positive impact in terms of employment opportunities to areas affected (Saviour, 2012; Mwangi, 2007; Mbaiwa, 2008; Lupande, 2012, Mngeni *et al.*, 2017). By the year 2001 alone, Nigeria had seen a slight increase in sand and gravel mining, with the creation of job opportunities from sand mining (Lawal, 2011). A similar case is happening in Kenya regarding the creation of job opportunities for communities near mining operations, with young being included among the workers. Botswana has also seen a similar case in the rise of job opportunities for the communities affected (Mbaiwa 2008). In Zimbabwe, Lupande (2012) indicates that the creation of employment is a great priority in mine-operating communities. Mngeni *et al.* (2017) carried out some research to show how heavy sand mining has become an industry with economic opportunities, by providing jobs. The study revealed that commercial activities have assisted communities to improve their livelihoods, therefore making it a great challenge to stop the operation.

The two main contributing factors of the extraction operations in attracting employees are unemployment and hunger. Mngeni *et al.* (2017) mentioned that communities along the Wild Coast of South Africa that they spoke to indicated that they support the extractive process as it provides them with income; as a result, their economic situation has improved, as well as other community upliftment programs, such as a community hall which was built.

Mining operations bring social advantages as well. Some of the initiatives mining companies have implemented in mining-affected areas are infrastructural improvements, which include the construction of an access road, community buildings, and schools, based near the affected area. Jenkins & Obara (2008) state that some other initiatives are the prioritization of health facilities and equipment within affected communities. A foundation that involves the community can also be considered one of the positive initiatives mining companies can provide to affected communities. An example of money-saving initiatives could be that the mine operation initiates a great saving initiative for the affected community, which can potentially also attract external investors. The support of small entrepreneurs can be boosted by the mine, being the sole provider to the entrepreneurs. The green economy's livelihoods initiatives aim to decrease communities' dependency on mines and at the same time promote green sustainable jobs (Jenkins & Obara, 2008).

As much as there has been a positive boom in so far as employment, there have also been some negative social impacts from the HSM operations. The farming lands of families and small businesses are at risk, and pollution also affects their livestock (Berry, 2015). Graveyards can also get displaced, thus affecting families in a major way, as ancestors remain respected in many cultures by those families who remain on Earth. Menne (2013) also points out that the mining projects have led to unrest within communities, even resulting in deaths in some cases. Mining areas have affected communities, through the disturbance of their cultural beliefs. There has been destruction and removal of subsistence or commercial farming, where communities were planting and farming for survival purposes (Berry, 2015). There are also health impacts that sand mining operations impose on surrounding communities. Most of the air pollution created through sand mining usually affects communities that are at a short distance from the mines; locally, the extraction of heavy sand produces noise, light, and dust pollution, which affect the health and mental states of people living near to, or working at the mine (Menne, 2013). Communities close by can also be exposed to radiation emitted by the thorium contained in monazite which is part of the heavy mineral concentrate and is normally transported to the smelters in very large steel trucks. According to Ghose & Majee (2000), the greatest challenge regarding air quality in mining is dust particles. The collection of dust in communities is a major issue in that the health impacts on communities are pronounced, leading to illnesses such as asthma and other lung-related problems (Ghose & Majee 2000). Finally, the deep holes left after excavation are a great threat to communities, especially children, who are likely to fall inside them while playing.

The Namakwa Sands mine in the western part of South Africa and involves heavy mineral mining and shows it can be achieved with a degree of Social Licence to Operate (SLO). The mine is based in Brand-se-Baai, which is approximately 385km north of Cape Town. It is divided into two sections, known as the east and the west areas of the mine, where opencast strip mining operations include the extraction of concentrations of heavy mineral sands, such as zircon, rutile, and ilmenite (Gous, 2006). The relevant legislation affecting both the communities and ecosystems nearby was followed and adhered to.

There were social impact assessments done, which included gender impact assessments, based on participatory processes that were therefore conducted successfully. Environmental impact assessments and ongoing monitoring were successfully conducted. Stakeholder engagement plans based on stakeholder mapping, were also completed well. Broad-based local community consultation committees and other employee representation bodies to deal with impacts were also formed. Lastly, formal local community grievance processes were successfully done (Global Reporting Initiative Report, 2016). This, therefore, indicates that social and environmental aspects were conducted successfully and satisfactorily, with stakeholders involved in decision-making and plans. As per the argument in the SLO of the communities mentioned above indicate that relevant parties are included in the planning phases of the mining leaving a very small room for disappointment. In such mining cases, the communities do benefit from the mine operations but in other mining cases communities who were hoping for jobs and improved livelihood are sometimes excluded and left disappointed when jobs are given to certain individuals, and most community members are excluded from the benefits of the mine. I now turn to such instances where contestation over mining is prevalent.

## **2.5 Environmentalism and contestation over extractivism**

There has been significant opposition against extractivism in the form of environmental and environmental justice movements. The debate over wages is mostly responsible for protests in the mining sector. The mining inequalities in South Africa have been brought to attention in recent years. The unfortunate incident of 34 people who unfortunately passed away at the Lonmin mine in Marikana in 2012 was related to a dispute over the dismal wages miners received in comparison to the great profits made by the mining company; widespread wildcat strikes based on demands for better pay (Herskovitz, 2012); and the recurrent discussion about nationalization, aimed at ensuring that the country reaps better rewards from its mineral riches (Shivambu, 2010; Du Plessis, 2011).

There have been massive movements created to be the voice of mine-affected communities. The concerns of wages and debates related to nationalization, along with an increase in the extent and scale of extractive industries that have been described as amazing (Sibaud, 2012), have led to growth in the importance of civil society movements, which are increasingly globalizing and teaming up with affected local communities. Together they are challenging mining corporations and mining operations to the core (Kapelus, 2002; DMR, 2009).

An Environmental Justice approach highlights the importance of equality among communities. Environmental justice is the recognition of inequality among people related to costs and benefits distribution, meaning that the concept is a call for equality.

Fair treatment means that no population, due to policy or economic disempowerment, is forced to bear an appropriate share of the negative human health or environmental impacts of pollution or environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local and tribal programs and policies (Mohai *et al.*, 2010).

Environmentalism can be described as a social movement or ideology focused on the protection of the environment. Environmentalism aims to protect and conserve the elements of the Earth system, including water, air, land, animals, and plants, along with extensive habitats such as rainforests, deserts, and oceans. Environmentalism is aimed at protecting the environment in a sustainable approach. It is a different way of thinking in which people try to care more about the planet and the long-term survival of life on Earth. It means recognizing the planet's environmental problems and coming up with solutions individually and collectively (Woodford, 2021). Environmentalism aims to protect the environment sustainably (Woodford, 2021 & Lovelady 2012). Protests associated with pollution and the protection of natural resources have occurred since the late nineteenth century (Rome, 2003). Different kinds of environmentalism have been distinguished across class lines.

The environmentalism of the poor is a term used in situations where poorer communities are associated with efforts to maintain or protect environmental systems. Such examples include social justice claims, including poorer communities who are fighting their current government and includes impoverished populations struggling against the state or private companies that plan to threaten aspects of their lives and livelihoods. An important element to consider as to why the environmentalism of the poor is gaining importance and why it might be such an effective force is gender. Martinez-Alier (2002) states that women play a more important role regarding the environment, than men do, since they are in connection with the environment daily, especially in rural areas. The duties that connect nature and humankind are normally carried out by women. As a result, they are often the main actors in environmental conflicts, as they have a greater connection to the environment than men (Martinez- Alier, 2002). On the other hand, Organisations and initiatives are formed as a result of the challenge of depleting natural resources, by the richer portion of the population. The middle class, however, normally aims to correct the negative impacts which fall on natural resources, such as land and water (Maritinez- Allier, 2002).

The 'environmentalism of the rich' is aligned with changes in rules, regulations, and policies to their advantage. This type of environmentalism is based on how the owners of natural resources make sure to influence their use of these, through intensive planning related to the ecosystems, and through designating other areas as naturally protected areas. The environmentalism of the rich aims to prioritize the rich people through initiatives such as cleaner technologies, organic food production, conservation adoption strategies, and mitigating environmental destruction without preventing the accumulation of capitalist growth (Garcia *et al.*, 2012).

Finally, the environmentalism of the rich shares the same sentiments as consumers without questioning its socio-ecological basis; it has an enormous dependence on the resources from other countries in the globe (Guha & Martinez-Allier, 1997). Both forms of environmentalism will be relevant to the research. Extractivism is contested because there are impacts that are social and environmental associated with the extraction of the landscape which is what leads to protests and disputes between communities.

Environmentalism and extractivism are closely related because on one side of things you get environmental organizations that want to protect the environment from extraction while on the other hand, you get traditional leaders and the mine who want to extract the earth's surface no matter what extent the damage will be. When different protest and environmental movement are applied there can be contestation over mining, and the case of Xolobeni is an example. As previously mentioned in the early sections of the chapter, the Xolobeni mining project was greatly contested to avoid its commencement in the Eastern Cape. This project can be considered an environmental justice example in a South African context. Washinyira (2016) noted that the Xolobeni area falls within an ecologically sensitive stretch of the coastline, and would therefore have devastating impacts if the proposed project were to be successful. The dispute has been going on for over a decade now; with some people believing that the Xolobeni area needs this type of development to uplift their community, while others are totally against the mining project, explaining that only trouble will follow, once the mining operation starts on their ancestral land. According to Washinyira (2016), the residents of the area who are against the mining project, have blocked the required Environmental Impact Assessment for the project to start. There have also been episodes of intimidation and violence towards the people who are against the mining project, with even some deaths. For example, in 2003, Mandoda, Ndovela, and Radebe were shot dead after criticizing the dune mining at Xolobeni. The proposed project affected the community and people at large; the next discussion will look at these impacts. There were social impacts related to the mining project in the Xolobeni area. For instance, there were disputes and contestations among communities. According to Gqada (2011), some of the obvious debates that erupted were that the people in the area would not trade off their ancestral land for development. The community refused to be moved to alternative locations, leaving graves, memories, and their land behind, which had been part of their lives and history for a long time. They valued their ancestors much more than the mining project that was being forced on them. According to Gqada (2011), most people spoke to believe that there had been a lack of correspondence between the extractive industry and locals, which resulted in communication gaps between the mining company and affected communities. Many people in the area also believed that they weren't fully involved in the talks related to this proposed mining operation, which therefore implies their views and opinions were ignored in many cases (Gqada, 2011).

## 2.6 The Geography of Extractivism and Heavy Sand Mining

Soil mining and gravel extraction are common activities occurring all over the globe. Mining can be seen as an inherently geographic problem since sand, like elements created by geological processes, is unevenly distributed across the Earth (Cicin-Sain & Knecht, 1998). The concentrations of these elements that are considered important by society are often located in secluded areas, far away from where they can be refined or will be incorporated into manufactured items. This issue remains one of the greatest challenges for geographers, as they have been assigned to identify the locations of these resources (Cicin-Sain & Knecht, 1998).

HSM occurs globally in most countries and affects both developed and developing nations. In developed countries, rehabilitation occurs once sand mining is done, but Nguru (2007) mentions that developing countries still face major difficulty with rehabilitation measures. HSM is associated with unequal distribution of wealth. These inequalities have escalated at a global level, with questions being increasingly raised over the past two decades about the environmental and social impacts of mining on local communities; moreover, questions are raised over what contingency plans are put in place to avoid or decrease them, both in developing and developed countries, such as Canada and Australia (Veiga *et al.*, 2001; Hilson, 2002; Kapelus, 2002; Altman, 2009). Sand mining has been occurring in the USA since the 1920s and many states relied on sand extraction to meet their building needs (Schaetzl 1990), The demand for sand and gravel has increased from 2008 up to the present. Sand and gravel are in the highest demand compared to other minerals in most states in America. Sand is easily accessible in developing nations, which is leading to the challenge of exploitation of natural resources (Draggan, 2008). The reason for that is that they have rich deposits in combination with being technologically equipped to successfully mine the product. Some metals are produced more than others including iron, copper, nickel, zinc, and lead. These metals which are in demand are mined mainly by big global mining companies. Coal on the other hand is also extracted mainly within countries for household consumption and energy production. Poorly regulated sand mining activities have caused problems in coastal environments in developing countries around the world. In Sri Lanka for example, the mining of construction sand mainly takes place at river mouths and in coastal dunes, and results in a serious resource use conflict between sand miners and local fishermen (Cicin-Sain & Knecht, 1998). Israel is running out of sand as a result of decades of poor sand regulation for construction (Soares *et al.*, 1998). Sand mining has destroyed dune habitats along Israel's southern Mediterranean coast. The next section will focus on the geographical specifics of HSM in Africa.

### 2.6.1 The Geography of Extraction and Heavy Sand Mining in Africa

In recent years the mining industry has begun to boom in Africa. There are many areas on the African continent where sand mining has occurred. The section below will discuss certain studies which have been carried out in African countries. I will also mention the positive and negative sides of extraction.

According to Lupande (2012), sand mining is a new kind of operation in Zimbabwe. The country has received a major upgrade of buildings and renovations in Harare, and surrounding areas, since 2009, when they started to use the dollar in the country. This, therefore, resulted in small groups of young people working closely together to mine near their homes. Bedford trucks were hired for assistance to transport the sand into the city and residential areas. HSM has also occurred in Botswana. The level of corruption in Botswana is high as some sand mining activities occur without the correct legislation (Mbaiwa, 2008). Communities have had an outcry, even protesting about the massive amount of sand being mined in their area (Mbaiwa 2008 and Mwangi 2007). In Botswana, policies have been created to assist with the battle around heavy sand mining impacts. According to Mbaiwa (2008), Botswana is reliant on minerals extracted, including diamond, gold, and nickel, to sustain the economy. HSM has also resulted in positive impacts in Lome, and Togo. A study in Togo highlighted the social and economic impacts of sand and gravel mining, with the conclusion being that the quarrying department was very closely linked to agriculture, which is the area that provides the most rural employment (Ayengabo *et al.*, 2011). The quarrying industry was responsible for job opportunities ranging from high-profile work such as managing workers to truck drivers; as a result, the extraction of sand and gravel has increased employment opportunities for the youth, leading to an improvement in livelihoods. The money received is used to sustain poverty-stricken livelihoods. This supports the findings by Mbaiwa (2008) and Mwangi (2007), that there was resistance to mine operations, as well as those by Ayengabo *et al.*, (2011) which indicated the positive impacts of sand extraction, such as employment opportunities. Finally, Aromolaran (2012) investigated the extraction of sand in Nigeria. People in the affected area supported the idea of an economic boom but were also greatly concerned about the impacts thereafter. An investigation was conducted in the Machakos district of Kenya and indicated that the demand for sand has increased in recent times as a result of construction companies' demand for it (Wachira 2009 & Mwangi 2007).

An important case study relevant to this research engages an Ilmenite mine located in southeast Madagascar. The mine initially indicated that they had involved all relevant stakeholders about their Social License to operate. However, the mine had adversely affected social and environmental livelihoods since its operations began (Huff and Orengo, 2020). The mine has benefited some people to a certain level but many remain underprivileged socially and environmentally. The mine has been greatly criticized for violating basic rights, exclusions, violence, and acquiring double land grabs, where a portion would be utilized for mining while the other area would be used for biodiversity offsetting (Huff and Orengo, 2020). The authors characterize this as a double land grab, which comes as a disadvantage causing an economic and physical setback to nearby farmers, pastoralists, and fishers in and around the area (Kill and Franchi, 2016, Lawal 2011).

Moreover, Huff and Orengo (2020) stipulate that a form of pacification is at work, working to undermine and further marginalize opposition to the mine and the rural livelihoods of adjacent residents. I will return to this theme later in the chapter.

The above indicates that in African nations we find that sand mining has brought about some positive impacts. But that sand extraction brings about negative impacts and perpetuates marginalization. The studies carried out in Nigeria by Lawal (2011) and in Kenya by Wachira 2009 & Mwangi (2007), both confirm the negative impacts highlighted as being massive challenges. Although HSM occurs globally and on a continental scale, and is embedded in transnational networks, it also occurs locally in South Africa, and the next section will focus on South African cases.

### 2.6.2 The Geography of Extractivism and heavy Sand Mining in South Africa

Mining and its unparalleled influence on the South African economy began with the discovery of the Eureka Diamond in 1867. But it was the discovery of a rich seam of gold in 1886 on the Rand that turned the South African economy from a largely agricultural base, to become the richest gold mining area in the world within a decade (Philipps, 2015). The South African mining sector conducts mine operations for a variety of minerals, which can be linked to minerals mined globally. Mining is the being South Africa’s greatest economic booster including reserves such as 87.7 percent of the world’s platinum-group metals, manganese (80 percent), chromium (72.4%), gold (40.1 percent), and alumina-silicates (34.4 per cent)” (DME 2006a, p.7).

The table below details four mining case studies in Kwazulu-Natal, where coal and titanium are prominent. The common themes from these cases indicated that the SLO was weak. The other common theme is that there are active NGOs and environmental groups in the two proposed mines and two mines which play an essential role in assisting communities to fight the mining giants. The third common theme is that the landscapes the mines occur in are contested.

<b>Name of the mine</b>	<b>Location</b>	<b>Local social Impacts</b>	<b>Key Characteristics</b>	<b>Social acceptance of the mine</b>	<b>Overcome of resistance</b>
Fuleni prospective mine	Northern KZN on the southern border of the Hluhluwe IMfolozi Park	There was significant resistance from environmental organizations against the	A rural setting under TA authority near a world heritage site. Amakhosi and izinduna control the land. There were	There was a weak social acceptance of the prospective mine, as communities and NGOs vehemently	Yes

		initiation of the mine, and protest action.	networks within I&A parties that mobilised to prevent the mine operation.	opposed mining impacts and the consenting process.	
Somkhele mine	Northern KZN in uMkhanyakude district, near Mtubatuba area	People's houses were cracking, the removal of gravesites, noise and dust pollution.	A rural area, near a world heritage site and game reserve. Under TA rule and authority. The community and authorities had a weak relationship	There was a weak Social acceptance of the mine for this mine protests and courts hearings were evident. The expansion of the mine is currently contested.	No
St Lucia prospective mine	Northern KZN eastern shores	Numerous petitions were being signed, massive support from environmental organizations.	The mine was proposed near a world heritage site and game reserve. Under a TA rule. There was massive support in opposing the mine project, indicating a positive relationship between interested parties.	There was a weak Social acceptance of this prospective mine. That can be associated with protests an outrage in relation to mining commencing in the area and an extended 'battle for St Lucia' that ended with a victory for environmentalists.	No
Kliprand mine	Northern Kwa-Zulu Natal, Danhauser,	The disturbance of gravesites, noise, loss of farmlands and stock.	A rural subsistence farming context. Under traditional authority. There was weak communication between I&A parties.	There was a weak SLO for this mine operation, as there were protests and community complains regarding its operations.	No

Table 4.1 showing the two mines and two prospective mines in KZN, and the SLO application in each

The proposed mining in Fuleni received a lot of criticism, according to the Environmental Justice Atlas (EJA, 2016). The opposition to the proposed Ibutho coal mine, which was the mine proposing to operate in the Fuleni area and had been going on for years. The residents in Fuleni were against the proposed mine, as the likely impacts on the heritage of the area included the IMfolozi Nature Reserve and on livelihoods, affecting crop and livestock farming, water, and health. Community-based organizations (CBO), NGOs, and I&A parties fought a great battle with the mining company and were divided at the end as to whether the mine should commence or be halted. As time progressed, there came to be an understanding between the affected communities and traditional leaders. There is speculation that a tribal leader has already given the company the go-ahead (Jolly, 2015). Leonard (2018), Jolly (2015), and Shongwe (2018) agree that traditional leaders take the major decisions, and this can influence whether a mine commences or not.

Regarding the Somkhele mine, the community members were not in support of the mine operating in their area. In November 2014, members of the local Mpukanyoni community took to the streets in protest against the mine. The protesting members headed to the mine and submitted their concerns or worries to the company CEO (Jolly, 2014). Protests were a result of social and environmental challenges from the mine and court cases against the mine's expansion continue.

Moreover, the Kliprand mine, affected gravesites and the community was not happy regarding that. The mining company and communities had disputes, which sometimes resulted in protests. Some community members were worried about the stability of their homes as their houses had started cracking as a result of the blasting at the mines (Langa, 2021). The prospective St Lucia mine also received massive opposition. The different environmental movements that protested against the proposed mine included the Wildlife Society (now WESSA), the Save St Lucia Campaign, the Zululand Environmental Alliance, and the St Lucia Action Group (Bennie, 2010). The St Lucia Prospect mine battle indicated how contested the northern KZN landscape is, and how hard the battle became, between the mining company and opposing forces the community members, and environmental companies.

Moving to sand mining specifically, HSM has affected communities in South Africa greatly. Mining is one of the sectors which have resulted in economic wealth in South Africa, but has a contested history given the relationship towards workers that were used and paid low wages, yet who also contributed to the mineral industry in South Africa (Terblanche, 2002). In addition to the history of exploiting people and paying them small salaries, mining companies in South Africa have disregarded the social impacts of their mining operations, which are surrounded by communities close by and at large. Most HSM operations are based in rural areas or conservation priority areas (Duda, 2017; Leonard & Leogang, 2017; Leonard, 2016); some of the biggest mines that contribute to economic growth, are based on traditionally-owned land known as former Bantustans, belonging to traditional communities and governed by customary law (Pickering & Nyapisi, 2017; Bench Marks Foundation, 2016).

Communities remain the most impacted members of society when it comes to heavy sand mining (Forest & Loate; 2018; Matebisi & Marais, 2018; Leonard, 2017; Branson, 2016). Compensation to affected communities has been existent but very weak, notwithstanding the argument that these costs are largely outweighed by economic benefits.

HSM activities have an impact on riverine ecosystems in South Africa. Many of the operations along the Nzhelele River in Limpopo are illegal and need strict environmental legislation to control (Kusimu, 2014), While there are Wolkersdorfer *et al.* (2017) are environmental and social impacts that affect ecosystems and communities in the area (Wolkersdorfer *et al.*, 2017). The Cape Floristic Region (CFR) is an important area that is rich in species of flora. Heavy sand mining resulted in great environmental impacts, which harmed the natural environments, as well as the species in these places (Hayer & Irwin 2008). Davey (2001) highlighted the importance of the CFR region, which includes the area having a great variety of plant species and therefore needs extreme attention to sustainably protect them.

HSM operations in KwaZulu-Natal have impacted people and surrounding ecosystems an example of this is Richards Bay Minerals (RBM), which built a dredger and concentrator across the Nhlabane estuary in 1993, to allow for physical crossing, along with two berm walls (Vivier & Cyprus 1999). These changes, including the large amounts of water that RBM took from the lake for its operations, not only changed the ecological functioning of Lake Nhlabane but also had impacts on livelihoods. The local fisheries in KwaMbonambi, for example, believe that the number of fish in the lake has declined, and with it a means of feeding the fishermen and their families (Mbonambi Fisheries focus group, February 2010). The introduction of a mining operation near the communities of Sokhulu and KwaMbonambi indicates a continued process of the dispossession of people's ancestral land. Despite people's hopes of returning to their indigenous land, Richards Bay Minerals (RBM) commenced its mining at KwaMbonambi in 1976, without the knowledge or consent of the wider percentage of the community (Sokhulu Fisher's focus groups, February 2010). RBM mining activities in KwaMbonambi continued to encroach northwards, reaching the coast of Sokhulu in 2004. RBM's current operations occur just north of Richards Bay, in a strip of mineral-rich dunes, two kilometres wide and 17 kilometers long. The mining is done using dredgers, which burrow into the dunes, and in turn collapse into artificially created freshwater ponds.

There has also been an economic boom related to HSM, with local job creation, but also negative environmental impacts. The Richards Bay Minerals' social investment initiatives have benefited the surrounding areas. The company employs 2100 permanent staff and 2000 contractors in various positions, providing jobs, training, and the improvement of livelihoods for the local population, while also building skills, and developing a sense of community and achievement of reference (Mintek, 2007). The mining activity has created significant economic benefits for its shareholders, generating some R8 billion per annum; it has also created around 1800 jobs that are reserved for skilled employees, usually outside of the host communities.

Meanwhile, about 700 jobs are held by inhabitants of Sokhulu and KwaMbonambi communities (Mintek, 2007). The only problem with the jobs provided to the affected communities is that they are short-term employment opportunities and end quickly, leaving the communities' hopes and dreams shattered.

The other disadvantage of the environment is that forest destruction has not only had dramatic impacts on biodiversity and ecological functions, but it has also had significant health and social impacts on the affected communities. Many estuaries in northern KZN have been under the threat of HSM activities. Some estuaries in KwaZulu-Natal have already been placed under severe pressure, and the disruption of food webs and communities by physical disturbances is not something that estuarine biota can adapt to, nor can it be easily mitigated. Demetriades (2007) mentioned that, for this reason, it is recommended that authorities seriously consider the prevention of sand mining within estuarine boundaries. An example of a sand-mined estuary is the Thukela estuary, where there is one very small localized operation on the north bank of the river. Although the operation is small, it has cleared important stabilizing riparian vegetation and created a potential erosion zone.

Forbes and Demetriades (2000) mentioned that this river and estuary is a likely target for future sand mining applications, as there are many large sand banks present. The river is an important source of sand for prograding, and this function may be threatened by two proposed new large dams (Forbes and Demetriades 2000). Another Kwa-Zulu-Natal estuary where sand mining is taking place is the Umvoti estuary. There are about 8-10 operations as per GPS coordinates. Some of these operations has a separate road to the river stretch, thus increasing negative impacts associated with heavy vehicles and machinery on the floodplain. HSM there also has negative impacts on affected communities. The next section will discuss the study of political ecology and its relevance to heavy sand mining. HSM is associated with social, environmental, and economic impacts; the next discussion focuses on the environmental impacts.

## **2.7 Environmental Regulation of Sand Mining in South Africa**

The extraction of sand in South Africa is governed by legislation. The laws related to sand mining are complicated and have been categorized into three main elements known as mineral regulation, environmental regulation, and land use planning regulation (Green 2012). Regarding the first theme, sand can be considered as a mineral resource hence its extraction must undergo a regulatory path to avoid the exploitation of the resource (Green 2012). The second part of the regulation states that the extraction of soil is likely to impact the environment negatively, which results in environmental regulation. The final part states that "Heavy sand mining involves the use of land and is, therefore, subject to land use planning regimes, which includes land use planning regulation" (Green 2012, p. 20).

The environmental impacts resulting from mining and sand mining have resulted in major disputes between responsible regulating authorities. There are three main bodies related to the environmental regulation of sand mining. These major stakeholders include The Department of Mineral Resources, the Department of Environmental Affairs, and the Department of Water Affairs (Green, 2012). The mineral sector is heading toward a sustainable approach to conducting mining operations. The changes will apply to areas such as political restructuring, economic change, social and cultural improvements, supply and demand, changing perception of the public regarding mining, and highlighting the importance of the concept of ‘sustainable development’; all of these will play a major role in assessing regulatory frameworks related to mining globally (Davey, 2001). The next subtopic discusses NEMA, the most important environmental legislation related to protecting the environment.

The National Environmental Management Act (NEMA) focuses on ensuring that interested and affected parties adhere to environmental legislation. NEMA is a framework that stipulates environmental proceedings set out in the constitution. As indicated by Elliot (2014) the principles in (NEMA) apply to actions of all stakeholders and organs of the state which are likely to impact the environment “The principles form the main component against which the requirements of NEMA, and other environmental-related laws associated with the protection and management of the environment, must be analyzed and interpreted” (Elliot 2014, p. 41). Environmental management methods are not defined in NEMA; however, NEMA does list several environmental management instruments which can be utilized to implement IEM, ranging from strategic to spatial and site-specific instruments and processes, which include EIAs. Again, as with the provisions discussed above, S24 of NEMA does not openly refer to biodiversity offsets. S24 (1) of NEMA stipulates that the potential impacts likely to be caused by triggering the listed activities have to be noted, and the relevant authority must be notified.

The EIA regulatory framework in terms of S24 of NEMA, is the established legal instrument to apply Integrated Environmental Management (IEM) and the environmental right at the project such, it is the instrument in place to ensure no net loss of biodiversity occurs, and the gaining of public trust (Elliott, 2014). The EIA regulations are, furthermore, the mechanism that the environmental sector is currently utilizing to implement biodiversity offsets. S24 (1) of the NEMA environmental legislation stipulates that potential impacts on the environment and other impacts must be reported to the competent authority. The S24 (4) includes research on the potential environmental impacts of activity or development: Sand mining is a form of extraction, as mineral resources from the Earth’s surface are extracted.

The process of authorization through the Environmental Impact Assessment (EIA) can sometimes be lengthy. The most important legislation controlling environmental authorizations is the National Environmental Management Act, 107 of 1998 (NEMA), which is the highest-ranked environmental law in South Africa. According to Jikijela (2013), NEMA is controlled by the Department of Environmental Affairs at all spheres of government, including at the national, provincial, and municipal or local levels. As previously mentioned, National Environmental Management Act is not the only legislation governing the environment; there is another legislation that governs and monitors the environmental authorization process. Jikijela (2013) noted that the other relevant legislation, like NEMA, must also submit their reports to the relevant authorities. This section will discuss the relevant legislation in South Africa, as well as the EIA process which must be adhered to, to ensure the protection of the environment.

Environmental authorization (EA) is an important element of the NEMA legislation and occurs in different forms regarding the associated aspect at hand. EA is defined as the authorization granted by the relevant authority for a listed or triggering activity (RSA, 1998a). “Environmental authorization can be further categorized into eight more different components including an EIA. Authorization within the context of environmental administration tools enables selected organs of state to administer, implement, and enforce environmental laws” (Kotze 2005, p. 26). Bray (2008, p. 4) describes the EIA process as “the environmental assessment required in terms of NEMA for certain activities that may have a significant detrimental effect on the environment”. An EIA is endorsed in environmental regulation, permitting the Minister of Environmental Affairs to publish legislation that development may not commence before authorization is granted (RSA, 1998a). In 2010, three notices were authorized and adopted as law.

The first notice included activities that were simple developments and only required a basic assessment (BA), falling under the EIA process. The second notice was for more detailed activities, in both theory and structure and requiring scoping and an Environmental Impact Report, which is a more detailed report used in the EIA process. Finally, the last notice was for activities occurring in a specific geographical area, which also required a Basic Assessment (BA) before their commencement (Jikijela, 2013).

Biodiversity offsets play a great part in environmental management and also have a great influence on equity in development and environmental protection. Offsets are ostensibly a sustainable method used to limit environmental impacts and assess the remaining environmental impacts that might affect an area (McKenney and Kiesecker, 2010). The pressure to include these regulatory and voluntary policies remains restricted to governments. These provisions do not stop the implementation of biodiversity offsets, as these could be said to fulfil the requirements for Integrated Environmental Management (IEM). S23 of NEMA stipulates that the objective of IEM is to adopt an environmental management solution that ensures that a particular activity commences by the NEMA principles (Elliot 2014). It is a well-known element that biodiversity offsets initiatives can have multiple negative impacts, especially on the livelihoods of local people (Vanclay, 2017).

Problems start to occur when people who are deeply dependent on natural resources and the ecosystem services they provide are denied the use of those resources, such as the nearest forest, because an offset area is established (Bidaud *et al.*,2017) or because the area is destroyed by a development initiative (Seagle, 2012). For example, the case of Madagascar, Rio tinto QIT- Madagascar Minerals affected land use possibilities and food security for indigenous locals via a refusal to use a safe harbour bay (Huff and Orengo, 2020). The exchanges made between biodiversity and productive land uses has disadvantages that affect communities if financial compensation is not proposed may incur large costs to communities if not communicated further through financial compensation (Sontner *et al.*,2018, p 147). Ives and Bekessy (2015) have also criticized the biodiversity offsets because it aligns with a utilitarian ethic and rejects ethical barriers, leading to the destruction of biodiversity.

## **2.8 Theoretical Framework**

A theoretical framework has important roles which assist in the research being conducted. Firstly, it connects the researcher to existing literature related to the research question, provides assumptions that guide the research, assists the researcher in compiling their research questions, highlights the importance of conducting that specific study, and lastly guides the choice of the research design (Miller, 2007). The theoretical framework guides the researcher, so to avoid deviations that could prevent the scholar from making a sound contribution to literature (Sinclair 2007 and Fulton and Krainovich- Miller 2010). In this section, I set out the theoretical framework and field of study PE for the thesis, applying it within the literature and context set up above.

### **2.8.1 The Political Ecology Field of study**

According to Neumann (2009), political ecology began in the 1980s as an integrated field that assessed environmental challenges using similar concepts and ways of political economy. The highlight of this field is that it cannot exclude the political and economic aspects, which have proved to be an important foundation of the field. Neumann (2009) indicates that the approach of this field in connecting the environment and the people, which is linked to the growth of capitalism and changes in the environment across a greater scale.

Political ecology is a critical research field within anthropology, geography, and related disciplines that have become well-known for analyzing how and why structural forces, such as capitalist economic processes and power relations, drive environmental change within the world. According to Bryant (1998), Political Ecology investigates the political implications surrounding natural resources and challenges related to the environment. Many researchers have agreed that PE has a rich and diverse history. Emerging in the context of global neo-liberalization in the 1970s and 1980's political ecology emphasized the key role of outside forces like international development and economic modernization schemes in restructuring local lives and environments in the Global South.

As such, the field has often been associated with studies of environmental change and livelihood loss in the context of international mining, logging, agricultural conversion, and nature conservation projects in developing countries. Lastly, political ecology as mentioned above tends to focus on the role of capitalist markets and state forces in such processes of local dispossession and environmental disruption (Roberts, 2020).

Paul Robbins defines political ecology (PE) as “an empirical, research-based exploration to explain linkages in the conditions and change of social/environmental systems, with explicit considerations to relations of power” (Robbins, 2004, p. 12). The PE framework has been changing over time. The history of the term goes back to when studies conducted focused on power relations associated with the inclusion of humans in environmentally-related fields. Those include the fields of cultural ecology, human geography, and ethnobiology. It became a specific stand-alone discipline in the early sixties and seventies, as a field based on intervening in environmental challenges faced by people and being proactive in trying to solve issues regarding the environment (Leff, 2012). According to Robbins (2012) and Leff (2012), if PE has a common factor, it is power relations.

There has been a change in focus for PE, as this approach has been evolving through time. Historically, the analysis and highlight of political ecology were environmental changes associated with political power and less on ecological processes. Early political ecological analyses were focussed on land-based explanations of environmental change, with a greater focus on political control over natural resources, and less on ecological processes.

That has since changed, as the relationship between humans and their environments, which support power relations, is being prioritized more. (Stott & Sullivan, 2000; Shrestha & Ojha, 2017). According to Schlosberg (2007, p 256), “Environmental issues have loomed large in domestic and international politics for decades, but only over the past twenty years have they caught the attention of political theorists. Environmental political theory is now extending the boundaries of the political to include the natural world and our relations with it”. PE involves people and their standard of living, and relationship towards natural resources. PE combines the concerns of ecology and a broadly defined political economy. In conjunction, this constantly changes relationships between the environment and the people and also within classes and groups within society itself (Blaikie & Brookfield 1987).

Some human activities are strongly politically motivated. PE aims to determine the relationship between the environment and people through a careful analysis of what one might call the forms of access and control over resources, and their implications for environmental health and sustainable livelihoods (Watts, 2000 Stott Sullivan (2000). PE is an empirical, research-based exploration to explain linkages in the conditions and changes in social/environmental systems, with explicit consideration of relations of power (Robbins, 2004).

Political Ecology collectively addresses both environmental challenges and solutions to try and prevent mismanagement and exploitation of the environment (Robbins, 2004). PE includes three assumptions, which assist geographers in the analysis phase (Bryant & Bailey, 1997) Firstly, the understanding that costs and benefits associated with environmental change are for the most part distributed among interested and affected parties unequally. Secondly, the unequal distribution of environmental costs and benefits reinforces or reduces existing social and economic inequalities.

The impacts on the environment due to development are unavoidable. The inseparability of environmental and development concerns is stressed, as what affects the environment, affects the political and economic status quo and vice versa (Walter, 2014). The third notion is that the unequal distribution of social and economic impacts of environmental change also entails political implications, in terms of the power of actors. In this vein, environmental change not only involves the creation of wealth for some, and deprivation for others; it also changes the ability of actors to control or resist other actors, as they don't have sufficient power and resources to fight giant mining companies (Walter, 2014).

The political ecology approach has many benefits. The PE analysis is useful for the study of collective action, solutions, and decision-making at the local level for three reasons. Firstly, there is increasing conflict between the global moves toward decentralization and devolution, giving rise to community-based Natural Resource Management (NRM), and discourses of global environmental change that promote global approaches to environmental problems (Dryzek, 1997). Secondly, the political ecological analysis helps to understand the impacts of decisions taken at different levels, in terms of the environmental change and the livelihoods of local communities. Decisions taken at higher levels are less likely to consider the social and ecological costs at the local level (Adger *et al.*, 2002). Thirdly, political analysis helps to distinguish between those who make decisions (Adger *et al.*, 2002). The theoretical framework must be associated with the activity/operation of mining for it to make better sense, which is what the next section will discuss.

### **2.8.2 The Relevance of Political Ecology to Heavy Sand Mining**

Mining companies and communities affected in post-colonial contexts such as South Africa can often become involved in struggles over the rightful ownership of the land affected. In both developing and developed nations, there is some conflict involving mining companies, communities affected by the operation, as well as the state. In both first and third-world countries, mining normally creates debates associated with government stakeholders, the mining company, and most importantly, the communities affected by the mining activity. It has long been a contested landscape between the communities and mining companies, mainly as a result of different socio-economic values on the landscape for example, the community might have a strong connection to the land (Hilson 2002).

Umejesi (2012) mentions that the issue of land goes back to the colonial era when the government adopted frameworks that worked in their favour and granted the government the rights regarding the ownership of land. These ancient systems are still in place but have created disputes about the ownership of land and resources occurring on or beneath it. Communities often feel like they are fully responsible for the land they occupy, and often feel it is unfair for the state to take it over. For example, indigenous land owners in Fiji believe that this ownership extends to everything below and above the area of land they own, including the minerals found below and the sky above” (McLeod 2000, p. 116). However, the government feels involved and responsible for people’s land, through the policies and regulations passed (Lehavi & Licht, 2007). PE highlights inequality and power relations and implicates environmental justice.

Political ecology (PE) is focused on how people relate to the environment. Political ecologists aim to investigate and establish environmental issues that communities are exposed to globally. Political ecology has been important in explaining such phenomena, particularly the social and political inequities both causing them and facilitating their impacts (Bryant, 2015).

The main contributing element of PE is the unequal distribution of natural resources. An example of how political ecology relates to mining is the Ghana case. The artisanal mining is a traditional activity involving the local people of the area, which assists in them sustaining their livelihood for decades (Tschakert & Singha, 2007). Artisanal mining was initially introduced in the area as another option to agricultural practices, which is the main source of livelihoods for rural communities, whilst expanding livelihood opportunities. This practice assisted local inhabitants during the dry season time period. Unfortunately, policies implemented in the past four decades have supported large scale mining investors initiatives and investors and excluded small scale mining and local inhabitants. (Hilson, 2007). Small scale companies have therefore been excluded in most mining communities as the laws and regulations favoured large scale mining. (Hilson & Yakovleva, 2007) The government supports large scale mining over small scale mining occurring in communities, which leads to community disputes involving the extraction process and unequal distribution of resources in local communities (Hilson, 2007). This has led to major conflicts, arising from small scale miners and big mining companies (Hilson & Yakovleva, 2007).

Another case study depicting the application of political ecology is Turkey. To fully understand the mining disputes in the Ida mountains region, as the Ovacik case suggests, it is important to highlight the ongoing mining changes in the country itself (Global business report, 2008). The Turkish mining sector has massive areas of reserves of non-industrial minerals and the government of the country is ready to accept them into their mining sector to ensure their economy is sustained and increases. An estimated 65 per cent of the country’s land surface is believed to be suitable for gold exploration (Global business report 2008).

In applying the PE framework to a case study of heavy sand mining it is possible to explore and describe relations and entanglements of mining, land, people. In addition, in contested mining contexts it is useful to deeply the concepts of SLO and pacification to analyze and discuss the relations between mines and adjacent residents.

### **2.8.3 Social License to Operate (SLO) and its relevance to Political ecology**

Communication between interested and affected parties is very important. In cases where communities have been affected by mining, there needs to be close communication with the extractive industries, at a global or national scale, to make their voices heard (Haartad & Floysand, 2007). The communities of Intag (Ecuador) and Majaz (Peru), for example, initiated court cases with human rights organizations against mining companies in Canada and the UK, to have their worries and concerns noted. The social license to operate (SLO), as mentioned in earlier sections, can be described as a measure of the social acceptance of mining. The SLO concept has become common in recent times in the extractive industries of global mining (Bice & Moffat, 2014). The SLO is the total acceptance of the company involved in extractive operations by stakeholders, communities, and interested and affected parties.

According to Willow (2021), the term Social License to Operate was initially founded in 1997. It began in the mining sector and then expanded to other sectors such as agriculture, infrastructure, energy, and the tourism sector. Discussion of SLOs were prevalent in incidents of community resistance and protests to mineral extraction were seen in Latin America in the 1990s and 2000s (Gqada, 2011).

This concept provides advantages like communities having access to how they can benefit or be placed at a disadvantage by the mining operation. Willow (2021) mentions that communities also benefit in that they participate in the processes involving the mining operation, thereby decreasing the chances of protest action and disputes. A Social license cannot prevent mining companies from destroying the environment, however, it provides communities with a way of thinking more regarding activities that pose a danger to them. The social license is flexible to change and adapt to that specific community, which makes it difficult to analyze because it's not consistent it changes. It requires continual monitoring that needs to take place throughout the life cycle of the project. Requirements to meet the social license are becoming more difficult as communities are becoming more aware of the rights that involve them. Willow (2021) indicates that the failure to listen to the concerns of communities is some of the challenges that prohibit the social license from being granted. Other aspects that prohibit access to an SL are failing to understand the communities, the failure to build strong relationships with the communities, failure to keep promises made to the community, and finally the disputes are caused by the focus on local and social impacts while environmental impacts are ignored (Willow, 2021).

A local reference to how Social License to Operate is linked to Political ecology is indicated in the Xolobeni case study. The foundation of the post-colonial era in South Africa is the formed partnership between government, international and local mining interests which grants the mining sector unlimited access to all government platforms (Leonard, 2018). This partnership can be referred to as state capture, which highlights how individual interests surpass collective interests both in the public and private sectors (Madonsela, 2019). The study of Xolobeni depicts an element of control of particular corrupt individuals who overpower the majority and aim to influence laws, regulations, and policies that benefit them (De Klerk & Solomon, 2019). Although the Xolobeni mining project was prevented an element of politics and power was behind the proposed project in the Eastern Cape. The SLO was weak in the Xolobeni case study because major decisions were super-passing locals and what the communities stood for and placed close to their livelihood, and there was strong, organised opposition to the mine from the Amadiba Crisis Committee (ACC). There is also a connection to political ecology which determines that major decisions affect the environment and the people, in most cases, people are politically excluded from what impacts them in the long term. There is therefore an indication that the struggle, fight, and sweep of the communities of Xolobeni who aimed to prevent the mining company to mine their land was closely linked to corrupt politicians and government officials who wanted to make money at the expense of the environment and the people near the proposed area.

SLO and sustainability are two interconnected concepts. SLO is built over time as communities gain trust in the industry operating amongst them. To ensure that the SLO is implemented successfully, the extractive industry must indicate to the affected communities how the operations and procedures will be set up, and how the environmental systems will be protected. (Kenton, 2019).

#### **2.8.4 Pacification and its relevance to Political ecology**

According to Baron et al., (2019), pacification is a security measure that enforces compulsion internally. According to Neocleous (2013), pacification has its historical roots in wars of conquest and primitive accumulation in the sixteenth century in the military protocols of Spanish colonizers in the new world, but was also widely used in wars in places like Algeria and Vietnam (Richmond, 2022). However, the concept also holds the potential to demonstrate how this history weighs on and is often perpetuated in the present. Rigakos (2016 p. 27) indicates that “pacification is a stratified and historical process, involving dispossession, exploitation, and commodification, that reflects capital's need to create productive territories and to permanently discipline people into their role as laborers”. The term pacification has been related to the violent acquisition of territory by colonizing forces, followed by broader interventions designed to maintain peace in post-colonial eras.

For Neocleous, pacification is inextricably linked to capitalism, in that it serves to maintain access to both a cheap and pliable labor force and valuable raw materials (Richmond, 2022). He argues that “pacification places at the forefront of our analysis a consideration of the confluence of military conquest and the fabrication of social order: it advances our understanding of the world capitalist economy and its social relationships, by arguing that it is also a world military order undertaken through a whole host of police actions” (Neocleous et al., 2013, p. 2).

Literature on pacification has defined it as an attempt to enforce capitalist relations in a vulnerable environment (Neocleous, Rigakos, & Wall, 2013). The Recent critical theory on pacification, argues that the concept includes the connection between disputes and the police in trying to reach order (McMichael, 2016), but has evolved to cover a broader range of orders, included the monitoring of general waste, and mining (Huff and Orengo 2022).

Pacification can be defined as the process of creating and enforcing certain kinds of order, and if necessary positive relations with mining communities, through initiatives that will uplift the communities affected or reduce opposition. Peace is not an end goal; it is an ongoing condition requiring attentive maintenance and monitoring to be actively sustained. Metaphorically, peace is seen not merely as a stage in time or a condition. It is a dynamic social construct, and peacebuilding involves a wide range of activities and functions, which are needed to transform conflict towards a more sustainable, peaceful relationship (Lederach, 1997, p. 84-85). The two concepts of SLO and pacification are not new and are closely related to PE in that they are all while SLO aims to characterise the presence or absence of a desirable state, pacification details a process to produce a situation and context in which mining can proceed, with or without a SLO. In the midst of these, there are politics, government, benefits and costs which can be unevenly distributed or channelled to a few while the majority of the communities affected do not reap the fruits of the extraction operations occurring near them. This can be associated with the Madagascar paper where Huff and Orongo (2022) indicated that violence was used in solving opposition or disputes regarding the mining operation. There is a connection between the two as the Huff and Orengo (2012) paper indicates that violence was used to pacify people from opposing the extraction. In Madagascar indicates that sustainability and extraction of resources are considered both vital to ensuring the improved livelihoods of people in Madagascar. The concept of pacification in political ecology is very important in my thesis as it indicates that the communities in the Fairbreeze mine were pacified into accepting the mine into their area.

## **2.9 Conclusion**

This chapter discussed perspectives of extractivism and heavy sand mining. The chapter was divided into four different parts. The first part discussed the paradigms of mining including the philosophical theoretical interpretations of mining and sand mining. The second section discussed the types of sand mining, environmental and social impacts of heavy sand mining, some aspects of environmentalism and contestation

over extractivism, geographies of sand mining on a continental and national scale and finally environmental regulation of sand mining in South Africa was also mentioned. The third section of the chapter discussed the study of Political Ecology and its relation to HSM and the two important concepts of the thesis SLO and pacification. Political ecology was introduced as an umbrella study of the concepts mentioned above. The two particular concepts of relevance are social license to operate (SLO) and Pacification. SLO as a concept allows an understanding of the relative acceptance of mining by interested and affected parties such as communities and organizations. Lastly pacification, by contrast, allows a conceptual engagement with contested mining contexts, where resistance is diminished or eliminated.

## **CHAPTER THREE: METHODOLOGY**

### **3.0 Introduction**

The main aim of the study is to investigate the impacts that the operations of heavy sand mining (HSM) have brought to the Fairbreeze area and closely located communities, including Mthunzini in northern KwaZulu-Natal. This section of the thesis will discuss the Fairbreeze case study context, the methodology adopted to carry out the research, and an account of the data collected and the methods applied to acquire it.

The type of research method used was the qualitative research method, Primary data interviews were held with key informants, professionals, and communities, and field observations were conducted. The data used for the Fairbreeze mine study came from both primary and secondary sources. Secondary sources included BAR reports, newspaper articles, journals, case studies, books, and other academic literature.

This chapter is organized into eight sections. The first theme is the type of research design used for the research and includes qualitative methods. The second theme is the case study approach, the third theme is the geographical context and the fourth theme looks at research instruments, questionnaires, key informant interviews, field observation, and lastly, literature review and analysis. The fifth theme consists of sampling procedures, indicating the type of sampling used for the research. The sixth theme is ethical considerations, where the feelings of participants were carefully considered. The seventh theme focuses on data analysis tools, which included thematic analysis and theoretical engagements. The last theme is the positionality I took as a writer in conducting the research. The next section will discuss the geographical context of the mine.

### **3.1 Research Design**

A research design is a plan of the research which connects the project. The two main types of research designs consist of qualitative and quantitative” (Madyise, 2013). This section will discuss qualitative research design and its relevance to the research I have conducted. Political ecology (PE) is a contributing approach to the type of methodology used for the research, and I will also discuss its linkage to qualitative research.

A qualitative study focuses on the impacts and experiences endured by humans. A qualitative research strategy puts more emphasis on discussions of theory than on those of numbers, in the collection and interpretation of data (Bryman, 2004). This type of data includes the public and their responses. This is a type of research design where words are used more than numbers, and is usually dependent on interpretation (Tolich & Davidson 2003). This is because a significant amount of data is normally collected. “Qualitative research emphasizes the process of discovering how the social meaning is constructed, and stresses the relationship between the researcher and the topic being studied” (Gwimbi 2014, p. 50). Qualitative analysis also comes with benefits.

The first advantage of qualitative research design is the personal involvement with your respondents, through the use of questionnaires and interviews. However, it usually takes longer to complete, as there is a large quantity of data to be collected, analyzed, and discussed. Another advantage of this type of research design method is its flexibility and that it can accommodate a shift in focus in the same study, without any interruptions or problems. Some of that type of data collected includes community perspectives relating to the mine. I also collected information regarding the socio-economic and environmental impacts and the unemployment rate in the area. This type of design consists of rich information incorporating all the difficulties faced by the researcher (Cassell & Symon 1994). The last advantage of the qualitative method is that, with the diverse views of looking into phenomena, interpretive researchers can not only describe objects, humans, or events but also need to deeply understand them in their social context (Pham, 2018).

There are many different approaches involved in qualitative data collection. Qualitative research has an underlying principle which is that, if one wants to know about something, one has to be hands-on with everything; this means that one has to travel or be physically present where the research investigation is taking place, and observe the issue first hand. The qualitative methodology involves observations (Punch 1998).

The relationship between PE and qualitative methods is in the great variation of data collection methods. Political ecology is a broad approach to the variation of methods that can be utilized in its application (Rocheleau, 1991, 1995, 2008; Doolittle, 2010). “Methodologies used in political ecology are richly diverse, ranging from the material to the discursive, from empirical evidence about ecology to post-structural concerns related to power, knowledge and discourse” (Moran-Ellis *et al.*, 2006, p. 52). The use of a variation of methodologies enables researchers to acquire more accurate information. Political Ecological research seeks to understand the links between people and nature; to “accommodate multiple realities and produce context-dependant findings [where]...some of the methods include participant observation, interviews, oral histories, stories, discourse analysis, archival research, focus groups, and photographs” (Doolittle 2015, p. 520).

About the Fairbreeze mine, a variety of data collection methods were used, through field visits, observations, documentary analysis, key informant interviews, and questionnaire surveys. Secondary data were collected through the analysis of comparative case studies and related research on sand mining, occurring at a global, national, and local scale. This type of research method is closely related to my study of the Fairbreeze mine, as it is less positivist and more socially concerned, including people to a greater extent.

The reason I made use of this design was because my study didn't limit me to any findings, meaning that I would include in my analysis section, information that could have emerged while I was on site (Denzin *et al.*, 2006).

In conclusion, the qualitative research method was determined to be the most appropriate to study the Fairbreeze mine, and questionnaires were distributed to all interested and affected parties involved in the investigation. A case study approach is one of the methods adopted to portray the bigger picture in research and was applied in the Fairbreeze mine context, which is to be discussed next.

### **3.2 A Case Study Approach**

This case study approach is used in conducting this research. A case study is “an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not evident” (Gwimbi, 2014, p. 52). “A case study also copes with the technically distinctive situation in which there will be many more variables of interest than data points, and as a result relies on multiple courses of evidence” (Gwimbi, 2014, p. 52). This indicates that research is not only conducted in one way but is conducted in different ways and forms.

A case study approach was used to understand heavy sand mining (HSM) at the Fairbreeze mine. I researched information from other relevant academic sources, which were quite similar to the research I am currently conducting. During the research, a similar trend was found in heavy mineral mining environments, which was that mining companies globally have both negative and positive impacts on the communities affected. Most communities have leaders who engage in talks with mining companies on their behalf. Nevertheless, some communities fight mining companies to the bitter end, while other communities struggle to fight and win over mining companies. Four aspects indicate that Fairbreeze Mine makes for a good case study.

Firstly, in South Africa, sand mining can be a contested issue, and this is evident at the site. Secondly, the expectations people have about the outcomes can differ greatly.

The third aspect is that power relations can affect decisions and outcomes. The last aspect of this case study is that there is uncertainty if rehabilitation will be successful or not.



easier to use to access information. I also embarked on this type of research method, as a relatively small sample size of the population can be utilized to conclude the whole population in general. Questionnaires are therefore a very cheap method to determine how people feel. (Mathers *et al.*, 2007). I sent out 50 questionnaires to the communities near Fairbreeze Mine. The questionnaires were distributed within four communities. The 50 questionnaires were distributed within the communities of Kwa-Nzuza, Obanjeni, Ogagwini, and Mthunzini, which are all near the Fairbreeze mine eighty people were the maximum I could reach with the budget and timeframe I had, during my time in the field, and allowed research saturation to be reached.

### **3.3.2 Key Informant Interviews**

Interviews were a significant research instrument in the case study. The interviews were first conducted with relevant members of the community, which included interested and affected parties such as committee members and NGOs, while others included the rest of the community members, whose participation would make a significant contribution to the results I conclude with. Individual interviews with key informants were administered to collect primary data, as the interviews conducted were one-on-one. The relevant key players in the research were initially identified and contacted by phone or email, to set up meetings and interviews for the investigation of the impacts of extractivism at the Fairbreeze mine. I chose to do interviews as I knew it would be the best way to get the most reliable information, by meeting up with people personally.

There were eight key informants I engaged with during my field visit to Fairbreeze. The first key informant was an environmental specialist from Tronox, who increased my understanding of the environmental, economic, and social responsibilities of affected and interested parties, as well as to get the latter's perspectives on the Fairbreeze mine. There was a discussion with MR M as he is one of the Amakhosi of the Macambini Tribal authority. I also discussed with the owner of the Environmental Centre Twin Stream in Mthunzini, as the centre is based near the mine. I also talked with a bed and breakfast owner, who is also an active member of the Mthunzini Residence Association, and an environmental control officer; he previously worked for an environmental consulting company to assist with the Environmental Impact Assessment (EIA) process.

I emailed an environmental journalist some questions relating to the Fairbreeze mine, as he had been active in writing about mining in northern KwaZulu-Natal (KZN). He wrote about heavy sand mining in many of his articles, to ensure that the public as well as interested and affected parties were made aware of the issues associated with this type of activity. I had a meeting with an environmental activist because he was constantly writing about heavy mineral sand mining in South Africa. I made use of his written papers, and he also shared some knowledge and documents at hand with me. Lastly, I interviewed someone who told me mostly about the history of the Macambini land, and the different Amakhosi who have been in charge of the land, where the Fairbreeze mine is currently operating. Questionnaires and interviews were not the only method used to collect information. Other methods were also used and will be discussed next.

### 3.3.3 Field Observation

Field observation is what one can see on site. “Observation is the systematic description of events, behaviours, and artifacts in the social setting chosen for the study” (Marshall & Rossman, 1989, p. 79). Observations can occur anyhow and anytime, and it all depends on the topic being investigated. There are two types of observations, the first one being participant observation, and the other one being unobstructed observation. “Participant observation is a common method of engaging a researcher with the community at hand. In this kind of observation, a researcher may come into contact with participants and become part of their community. Conversely, in unobstructed observation you do not interact with participants but rather simply record their behaviour” (Driscoll, 2011, p. 160). One needs to distinguish the difference between an observation of what one sees and an interpretation of what judges and concludes (Driscoll, 2011).

There were a few places I visited when embarking to interview the respondents. In the study area of Fairbreeze, I recorded what I noted observation as well as the four affected communities in and around the area. I visited the four different communities that were directly and indirectly affected by the mine, and the nearby town of Mthunzini, conducting non-participant observations of their lives and assessing the kind of impacts of the mine. Observations occurred in private places like homes in the four communities located near the mine, and in classrooms, which included a local school) that Tronox sponsored with technological equipment to some degree), where I obtained consent from the people and the educational staff to participate in the research. First, I visited the sponsored school and proceeded to their principal’s office, where I was permitted to speak to one of the teachers, who was more knowledgeable than him regarding Tronox funding. We, therefore, had a detailed discussion, and he told me what financial and technological contributions the mining company had assisted the school and communities with. Next, I visited people’s homes, greeted them and explained to them that I was conducting research, and told them their contribution as participants would be greatly appreciated and acknowledged.

### 3.3.4 Literature Review and Document Analysis

A literature review is the most important part of the research and contains its core elements (Mentzer & Kahn, 1995). The literature review chapter is the main one in a study and contains the literature and other documents used. Literature reviews aim to for these two functions; firstly, they assist in generating ideas for research and provide a summary of existing literature where patterns, issues, and similar themes are highlighted.

This way the literature review is the first stepping stone for research, which therefore explains why review papers are normally cited (Easterby-smith *et al.*, 2002,). “The second function would be that any contribution to research, must be linked against existing theories (Saunders *et al.*, 2003).

Historically, documentary research has always been the core of social research, as it contains an in-depth analysis of the topic being investigated (Hammerslry and Atkinson, 1995). The documentary research method

is the analysis of documents or literature involving the topic of investigation (Bailey, 1994). In the case of the Fairbreeze mine, I reviewed both primary and secondary literature. There were environmental documents I analyzed in the process of conducting my research. The documents I used included the Basic Assessment Report (BAR) and Water Use License Application (WULA) documents, formulated by private environmental companies. In the process of analyzing the EIA, I utilized previous academic literature, as well as the BAR and WULA documents provided by private environmental organizations. Documentary research is important in its own right, but the type of sampling technique used for this type of research can have a huge impact on the result. The next section will discuss sampling procedures.

### **3.4 Sampling Procedures**

A population includes the characteristics of the people being investigated (Chimedza, 2003). Mark (1996), mentions that a population is the collection of all the people who will part take in the study. Strydom and Venter (2002, p. 199), refer to the population as “the sampling frame; the totality of persons, events, organization units, case records, or other sampling units with which the research problem is concerned.” Lastly, Bless and Higson-Smith (2000,) indicated that a population is elements the research focuses on such as people for example to produce results that can be generalized to make a conclusive analysis.

This validates the findings made by Chimedza (2003) and Mark (1996), that when defining the term population, this term is related to the people who will participate in the investigation being conducted.

Sampling is important as it chooses a specific number of people to represent the whole population. Fink, (2003) mentioned that sampling is a necessary step, which allows participants of the study to be chosen and to represent the whole population. According to Polit and Beck (2017), sampling is the selection of a part of the population that will represent the whole population. The sample population of I&A parties in and around the mine was 50 people.

The sample for the Fairbreeze mine research consisted of 70 people. I was only able to conduct fifty interviews because the study site is a bit far from my current location. This was also the chosen amount, as it was the number of people available during my time there, and who were willing to participate in my investigation. The participants included previously employed workers from Tronox, izinduna, Inkosi, members of committees, representatives of NGOs working in close relation with Tronox, local school teachers, residents, business owners, members of the Mthunzini conservancy, and members of the Mthunzini Residence Association.

Two different types of sampling were applied to the Fairbreeze mine study: convenience sampling and random sampling. Convenience sampling includes participants who are readily available and easily accessible, to be part of the research. This type of sampling was used in this Fairbreeze research because I had the right to select

participants who were easily accessible and available; those communities included Kwa-Nzuza, Ogagwini, Mthunzini, and Obanjeni participants. Purposive sampling was also applied in this research, as some participants were specially chosen because they knew relevant parts of my study.

The other type of sampling included in the study was random sampling. Random sampling is when a small percentage of the population represents a larger percentage. Random sampling is the most common type of sampling, as it is easy to undertake (Teddlie and Yu, 2007). Random sampling is picking households or people randomly, especially about their availability, in answering the questionnaire at hand. I used this type of sampling, as every household in and around the Fairbreeze area would have an equal chance of being chosen to answer the questionnaire, depending on the access which I might get to the community members. There were about 60 participants in Ogagwini and Obanjeni areas, where random sampling was conducted.

My respondents included a great percentage of young people aged 21-35 years old, many of whom are unemployed. There is also an older generation of people who were no longer working and staying at home. Lastly, some of my respondents included stay-at-home moms who were not looking for any form of work but stayed home while their husbands/boyfriends went to work. Some of the participants I engaged with included the homes of izinduna in the area.

During my fieldwork, I would come into contact with an interested person, who wanted some information on the research I was conducting in the area. I would speak about and update that person about the study I was conducting, after which I would ask the person if they wouldn't mind being part of the survey; that is how I reached a large percentage of the participants with whom I spoke to.

Snowball sampling was also utilized for this study. "Snowball sampling is a method of gathering information to access specific groups of people" (Naderifa *et al.*, 2017, p. 3). The Snowball sampling method is common in qualitative sociological research. This type of sampling is closely related to referrals, whereby some more knowledgeable personnel is recommended especially in association with sensitive issues (Biernacki, 1989). In the case of the Fairbreeze mine research, I also interviewed people who were recommended to me by other participants or neighbours. Approximately 20 participants were conducted using a snowball sampling type in Mthunzini and Kwa-Nzuza areas. The granting of permission to investigate must proceed in a correct manner, which is my next discussion.

### **3.5 Ethical Consideration**

Ethics is the careful consideration of investigating a topic and being aware of who is likely to be affected. All research designs should consider ethics towards participants and consider the sensitivity of the issue involved. Gwimbi & Dirwai (2003) define ethics as the acceptable moral principles developed by individuals or groups,

and which govern the conduct of research about sampled subjects, respondents, and all stakeholders of the research process. In carrying out research, it is the responsibility of the researcher to protect the respondents from harm and provide them with adequate information on its importance, thus enabling them to withdraw from cooperating at any time.

I applied for ethical clearance from the University of KwaZulu-Natal (UKZN) ethics committee before conducting the research, and I was permitted to proceed. Since the study was mainly conducted in the rural villages surrounding Mthunzini, permission was also obtained from the Inkosi of the area. The traditional leader then referred me to communities nearby, whom I could potentially interview. This research aimed to investigate impacts that were the result of the extractivism at the Fairbreeze mine near Mthunzini.

Some of the things I had to consider were that some communities surrounding this mine were mostly Zulu speaking, so I translated my questions to Zulu to accommodate that. I also considered that the communities might think I would provide job opportunities for them if they participated in the questionnaires so I would explain from the beginning of our conversation that I was conducting a study and their participation would be greatly appreciated. The area was a rural setting where traditional leaders still take ownership so during the field visit I preferably wore a skirt instead of pants.

### **3.6 Data Analysis Tools**

To ensure the efficiency of the data analysis process, analysts are encouraged to utilize an analytical framework. Analytical frameworks are utilized to see the way and capability of thinking of analysts. (Chataigner, 2017).

Another important factor regarding an analytical framework is that it provides a method that organizes the data collected, and how was it analyzed. It also differentiates the information into that which will be important and useful, and that which is irrelevant (Chataigner, 2017).

Thematic analysis and theoretical engagements were used for the research. The thematic analysis included conflicts within the mine-affected communities and collaborations. Theoretical engagements included PE, the umbrella of all the other analysis concepts, which includes SLO, Pacification, and TPSN. There are eight themes I employed for the Fairbreeze mine, which fall under my analysis.

The first theme is the environmental impact assessment, which is an environmental procedure or activity done before the commencement of any project; it highlights the impacts which could be brought upon by the mine, including social, economic, and environmental ones, on the affected area.

The second theme is contestation, which is closely related to legal proceedings in court between the mining company and residents surrounding the Fairbreeze mine. The third theme is around the benefits which the mining company was going to enjoy, once the extraction of minerals had commenced.

The fourth theme is extractivism, which is the most important theme in conducting this research, as many elements are linked with the actual activity of extracting minerals from the earth’s surface and the extractivist landscape Fairbreeze turned out to be.

Externalities or costs are the fifth theme that was considered for this research, as some negative impacts would affect the environment and people nearby. Public discourse is the sixth theme, which plays an essential role in the voices of the public to be heard. The seventh theme is interested and affected (I&A) parties, as there were many organizations and groups which were formed during the commencement of the Fairbreeze mine, who fought to the core in trying to prevent the initiation of the mine. The last theme is sustainable development in mining, which is to ensure that the mining company had rehabilitation plans in place to ensure that no impact of the area being mined would be long-lasting and affect future generations in years to come.

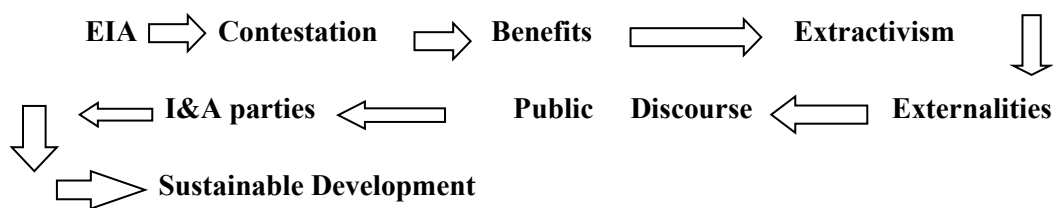


Figure 3.2. A flow chart showing the important themes of the research

The three specific concepts used in the research analysis are SLO, TPSN, and pacification. In recent years’ communities have been playing a greater role in their involvement in community mining operations. The community members also hope to benefit from the mine operation within close proximity to them and they also ensure that mining corporations are regulated in the correct manner to avoid any negative impacts on affected parties (Moffat *et al.*, 2015). The increasing pressure on the performance of companies, and the acceptance of the development and extraction of natural resources, have been termed the social license to operate (Moffat *et al.*, 2015). In relation to the Fairbreeze mine the SLO was weak as there had been protest actions and court cases in the area, which depicted that communities in and around the area were not satisfied by the engagements from the mining company.

Pacification can be applied within a capitalist government-run country, limiting rights to communities affected. Pacification connects people and nature in a capitalist environment. (Sullivan, 2009). “Pacification has been theorized as a stratified and historical process, involving dispossession, where people are moved away from their ancestral land, communities end up being used for placing their trust on mining corporations. exploitation of communities trusts on the mining company” (Rigakos, 2016). In relation to the Fairbreeze

mine the concept of pacification is applicable as towards the end the interested and affected parties were pacified either through community projects or settlements that the mining company brought to the table.

As previously mentioned in an earlier chapter, the TPSN conceptual framework is also very important for my research, as it has been applied. In relation to the Fairbreeze mine the territory that the mine operates in is traditionally owned so the mine must adhere to the rules and regulations of the traditional authority. The place where the mine operates is a rural setting so certain procedures are still expected to be followed in that place unlike an urban area which has modernized. In relation to the scale of the area, it a combination of people from different hierarchies starting from the Department of Mineral Resources (DRM), traditional authority right down to the normal community person residing in the area. Lastly networks are also applicable in the Fairbreeze case as they can be a communication linkage on how issues facing the community could be solved such as protests.

### **3.7 Positionality**

Positionality describes a person's side to favour, in research (Foote and Bartell, 2011 and Savin-Baden & Howell Major, 2013). The individual's positionality consists of assumptions (Sikes 2004), which are often related to other relevant factors such as religion, history, and race, to name a few, as well as disabilities (Bathmaker *et al.*, 2005; Sikes, 2004). Positionality is normally identified by locating the researcher about three areas: my Positionality is that I am a trained Environmental Assessment Practitioner (EAP), as my professional field is to deal with the protection of the environment.

I did not favour, whether from Tronox or the communities, therefore I remained neutral throughout the research. This neutrality prevented my judgment from being biased or favouring one party over the other. I currently hold a Bachelor's degree in Geography in Environmental Management, and I have honors in Environmental Science. Self-reflection and a reflexive approach are two fundamentals that are necessary for the researcher to determine their positionality (Cohen, Manion, *et al.*, 2011). Reflexivity is a term that researchers should appreciate, in which they seek their understanding of the research and their role in it. I am a Zulu-speaking student conducting my research in a black, Zulu-dominated area, where customs are still followed and respected in that area, which is still under traditional authority. My positionality is also that I am a Christian who believes in God and celebrates any holiday associated with remembering God in my life.

The aspects which made my research easier to conduct included the fact that I conducted the interviews in Zulu and English, which made things easier for Zulu-speaking respondents to speak in their language and express themselves freely; it also increased the level of understanding and comfort between us. That was depicted through some of the jokes that we shared. Another important aspect that made conducting this research easier was the fair bit of knowledge that I have of EIA. This assisted me with the analysis of the

impacts of extractivism on the area, as well as with the role players and interested and affected parties, as they play a major role when an EIA is conducted. The last aspect which enabled my fieldwork to be conducted easily is that I am a free-spirited individual, who loves being around people and also loved by them.

### **3.8 Conclusion**

This chapter introduced the background information on the study of heavy sand mining at the Fairbreeze mine, in the north of KwaZulu-Natal. The type of methodology adopted in any research paper must be used to produce a well-presented research paper, accommodating all who wish to acquire and make use of it for their current or future academic writings.

Qualitative research methodologies have been used in a big number of studies, both globally and locally, this is the type of research method applied at the Fairbreeze mine. The qualitative data consists of important research elements such as research design, research instruments, sampling procedures, data analysis tools, ethical consideration, and finally, positionality used in conducting the investigation. Researchers must be made aware that when conducting qualitative research, the sensitivity of individuals is a key element for example if at the Fairbreeze mine, some community members had family members buried close to where the mining commenced then that situation would have attached a sensitive element to those affected. The next chapter will go into greater detail about Fairbreeze representing a contested extractivist landscape.

# **CHAPTER FOUR: FAIRBREEZE IN A CONTESTED EXTRACTIVIST LANDSCAPE**

## **4.0 Introduction**

Historically, communities affected by mine operations in South Africa had no voice. During apartheid, the mining industry was unaffected by environmental regulations and legislation and operated without any challenges (Hallowes and Munnik, 2006; Leonard, 2017a). Post-apartheid, industries were provided with licenses to undertake mining activities, which affected natural habitats, species, and communities. At the same time, post-1994, communities affected by industries such as mining had the political space to voice their grievances and concerns (Leonard, 2018). For instance, over the lack of communication between affected communities and mining companies. In chapter two, we established that there is consensus in the literature that disputes between mining companies, communities, and traditional authorities (TAs) remain in rural communities.

In this chapter, I will mention the historical background of the area including the transition to democracy and the ongoing importance of mining in the Zulu monarchy and Ingonyama Trust Board. The chapter will contextualize the Fairbreeze area in Zululand, and the KZN mining landscape, in the following manner: there will be a discussion on the historical background and context of mining in Northern KZN, which will include four main topics. Firstly, there will be a discussion on the pre-colonial era, then the colonial era. The territory of Zululand was significantly influenced by traditional leaders and the Ingonyama Trust post-apartheid, in rural areas most of the land is still held communally in trust, and governed by traditional leaders, though the national state retains control over mineral rights. Zululand thus represents a multi-scalar mining landscape, with a history of racialized uneven development instituted during the colonial and apartheid periods. Colonial networks, for example, were changed to Traditional authority networks with a huge influence from colonization.

The second element of the chapter will be the Fairbreeze history and timeline and the occurrence of events regarding the mine. The relevant role players and stakeholders of the Fairbreeze mine will also be introduced and discussed, with the roles they played in the mine operations. The discussion on the history of Fairbreeze and a detailed discussion of the timeline of the mine's development sets the context for the research discussion and theoretical analysis that follows in Chapter 5. The third element will be the relevant stakeholder's perspectives, which will be followed by the contestation of the mine where I will briefly introduce extractivism about environmentalism of the rich and poor. The last element of this chapter will be the community responses and perspectives which were accumulated during my fieldwork and will be portrayed as tables and graphs and relevant quotes. Northern KZN and the Fairbreeze study site as contested landscapes with a complicated history.

## 4.1 Historical Background

The chapter will proceed by describing the historical background of the area. This is important, as the area in question has a complicated history within an extractive landscape. This historical background section is also important to understand the land ownership and occupation in this area. The first section to be discussed will be the pre-colonial era, followed by the colonial settlements and economy. Then, in the third section, there will be a discussion on the Zululand Bantustan and traditional authority. Finally, there will be a discussion on the transition to democracy, and the ongoing importance of the Zulu monarchy and the Ingonyama Trust Board (ITB).

Before colonizers from Britain arrived in 1824, Natal was ruled by a non-Zulu chieftaincy. “Some of the African chiefdoms in Natal were obliterated during the Mfecane, others fled southward as far as the Cape Colony, while others survived as rudimentary fragments that sought the protection of British traders and merchants, located in the vicinity of Port Natal after they arrive in 1824” (Kruger, 1994, p. 5). The colonial encounter saw massive changes take place. Colonialism can be defined as one country taking ownership over another country and ruling them. It is when a foreign country takes over the state power of another country. “The first objective of colonialism is political domination. The second objective is to make possible the exploitation of the colonized country” (Ocheni and Nwankwo, 2012, p. 46). The colonization era in Africa by European nations was a result of a few factors including the demand for raw materials technology because of the industrial revolution (Ocheni and Nwankwo, 2012). Natal was discovered and named by the Portuguese navigator Vasco da Gama. These included substantial infrastructural improvements, the development of major agricultural enterprises and a rise in crop and tree plantations, the establishment of a much wider range of factories, and the booming of the coal industry. Natal developed into an economic hub. The beginning of the booming Natal economy was a result of the gold mining operations occurring in the Transvaal region. This didn't only benefit local producers but led to capital accumulation in Natal, which resulted in the expansion of communication channels, and a boost in the bulk transportation business. Capital accumulation in colonial Natal is where that has begun to attract attention (Guest, 1989).

Indirect rule and direct rule were methods that colonizers adopted to overpower the remaining chiefs of the colonized province or area. Colonial rule was partly predicated on ‘direct rule’ based on the legal precepts and political trajectories of the West, translated into the language of rights, and the ideals of citizenship. However, “Indirect and direct rule were not contradictions but were complementary ways of native control” (Mamdani 1996a, p. 18). Traditional leadership changed greatly at the hands of British colonization. Pre-colonial traditional powers were passed on from generation to generation. That however changed during colonization and the apartheid regime. As there was not 'one' colonialism, there also was not one form of colonial rule. The form of leadership locally installed by the British colonizers was the concept of indirect rule (Ntsebeza, 2003). The powers remained with the colonizers, who had local representatives in place for administration (Ntsebeza, 2003).

There were conflicts and civil wars between the Zulu and British people. In December 1878, the then-king known as King Cetshwayo didn't support the British idea to disband his Zulu troops, and the following year, the British colony invaded Zululand to take complete control. The British soldiers were defeated at the famous Isandlwana war and 1300 British soldiers were killed or wounded, at both Isandlwana and the Hlobane Mountain; however, in March 1879 of the following year, the British came to be victorious at the battle of Khambula. After months of wars and disputes, the king went into exile in the Cape. Zululand had many chiefs who had no say in anything hence that resulted in another war for control (Van Niekerk, 2009). "Chiefs were also required to disband their regiments and to call their young men up for labor for the state when the supreme chief desired" (Thabethe, 2000, p. 52). In 1883, when Cetshwayo returned from exile, his land was reduced, and authority was confined to the central part of Zululand. The Zulu monarchy was threatened and was replaced by a large number of chiefs (Kruger, 1994), and The Zulu kingdom was broken down into different compartments. Control of the area around Mthunzini and Fairbreeze was handed over to John Dunn, a white trader who had integrated into Zulu Society and was handed one of 13 chieftaincies', after why Guy (1996) terms the 'destruction of the Zulu Kingdom'. Dunn had his traditional council within what is now the Mlalazi Nature Reserve, downstream from the 'twinstream conservancy that adjoins commercial forestry land and the Fairbreeze mine. Mamdani (1996a, p. 18) and Kruger (1994, p. 7) agree that the colonizers differentiated the Zululand colony to increase their power and terminate the legacy of the Zulu kingdom. This section is of relevance, as it indicates that the area of Zululand has always been a contested landscape. This is exactly what is happening in modern-day extractivist mining landscapes, where questions of the legitimacy of authority and decision-making arise.

As previously mentioned the beginning of apartheid resulted in major changes for black South Africans, as in 1953, there was the introduction of the homelands. As the years progressed, the government at that time developed a Bantu self-governing system, which was successfully implemented in 1970; this is how the KwaZulu-Natal homeland for Zulu-speaking people was formed (SAHO, 2011). Homelands or Bantustans, displaced with them many poverty-stricken communities. The period from 1960 to 1994 was difficult as many people were forced to leave their homes and relocate elsewhere (Butler *et al.*, 1978 ). Ten homelands were created in South Africa (Butler *et al.*, 1978 ).

The formation of the Zululand Bantustan brought massive social change to many Africans. Many of them were forcibly moved from their homes in the colony of Natal to areas where the soil was not suitable for planting or growing any crops while being far away from the towns (Guy, 1996). White farmers were apportioned farms after the dispossession of land, including in areas where Africans previously had homesteads to plant crops, or graze cattle. Around Mthunzini a number of these farms were converted to Forestry plantations. Social change was also brought by white supremacy in the form of a migrant labor system to supply workers to the mines operating in the Transvaal, creating job opportunities that took many men away from their families (often to raise finances to pay local taxes) for long durations. Historically, traditional rule took priority, but this changed into more democratic rule, which will be discussed in the next section.

This is a clear indication of how contested the province of KZN has always been even before the incidence of contestation over mining at places like Fairbreeze. Today traditional leaders in the amalgamated province of Kwazulu-Natal, fall under the Ingonyama Trust Board (ITB). The Ingonyama Trust (IT) is a much-debated land authority that was signed by the late king of the Zulu nation Goodwill Zwelithini, in the presence of Mangosuthu Buthelezi, who was the founder of the IFP and Chief Minister of the KwaZulu Bantustan. The deal was signed with the apartheid government a few days before the democratic elections took place. The IT was created through the KwaZulu-Natal Ingonyama Trust Act of 1994, which was applied on the 24th of April, 1994 (Sithole and Ngonyama, 2018). The Ingonyama Trust Act (ITA) was altered in 1997 to create the ITB, which looks after the land falling under the IT (Sithole & Ngonyama, 2018). The ITB was in the spotlight, as being the ‘owner’ of customary/communal land in the province, and the body that issues surface leases to mining companies. Land authority is relevant to my research on the Fairbreeze mine, as the area the mine falls on, is still under traditional authority, and land administration for the communities who live there falls under the ITB. Many mine-affected communities experience some form of disadvantage in relations community members have with mining companies. The ITB therefore organized meetings, which were aimed to solve issues affecting interested and affected parties, including those about mining rights and operations. King Zwelithini had one important message, which was that traditional leaders must take charge of mining initiatives on their land to ensure that people benefit from these initiatives (Buthelezi & Yeni 2016).

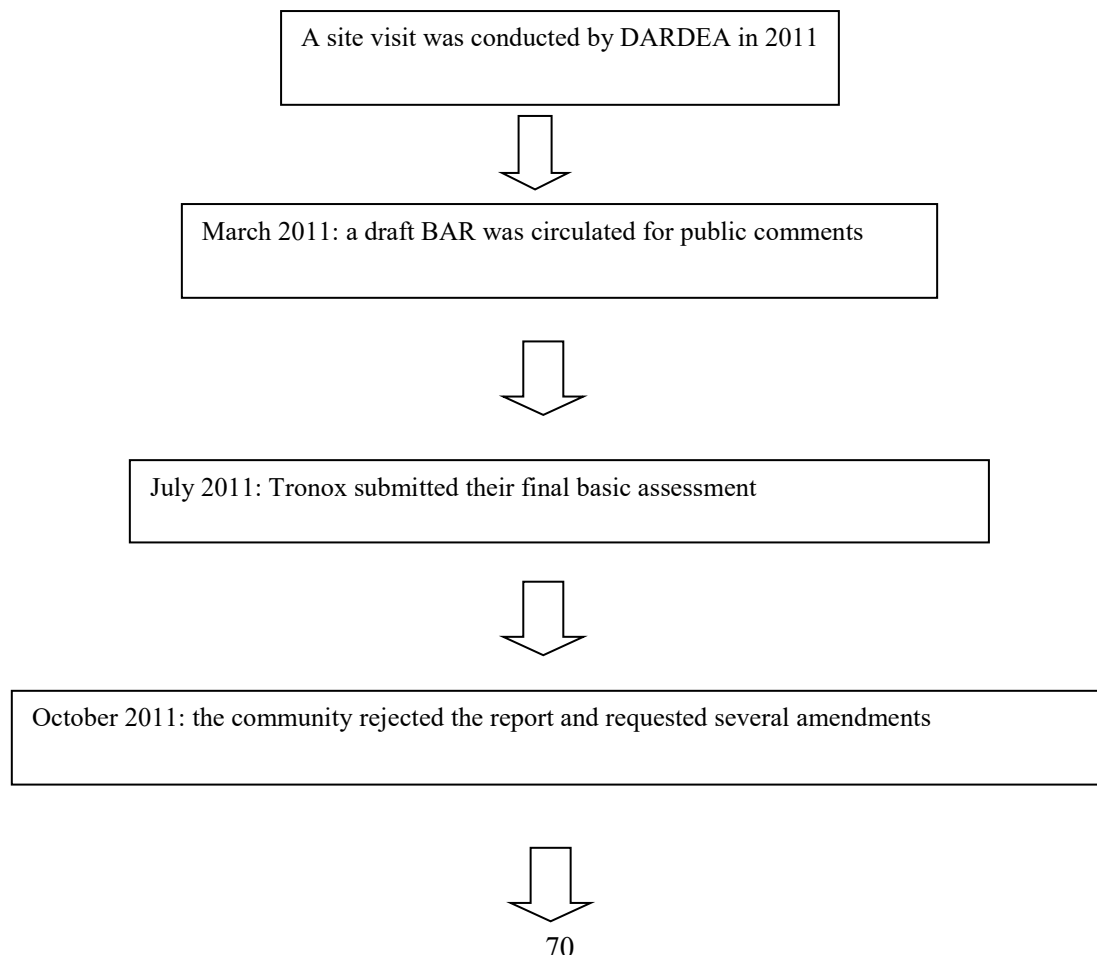
However, mining operations can result in environmental degradation affecting mining communities, if mine owners ignore the relevant legislation to be adhered to. Furthermore, if mining is done irresponsibly, it can devastate local ecosystems, and destroy traditional cultures and livelihoods; this is the case in many communities in South Africa (Duri, 2016). There is this tension over the rights of the people in rural areas as many laws tend to link traditional leadership, and the ITB and the rights of the people (Classens and Matlala 2014). The traditional leadership and Governance Framework Act of 2003 (the Framework Act), was initially created for the persistence of traditional leaders and ideas in traditional land. “This law made the chiefs, tribes, and tribal authorities created before 1994, the new traditional leaders, traditional communities, and traditional councils, respectively” (Classens and Matlala 2014, p. 12).

As per the above, the Fairbreeze and surrounding areas are a contested historical landscape. There has been a massively growing demand to mine in northern KZN. with increasing demand for HSM after the end of apartheid era isolation. As indicated in the Literature review, mining in northern KZN has commonalities that show that contestation at Fairbreeze is not an isolated case study, but embedded within a contested extractivist landscape.

## 4.2 Fairbreeze History and Timeline

The Fairbreeze area previously had commercial farmland area. In the early 1990s, the sugar cane industry was established in this area. This involved the clearing of indigenous vegetation to utilize the maximum area of the farms for commercial farming. The enhanced ecological status of the catchments in the area compared to the 1970s is directly related to the conservation and catchment rehabilitation efforts of Dr. Ian Garland, with the full cooperation and support of Mondi (BAR, 2012). Fairbreeze used to be referred to as Baton Rouge farm and was built in 1921 by the Talmage family, who occupied the land until the year 2000. The original buildings burnt down in the 1930s and various buildings have been added on since then (Anderson, 2010).

We know in this landscape from these examples that there can be contestations. I am now going to focus on Fairbreeze specifically. The Fairbreeze Mine is located within a rich biodiversity area. “The topography of the Fairbreeze area consisted of low hills and dunes lying parallel to the coastline” (Jikijela, 2013, p. 62). “The mine operation is located in the Siyaya catchment. This catchment falls within a marine protected area in the Mlalazi Nature Reserve (Jikijela, 2013). The Fairbreeze mine area and surroundings consist of agricultural land, including sugar cane plantations and small areas of other agriculture. There were small areas that remained untouched mainly because there were near wetland and riverine areas (Jikijela, 2013).



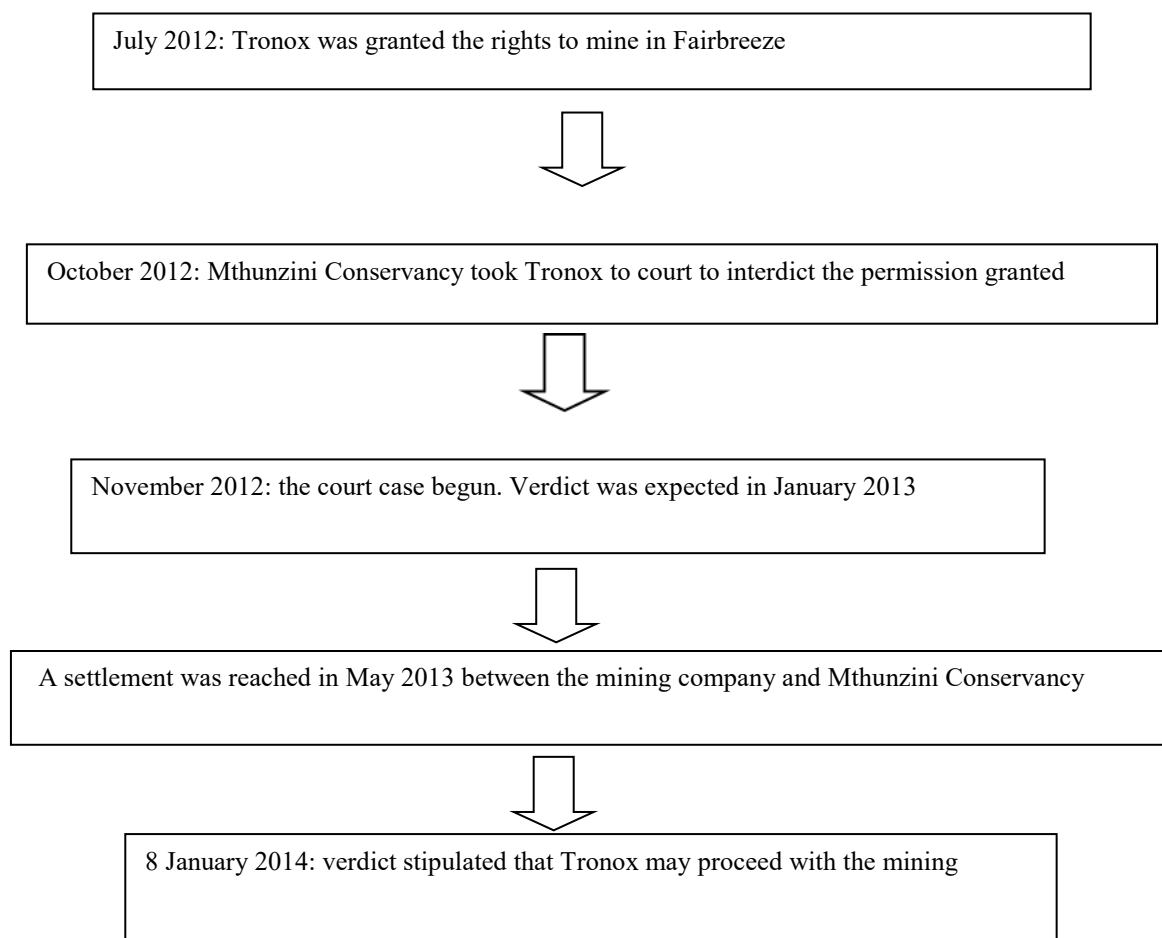


Figure 4.2 indicates the Fairbreeze mine timeline

As the timeline indicates above, there were many challenges that the Fairbreeze Mine faced in gaining the rightful authority to mine at Fairbreeze. There were many outstanding issues regarding the Fairbreeze project, which in the long run, communities were pacified to accept in their lives and surroundings. The processing of the Fairbreeze application and the different views of stakeholders resulted in many delays.

The department which was responsible for authorization, at that time was the Department of Agriculture Environmental Affairs and Rural Development; the Fairbreeze project Basic Assessment Report (BAR) was rejected, resulting in more delays, as there were outstanding specialist studies. According to community groups, Tronox didn't disclose the outcome of being rejected.

There was great resistance regarding the proposed mining operation by the affected communities. The interested and affected parties allied to prevent the commencement of the Tronox operations, and employed a private lawyer to deal with the legal aspect (Burnett, 2014). However, on May 24, 2013, Tronox announced it had reached an agreement and also had agreed on a settlement ([www.tronox.com](http://www.tronox.com)).

The contestation relating to the Fairbreeze mine was one of the contributing factors in the prolonged EIA process and granting of authorization related to the Fairbreeze mine, which will also be part of the next section's discussion. The court cases of the Fairbreeze mine show that the mine occurs in a contested extractivist landscape, where there were fights and disagreements between stakeholders about the mine. The EIA application included many I&A parties. The affected organizations included the Wildlife and Environmental Society of South Africa (WESSA), the Mthunzini Conservancy, the Wildlands Trust, the Mthunzini Residence Association, traditional authorities within the area, and surrounding community members. The Mkhwanazi traditional authority, under Inkosi Mkhwanazi and the Mkhwanazi community, were also directly affected, as well as the holders of the land under the Ingonyama trust, for the offset site referred to as portion 2 of Farm Kraal Hill No. 15871 in the EA (Elliott, 2014). Certain community members were also involved in a land claim to the land claims commission for the mine area, in the offset area referred to as Fairbreeze C extension in the EA, and other surrounding areas.

After years of protests and resistance Tronox finally received authorization to mine in Fairbreeze. Tronox KZN Sands (Pty) Ltd was granted environmental authorization in 2012 for some listed activities, which allowed for the mining of the mineralized dunes, along the stretch of land situated north of KwaZulu-Natal, immediately south of the town of Mthunzini (Elliott, 2014). The EIA was issued authorization for the mining of three ore bodies, the establishment of two residue storage facilities, a return water dam, a primary wet plant, and associated infrastructure, including offices, roads, power lines, pipelines, pumping stations, and storage dams. The mining site was largely located on eucalyptus and sugar cane plantations but did also contain riparian and wetlands areas.

As previously mentioned, there were many contestations over the EIA and mining authorization. The Mthunzini Conservancy mentioned that the Tronox mine did not see it necessary for the company to conduct a full scoping report for their mining operations. This is important about indicating that the Fairbreeze mine was a contested extractivist landscape. The interested and affected organizations, including the Wildlife and Environment Society of South Africa and Ezemvelo KwaZulu-Natal Wildlife, lodged similar objections, indicating like many other environmental organizations, that they also believed that the Fairbreeze mine application should have completed a full EIA and scoping report, not just a Basic Assessment. The EIA process and authorization affected numerous stakeholders. That is because before the EIA for the Fairbreeze mine was successfully granted and the mine commenced its operations, there were many processes, regulations, and procedures which needed to be considered at provincial and national scales. The table below details the timeline of relevant submissions and authorisations.

Key EIA Submissions	Details	Year
First investment	This was the first initiation Tronox proposed to the relevant departments of its plans to mine the dunes at Fairbreeze.	2005/2006
Court case	The community and the mining company were at loggerheads and appealing each other's decision in the court of law.	2010
BAR	The legal environmental document was finally submitted, after a long battle involving community members, NGOs, and Tronox.	February 2012
EIA Authorization	The BAR was finally given the go-ahead by the relevant departments.	12 July 2012
Mine opens doors	The mine started operating.	2016

Table 4.2 indicates the key EIA processes

### **4.3 Role Players and Stakeholders' Perceptions**

This section will cover the relevant stakeholders and role players who were involved in the Fairbreeze mine operation. This will be depicted in table 2 below which shows if a certain role player was in support of or against the mine. There were different stakeholders and role players regarding the Fairbreeze mine operation. The competent government authority was the KZN Department of Agriculture and Environmental Affairs (KZN DAEA), while the applicant was Exxaro Sands (Pty) Ltd, which was bought out by Tronox KZN Sands (Pty) Ltd in June 2012.

Lastly, according to Elliott (2014), the role players in the Environmental Impact Assessment (EIA) application included several organs of the state, which administered legislation related to the activities that required environmental authorization, particularly the KZN Regional Department of Mineral Resources (DMR), the Department of Water Affairs (DWA), the Department of Agriculture, Forestry, and Fisheries (DAFF), and the KZN Conservation Authority, as well as Ezemvelo KZN Wildlife.

Role player	Position on the mine	Reason
Environmental consultant	Supporting	In support of the mine's creation of job opportunities and the mining company funded community projects.
TA representative	Supporting	The creation of employment opportunities and improved economic stability.
Environmental specialist (Tronox)	Supporting	The mine has brought positive impacts in the area such as assisting local businesses and has brought no negative impacts
Business owner	Against	Will have negative impacts on the natural surroundings, but rehabilitation methods can be put into place
Business owner	Against	Likely to have negative impacts on the surrounding businesses.
Member of Mthunzini committee	Against	The communication had been fair between the mining company and interested and affected parties.

Table 4.3 indicates the role players in the Fairbreeze mine operation

The traditional authority (TA) representative was in total support of the mine. The TA representative had the role to ensure people would get equal access to jobs, and that there would be community improvement from the Fairbreeze operating mine. The Inkosi mentioned that the protection of the environment would be made a priority and that the rehabilitation plans were already available in the environmental plan, as needed correctly. The TA representative also indicated that communication between the interested and affected parties had been great from the start of the mining operation, although he did mention that, in meetings, the white middle class initially didn't want the mine; they would attend the community meetings with the mining company mentioned that was a sign on behalf of the rest of the absent Zulu community.

There were also benefits brought by the mine, which were the improvement of business ventures and people's livelihoods, as they would receive employment opportunities.

The one negative impact mentioned was the lack of a relationship between traditional leaders and communities, which was later resolved (TA Representative, 2018). I also discussed with an environmental professional for a consultancy, who stated a few positive impacts of the Fairbreeze mine. Communication between the mining company Tronox and interested and affected parties was good; he mentioned that he had worked on the public participation background, which was well executed, as per the National Environmental Legislation, and the involvement of the community was prioritized. Some of the positive impacts of the mine were that it contributed to the economy in the provision of employment opportunities, and sustained the jobs of the old Hillendale staff. The mining company also sponsored a few courses for the upliftment of the community (TA Representative, 2018). The TA and the environmental professional both agree that the operation of the mine brought positive changes and support to local companies and communities.

A local guesthouse owner was another participant I interviewed. She is also part of the Mthunzini Resident Association. She mentioned that she first heard about the mine around 2002 when she first moved to Mthunzini, and then, things related to the mine were quiet. She mentioned that the communication levels between the mining company and the communities had been good; however, when meetings were scheduled, the mining company would sometimes not come at all, as initially planned by all interested and affected parties. She stated that there had been some resistance to the commencement of the mine. She also mentioned that some of the positive impacts, that the mine was likely to bring about were that there would be benefits such as employment opportunities. She indicated that most of the money would end up in the politicians' pockets. Further, she recommended that the country should possibly look into having its own manufacturing company, instead of sending the mined minerals overseas and growing their economies (Guesthouse Owner, 2018). On the other hand, the guesthouse owner said there were negative impacts associated with the mine as well. The landscape of the area, especially near the beach, was destroyed, as there were big red layers of sand visible to visitors and tourists at the beach. Other members of the community in Mthunzini had complained about dust in their swimming pools. Another negative impact was the constant high-pitched sound coming from the mine, which made noise 24 hours a day; but as a result of members of the community's complaints about this noise, they have since been replaced with low-frequency sounds. Rehabilitation measures were also put in place; the guest house owner mentioned that the first block had already been completed, and moving forwards, approximately 60 hectares were expected to be rehabilitated. Lastly, she mentioned that the mining company ought to stick to their promise of not destroying the Mthunzini town for good, as it was a coastal town that attracted many tourists annually (Guesthouse owner, 2018).

My other participant was a local business owner. He mentioned that the communication levels between Tronox and affected parties had not been too bad, as the mining company was available at public meetings. Most meetings of interested and affected parties were held at the Trade Winds Hotel. He also mentioned that since the mine had started, he had heard machines working on the mine and had also witnessed slime dams, which he believed would affect tourism in the area. He mentioned that he believed in mining and development, as South Africa has many minerals that support a large economic base and was of the opinion that some rehabilitation methods were already in place and looked okay. He also added that some of the negative impacts included dust, which many people complained about, noise, a large percentage of vegetation and trees being removed, and the environmental centre also being affected by the red water appearing there from the Fairbreeze mine (Local business owner, 2018).

There was a participant that I interviewed who was involved in the subcommittee of the Mthunzini Conservancy. She assisted the committee by taking notes. When I asked her how the communication between Tronox and the affected parties had been, she replied by saying that it had been fair. She mentioned that at some stage Tronox had cut ties with the Mthunzini environmental organizations. The committee participant mentioned that some of the positive impacts of the Fairbreeze mine were that people benefited from jobs, and that business near the mine had increased and improved during the construction phase of the mine. With regards to resistance towards the mine, she admitted that there had been some, including from the Mthunzini Residence Association and the Mthunzini Conservancy. It began in January 2011 with a campaign launch that lasted for five years, trying to stop Tronox from commencing with the mine in Fairbreeze (Member of the Committee, 2018).

According to a mining company representative, the mining company had brought nothing but benefits and positive changes to the Fairbreeze area. They had been sponsors to local schools and in the provision of technological equipment to enhance skills for learners. The skills had also improved at a local business, with many getting employed at the mining company. Regarding adhering to the environmental legislation, the representative indicated that the mining company had followed the correct protocol from beginning to end, hence it had been granted permission to mine in Fairbreeze (Tronox environmental representative, 2018). Therefore, this indicates that most stakeholders agreed that the Fairbreeze mine operation created employment opportunities and benefits for many impoverished households. The company representative mentioned above only indicated positive impacts from the mine and no negative ones. It was a confusing matter as other stakeholders I spoke with, had spoken of extent negative impacts, to some extent.

There was also an agreement, that some of the negative impacts that the mine brought were dust particles which affected the health and respiratory system of communities based close by, as well as the removal of a huge area of vegetation, and the destruction of ecosystems in the area. There was an agreement amongst the role players that the communities and affected parties had been in a legal battle with Tronox for a long time.

The dragging of the court case regarding the Fairbreeze mine indicated that the SLO in Fairbreeze was weak and that the landscape was a contested extractivist landscape, which was depicted by the disputes which occurred between the mining company and the communities before they were pacified as previously mentioned. The stakeholders had certain expectations regarding the development of the area, once Tronox began mining and the next section will be discussing that aspect. However, the court case was later settled and the environmental organizations were initially against the mine and fought to the end to ensure the operation did not occur, later came to an agreement with the mine. The terms of the settlement were based on the foundation that the mining company Tronox takes care of its own legal costs relating to the court battles at the Durban High Court judgement and in exchange, the Mthunzini conservancy will drop its Supreme Court of Appeal application (Grebe, 2013). The Mthunzini representative responded by indicating that they welcome this settlement and agree with the mining company Tronox's stance that ongoing consultation and open communication with all stakeholders is highly recommended. There is a clear indication of which stakeholders supported the mine and which stakeholders were against the mine. There is however a change in relationship between the business owners in and around Mthunzini and the mining company that takes place over time, eventually accepted the mine in the area (Grebe, 2013).

#### **4.4 Contestation over the Fairbreeze Mine**

As mentioned previously in an earlier chapter 'the environmentalism of the poor' is a term used in situations where poorer communities are associated with environmental systems. Such examples include social justice claims, including from poorer communities who are fighting their current government and including impoverished populations struggling against the state or private companies that plan to threaten aspects of their lives and livelihoods (Martinez- Allier, 2002).

On the other hand, the environmentalism of the rich aims to legitimize and secure the economic interests of the elite, by adopting an environmental discourse and ecological rationales such as conservation, the adoption of clean technologies, organic food production, and the mitigation of environmental damage, that do not structurally disturb the logic of capitalist accumulation (Garcia *et al.*, 2012).

About the Fairbreeze mine, both aspects of environmentalism were found. Firstly, in the case of environmentalism of the poor, there were protests associated with that where people were depicting their dissatisfaction with the mine in their area. On the hand, the environmentalism of the rich was also another form of contestation depicted through court cases which indicated that residents were contesting the mine being in their area.

The contested nature of extractivism in northern KZN was reflected at the Fairbreeze mine, as some stakeholders opposed the commencement of its operations. The I&A parties surrounding the Fairbreeze mine were divided. The disagreements from affected parties that occurred regarding the mine development can be considered a contributor to contestation. There occurred to be some division between the I&A parties: some were in support of the mine, while others were against it.

The members of national and international mining capital, in alignment with local tribal authorities, were pushing for the HSM to commence as soon as possible, citing job creation and development. From the beginning of the inception of the Fairbreeze mine the municipal authority of the area, UMLalazi Municipality appeared to be split down the middle with the mayor coming out in support of the mine but officials of the municipality supporting the Mthunzini Conservancy in their quest to ensure that Tronox KZN Sands (Pty) Ltd obtained local planning authorization for the mine (Humbmbly, 2017). The unhappiness of the stakeholders and associated parties lead to them contesting the mine.

The Community members were unhappy over the alleged lack of communication between the mining company and themselves, as well as unfulfilled promises. It was mostly young unemployed youth who protested, with an estimated 60 people getting arrested (Erasmus, 2015). The Fairbreeze mine was expected to increase job opportunities (Erasmus, 2015; Carnie, 2012), however, Tronox decided not to hire any new workers, but to recruit from the old mine in Hillendale (Carnie, 2012). Complaints regarding the lack of communication between the mining company and relevant stakeholders involved; this is because community members felt they were entitled to be part of all decisions regarding the mine and their neighbourhood.

The people in and around the mine inclusive of the three local communities attended indicated that there were initially in total support of the mine as they thought the mine would bring economic relief into their livelihoods. They were unfortunately disappointed when they realized that the mine had not kept to its promise of employing the locals as after the mine started operating many young people were left unemployed. This indicated the change in the relationship between the mining company and the communities involved. These community members initially trusted the mine to bring an economic upliftment into their area but were eventually disappointed and gave up on the mine when their promises were not kept by the mining company, which left the communities with little or no hope at all regarding the mine.

Another respondent while communicating with him indicated that “The mine had taken the Hillendale mine staff and many of the surrounding communities were excluded” (Respondent, Ogagwini, 2018). This therefore lead to the protest action which as previously mentioned occurred along the National Road the N2.

## 4.5 Community respondent perspectives on the mine and its impacts

Community perspectives are detailed below to show how respondents felt regarding the Fairbreeze mine. These perspectives are very important in this discussion and analysis as they indicate what the questionnaires indicate. There will be graphs and a table that will display the three different types of communities, which were visited during the site visit. There will also be an indication of the gender of the respondents and finally, a table will depict the reports of the social impacts of the mine

**Table 4 indicates the areas affected by the mine**

Areas Affected	Numbers of respondents (N=50)	Percentage of the sample
Kwa-Nzuza	5	10% of the 50 people I communicated with
Obanjeni	15	30% of the 50 people I communicated with
Ogagwini	30	60% of the 50 people I communicated with

Table 4.5 indicates the areas affected by the mine

Table four above indicates more than half of the community member respondents that I communicated with were from an area known as Ogagwini, which is the closest village to the mine. Another area I visited and interviewed people in an area known as Obanjeni where 15 people were surveyed, while the last area is known as Kwa-Nzuza and consisted of the smallest sample as the village is the furthest from the mine. communities there referred me to either Obanjeni or Ogagwini areas because they felt those communities could comment more reliably.

Gender	Kwa-Nzuza	Obanjeni	Ogagwini
Female	10%	30%	60%
Male	20%	30%	50%

Table 4.5.1 indicates the gender of the respondents

The table above indicates most of the community members communicated with were female. The main reason for that was that most households had middle-aged women who remained in the house during the day whilst the men were normally at work, or absent. Most of the households had older people available as young people either were at work or didn't stay around because of work purposes. Some of the homes however had a younger group who indicated during our conversation that they had been excluded from the Tronox hiring methods and felt let down by their induna/ Inkosi as a result.

In other areas, they also communicated that they had been unemployed for the longest of time but remained hopeful Tronox will eventually consider them as well regarding employment opportunities.

Social Impacts	Kwa-Nzuza Total - 5	Obanjeni Total = 15	Ogagwini Total = 30	Percentage of overall sample
Received Sponsorship of skills courses	0/5	5/15	10 /30	15%
Knowledge of residents I spoke to regarding Conservancy projects initiated	0/5	2/15	4/30	6%
People that I communicated with who had the knowledge of Schools Funded by Tronox	1/5	3/15	2/30	6%
People that had participated in a recycling initiative in the area	1/5	2/15	2/30	5%
Respiratory Issues affecting community members in the area	0/5	7/15	16/30	23%
Dust affecting communities in area	2/5	5/15	10/30	17%
Noise affecting communities in the area	5/5	13/15	22/30	40%

Table 4.5.2 above depicts reporting of the social impacts of the Fairbreeze mine

The table above indicates that the Fairbreeze mine had a few social benefits but not many people in the sample benefited from them. That would be because the benefits were sometimes received by well-connected individuals while the majority of the people were excluded. Local schools benefited slightly as well from the mining operation. The creation of employment opportunities took priority to ensure that the SLO of the mine remains in place and to prevent disputes and protest actions. Some people were recruited from the previous Hillendale mine which prevented a large number of people in Fairbreeze to get employed. The table also indicates that negative impacts affected communities, impacts which were previously not there but once the mine arrived the communities did see a change in their environment.

<b>Areas affected by the mine</b>	<b>Total Number of people</b>	<b>Brought change into livelihoods</b>	<b>Didn't bring change into livelihoods</b>	<b>Not affected by the mine operations in the area</b>
<b>Kwa-Nzuza</b>	5	1/5= 20% of sample	1/5= 20% of sample	3/5= 60% of the sample
<b>Obanjeni</b>	15	6/15= 40% of sample	5/15=30 % of sample	5/15=30 % of the sample
<b>Ogagwini</b>	30	12/30= 40% of sample	9/30= 30% of sample	9/30=30 % of the sample

Table 4.5.3 indicating the perceptions from communities of the Fairbreeze mine

The above table indicates that Kwa Nzuza there indicated the same percentage for an improvement of their livelihood same amount for non-evident of improved livelihoods. There is an indication that 60% of the population felt unaffected by the operation of the mine. The main reason for that would be because Kwa-Nzuza seemed to be the furthest from the mine of the three areas.

In the community of Obanjeni, 40% of residents felt the mine brought improvement into their lives, while 30% felt no change was brought from the operating mine in their area and another 30% were unaffected by mine operations. Lastly in Ogagwini, 40% of the residents felt Tronox had granted them an improvement to their livelihoods. The other portion 30% felt Tronox hired more outsiders than locals and complained of being unemployed for a long time and another 30% were unaffected by the mine operation in the area. The reason for more people being employed in this area could be because the induna of the area was located in Ogagwini so could easily organize workers for the mine.

Other negative impacts were reported in interviews. For instance, “Tronox must employ local people, not everyone must be outsiders” One of the respondents commented on this aspect this is an indication that the community is not happy with the mining company hiring policy for the Fairbreeze mine (Respondent, Ogagwini, 2018). Another respondent commented that “Communities are fighting among each other regarding employment opportunities regarding the mine” (Respondent, Ogagwini, 2018). Finally, another respondent commented that “There is a person who died during a strike” This person was hit by a car during a protest action (Respondent, Obanjeni, 2018). This can be considered as a negative social impact especially because it leads to a loss of a human life.

Finally, another respondent indicated that participant saying that, “Tronox has played a role in these social initiatives, which include a transfer station, recycling project in Obanjeni School, alien vegetation clearing, as well as enhancing some previously disadvantaged households” (respondent, Obanjeni, 2018).

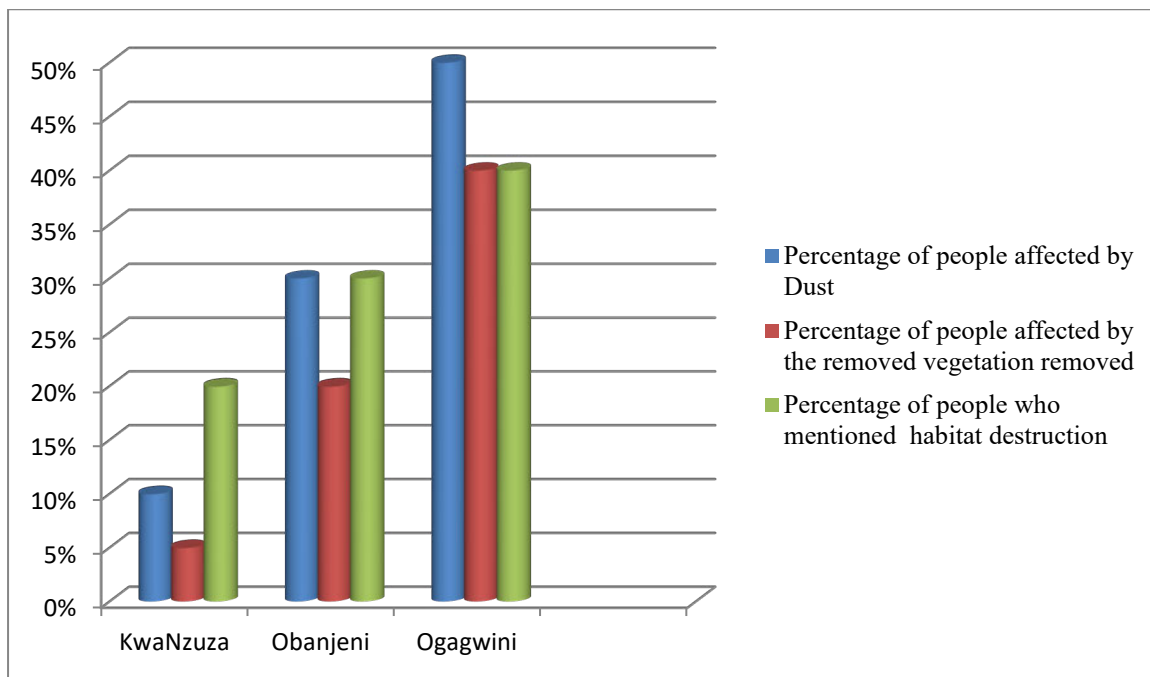


Figure 4.5 Bar graph indicating the environmental impacts of the Fairbreeze mine

The bar graph indicated above indicates the environmental impacts endured by communities living within the mine operation. There is an indication that the greatest percentage of people from Ogagwini were affected by dust, and they even communicated that it has a major negative impact on the people with asthma in the area. The least number of people complained regarding the dust from Kwa-Nzuza as they are located further away from the operation.

The residents in Ogagwini also commented the most regarding the removal of vegetation before the mine commenced its operations. They mentioned that the area used to be sugar cane and forestry before Tronox started operating. There was an indication from all the areas that animals had been affected and have had to relocate to new habitats to adapt to adjustments of their disturbed ecosystem by the mining operation.

## 4.6 Conclusion

This chapter discussed that Northern KZN is a contested landscape, with a complicated history. The chapter contextualized the Fairbreeze area in Zululand, and northern KZN, as an example of a contested extractivist landscape. The second element of the chapter was the Fairbreeze history and timeline and the occurrence of events regarding the mine. The third element was the relevant stakeholder’s perspectives, which will be followed by the contestation of the mine where I briefly introduced extractivism about environmentalism of

the rich and poor. The last element of this chapter included the community responses and perspectives which were accumulated during my fieldwork and will be portrayed as tables and graphs and relevant quotes.

## **CHAPTER FIVE: DISCUSSION OF THE CHANGING RELATIONSHIP BETWEEN STAKEHOLDERS AND THE MINE**

### **5.0 Introduction**

In chapter four I detailed that there were protests and contestations about the Fairbreeze mine, and set out the different stakeholder perspectives on the mine, importantly showing proximate community responses drawn from my sampled respondents. There is an indication that the mine had a number of environmental impacts but there were also benefits that favoured surrounding communities as mentioned in earlier chapters. In chapter five, the discussion takes us into the perspectives of the mine communities affected, the positive and negative externalities of the mine, and how the relationship between them and the mine seems to change over time. Though there was initial strong resistance regarding the mine example such as protests, characterized as a form of environmentalism of the poor, and court challenges from white middle-class Mthunzini residents (characterized as a form of environmentalism of the middle class), there were still broader expectations on the part of host communities of job creation. However, Over the years, the respondents questioned the mine and the promises the company had made to the people, particularly regarding jobs, and yet the mine continued, and overcame the opposition, for example, through the compensation or settlement agreements that occurred between the mining company and some environmental organizations. I will attempt to address and interpret these phenomena in this chapter.

The following sections will also be included in this chapter. Firstly, there will be a discussion on benefits and externalities. The second section will be communication relations, which will be followed by an analysis drawing on the main concepts of SLO and pacification. An SLO is one of the key concepts in this research and it relates to the relationship the communities and mining companies shared. The SLO is a theoretical concept that grants an institution the right to carry out business after permission has been granted from relevant stakeholders (Taylor and Mahlangu, 2017). The weak SLO was a result of the initial opposition the Fairbreeze mine was faced with, including protests and pending court cases associated with the mine; this gave a clear indication that I&A parties were not in agreement with the mining company. Some mining companies place more value on transactional compliance, while many communities perceive the quality of the relationship as the basis for granting an SLO (Thomson and Joyce 2008). Pacification is a concept to discuss the changing relationship between stakeholders and the mine, and how a relatively stable mining environment was produced amid contestation.

## 5.1 Benefits and the Externalities of HSM at Fairbreeze

Mining companies in recent years have been pushed to take more responsibility for their actions in mining operations – those costs and benefits that directly or indirectly impact neighbours – and are called externalities. “The mining industry has been deeply concerned about the externalities of the environment” (Polanska *et al.*, 2011, p. 22). This section about benefits and externalities is an important one, as it distinguishes between the positive and negative effects the Fairbreeze mine had on communities. As much as there were negative impacts, there were also positive contributions and funding made by Tronox to nearby communities, which assisted in improving livelihoods in and around the area. I will start by discussing the benefits. This could be the reason why the opposition was overcome and how the relationship between the mine and the stakeholders changed over time.

### 5.1.1 Benefits

The mining industry provides a lot of benefits. “Those include the use of natural resources for consumption, employment opportunities, salaries, as well as contribution to tax revenues. From this perspective, it is a very important industrial sector with a positive outcome for society” (Polanska *et al.*, 2011, p. 22). This sub-section aims to investigate the positive impacts associated with the mine and how we can use that to highlight the relationship between the communities and mining companies. Some of the benefits of the Fairbreeze mine were that people benefitted from the creation of employment and business opportunities in the area during the construction phase (Mine Committee Member, 2017). There is a clear indication that many respondents I interviewed pointed to the creation of employment opportunities. The mining company also had certain programs running within the community that was meant for community upliftment (Respondent, 2018).

Another benefit was the creation of entrepreneurship opportunities that resulted from the mine’s operations (Respondent, 2019). One respondent indicated that there was an initiative of making concrete blocks to assist community members to up-skill themselves (Respondent, 2019). Other benefits of the Fairbreeze mine were the provision of Adult Basic Education and Training (ABET). ABET provides an opportunity for employees to study further and become more numerate and illiterate. These classes are expected to run for the next four years and class is dependent on participation from the employees. (SLP, August 2020). According to the company “Participants for learnership programs (that) are sourced from local communities, as well as entry-level internal employees who display interest and potential to participate in such programs” (SLP, 2020, p. 27). There is a scholarship program sponsored by Tronox for welding and it pays a R1500 stipend" (Local teacher, Obanjani location, August 2017). Tronox also contributes to funding a bursary program initiated for students lacking the finance to pursue their studies in University.

The bursary covers the student's undergraduate-level qualification. This is a good initiative as it ensures that there is a surplus of skilled individuals for employment opportunities in the future (SLP, 2020). However, in my sample of fifty people only five were made aware or knew something relating to the bursary at Tronox. This shows that only a very few were made aware of educational opportunities and possibly through a family member/ relative working at Tronox. The granting of education offers from the mining company to the communities indicated that the SLO was to some level starting to be strong between the two parties and would eventually be obvious when the communities were pacified about the extractivist operation at the Fairbreeze mine. The provision of these opportunities and benefits to the community was the foundation for communities being pacified. This shows that the relationship between the mining company and communities had indeed changed over time from the disputes and protests to the pacification stage.

Programs that are socially driven can also bring about positive impacts. "Tronox KZN Sands prioritizes HIV/AIDS programs as they want to deal with the impacts HIV/AIDS has on their employees, family at large, and community surrounding the Tronox Fairbreeze mine. Prevalence testing is done annually, voluntarily, and currently 98 Tronox employees are receiving antiviral treatment" (SLP, 2020, p. 54). New projects as per this social and labor plan have been identified through a community needs analysis via Traditional Councils and IDP alignment from 2018-2022" (SLP, 2020, p. 48). Tronox KZN Sands is also involved in local economic development programs that uplift previously disadvantaged communities in the Mthunzini/Fairbreeze areas, in education, health, business development, and skills development. Tronox also sponsored some local social initiatives in the area. Such efforts are intended to smooth the acceptance of the mining into the community.

### **5.1.2 Intertwined Social and environmental externalities**

Externalities arise when the actions of one actor create costs or benefits for others that are not captured by contractual relationships. According to Stantcheva (2017, p.3), Externalities are a result of the actions of one person directly affecting another person outside the market. For example, a steel plant that pollutes a river used for recreation. An externality is the impact one party may have over the other party (Miller, 2007). Externalities result from an action of one party on the other party. The action one takes might negatively or positively affect another person. In a mining environment, externalities are impacts that resulted from the mine. The externalities in the section below have been divided into two categories. I will first discuss the social externalities and then the environmental ones. The Fairbreeze mine has negatively impacted tourism, the heritage, and social aspects of communities. The mine is located 100m from a coastal resort town, which generates most of its income from ecologically-based tourism (Carnie, 2012). Some of these negative impacts include dust, noise, and visual impacts (SLP, 2020, p. 48). Another negative externality was the impact on the aesthetics of the landscape, as previously mentioned, which added a new man-made disturbance to the existing character of the landscape.

The construction of the storage facilities built from soil excavated from the dunes caused a major disturbance to the aesthetic environment and impacted negatively on the sense of the place (BAR, 2012). The cause was primarily the removal of vegetation, which included plantations and cane fields, and the exposure of large areas of red soil; this would contrast dramatically with the existing green hues and textures of the landscape. HSM resulted in the removal of large hectares of vegetation exposing unprotected surfaces, where winds can trap dust. Material handling operations may also generate dust (BAR, 2012).

The environmental professional I spoke to indicated that “some of the environmental impacts of the mine was the siltation of local streams.” Additionally, it was noted that “vegetation has been removed and when the rains come, everything gets washed away” (Respondent, Ogagwini location, March 2018). In particular, there are reports that the Siyaya stream has had red silt visible and dust has also been a significant problem (Business owner, Mthunzini, August 2017). The other environmental externality was that “vegetation was removed, resulting in soil erosion and the type of mining occurring led to habitat destruction chasing away animal species. A person in and around the area mentioned “of the environmental mine was that chunks of vegetation including trees were removed which lead to the suffering of wildlife. Open cast mining results in soil erosion and environmental degradation, as bushes were removed and animals lost their homes” Business owner, Mthunzini, August 2017). It was also indicated that “there has been the destruction of habitats and ecosystems, which has directly impacted on the food chain of the area” (Local teacher, Obanjeni location, March 2018).

The farmers in the area were also affected, as their crops for sugarcane in the Mthunzini area have struggled over the last 5 years, and therefore the land is currently not in high demand as it had previously been before the mine started operating. “The soil was impacted negatively, as the topsoil resource got damaged resulting from past and current agricultural practices in the sedimentation of local watercourses. A large area of soil has been likely exposed through the removal of essential vegetation” (Respondent, March 2018). Lastly as previously mentioned earlier communities were fighting court battles resisting the mine to commence in the area because of the environmental impacts mentioned above. Despite these concerns, and as the years progressed, court cases and resistance died down and communities were seen as accommodating the mine in their area.

## **5.2 Communication Relations**

Before the mine started operating in the area and even during the time the mine operated certain NGOs and environmental organizations were formed to ensure that there was transparency between community members and leaders as much as possible. These organizations assisted in communication channels that were about the Fairbreeze mine. The other purpose of the organizations which were created was mainly for the smooth operation of the mine, associated communities, and relevant stakeholders to prevent disputes such as protest actions. The role players often communicated through a network and advised each other regarding the way forward.

The stakeholders who were involved in the planning of the mine, operated at different scales of importance. For example, the government departments were essential in the authorization of the mine, followed by traditional authorities, NGOs and the public, and communities at large. The TA was considered to be the most relevant stakeholder in the Fairbreeze mine. This section is relevant as communication was relevant to how the perspectives of affected stakeholders changed over time.

Several groups were initiated in relation to the Fairbreeze mine operation. The Mthunzini Conservancy Committee was consolidated before the Fairbreeze mine dispute. After the dispute another group known as the Direct Neighbouring Community Forum was established to work with Tronox. There was also a farmers' forum, as well as a project forum, which met three times a year to discuss the Fairbreeze mine. Then, there was the Safety Health Environmental Committee covering both Fairbreeze and Hillendale mines, which met once a year to discuss health and safety-related issues. Lastly, there was the Amakhosi Forum, which included traditional authorities' views, solutions, and recommendations on behalf of communities.

The communication regarding the mining in Fairbreeze included the traditional authorities, relevant government departments, NGOs and groups described above, and interested and affected parties. The first group who Tronox communicated with was the Traditional Authority, including the higher hierarchy members of the affected community. The TA then proceeded to communicate with the izinduna of the Ogagwini area. The izinduna are the ones who then communicated with the community members.

The communities felt that the communication between the TA and Tronox was not effective, as there were negative impacts in their communities brought forth by the mining operations that were not mitigated (Member of Mthunzini committee, 2017). As previously mentioned, there were disputes which erupted between the chiefs/amakhosi/izinduna and the communities affected. One resident was quoted as saying, "There have been fights and disagreements between the Amakhosi and affected communities" (Respondent, Obanjeni location, August 2017). Clear communication is very important when it comes to mine-affected communities and plays an important role in research. This is because the community members are the people who are directly affected, and can determine how successful the mine will be in their area. Initially, the communication levels indicated exclusion, "The TA structure excluded communities and took decisions on their behalf behind closed doors" (Respondent, Ogagwini location, March 2018).

The communication relations are interlinked to stakeholder engagements. Stakeholders have a major role to play in any community project/ development if it is going to be a success or failure. In the case of Fairbreeze Mine, some stakeholder engagements were unsuccessful. This was created by the changing relations between the mining company and communities. According to a member of the MRA, communication between Tronox and affected parties "was not completely satisfying, as some meetings that were called, the mining company would not come" (MRA representatives, Mthunzini, August 2017). This is a clear sign that the mining company did not prioritize stakeholder engagement as it should.

As previously mentioned in chapter four under role players interviewed, most of them agreed that initially, the area around the Fairbreeze Mine had a difficult stakeholder relationship but during the course of duration the relationship between the mining company and affected parties changed for the better. This shows a clear picture of how the relationship between affected stakeholders for the Fairbreeze mine has been changing over time. That would be because initially there were disagreements, court hearings; protests that all indicate a weak SLO but as the years progressed communities as previously mentioned were pacified resulting in better stakeholder engagements.

### **5.3 Social License to Operate**

A Social License to Operate is measure of acceptance within the local communities of companies in general and more so mining companies and their operational activities. The credibility of a company is dependent on honesty and open communication within the local communities. Starting on the right foot with the community will improve the company's reputation immensely (Nelsen, 2005). As previously mentioned in chapter two a social license to operate (SLO) can be defined as an informal right that a mine is required to get from interested and affected parties, to pursue mining operations. A social license to operate can also be regarded as an implicit approval of a mining company to operate in that specific community/environment. The success journey of mining companies depends on the type of communication levels the company maintains with communities. According to Viega *et al.*, (2001), it is the mining company's responsibility to ensure that their working relationship with communities is a good one. A mining company must gain an SLO through their working engagement with communities, as it can't be applied for. Initially, when the company starts operating, it must do everything expected from the community, to ensure a good working environment (Nelsen, 2005). An SLO is a relevant concept that highlights a good understanding between affected stakeholders. (Dobra, 2014). The community has massive power and influence which can determine what the outcome of the mining development will be (Prno & Scott, 2012).

In the Fairbreeze mine case, the SLO was weak because there was a lot of opposition regarding the commencement of the mine. There were protests which were related to the mine, which was a clear indication that there was no clear understanding between the mine and the affected communities. Furthermore, as indicated above there were shortcomings in communication, with community members in particular feeling there was a lack of communication from traditional authorities. A respondent I spoke with indicated that "there is no form of communication between Tronox and the residents that she knows off". Another resident stated that "communication has not been good, as protests have been happening with communities wanting to be employed by Tronox (Respondent, Ogagwini location, March 2018). Many court cases occurred in attempt to prohibit the mining operations in Fairbreeze from commencing. Protesting communities also indicate a weak SLO whilst a strong SLO is characterised by the absence of protest action.

As mentioned previously in an earlier chapter ‘the environmentalism of the poor’ is a term used in situations where poorer communities are associated with environmental systems. Such examples include social justice claims, including from poorer communities who are fighting their current government and including impoverished populations struggling against the state or private companies that plan to threaten aspects of their lives and livelihoods (Martinez- Allier, 2002). In the Fairbreeze mine case study the environmentalism of the poor can be easily depicted in protests actions which took place in the area as a result of the mine operation. Communities in and around the Fairbreeze area embarked on a protest as they felt they had been denied employment opportunities which they were promised at the initial phases of the operation and felt unfairly treated therefore embarked on a strike. Others in the communities initially had faith and trusted that the mine would bring economic opportunities to their area but unfortunately, those same communities were disappointed that the mine did not live up to their promises hence protest action and contestation thereafter followed. This also shows the change in the relationship between the affected communities and the mine as communities initially were welcoming towards the company but in the end, they were left disappointed.

On the other hand, the environmentalism of the rich aims to legitimize and secure the economic interests of the elite, by adopting an environmental discourse and ecological rationales such as conservation, the adoption of clean technologies, organic food production, and the mitigation of environmental damage, that do not structurally disturb the logic of capitalist accumulation (Garcia *et al.*, 2012).

The environmentalism of the rich can be associated with the Fairbreeze mine as the elite minority were attending court cases and paying lawyer fees to prevent the mine from starting their operations in the area. The TA representative indicated that “the resistance that occurred related to the Fairbreeze mine, was that the white people, who had been running businesses in and around the area for many years, opposed the mine” (Inkosi, Mthunzini Restaurant, August 2017). According to a committee member who was part of the MC, she mentioned that, “there was resistance from January 2011, (the time of the) campaign launch, till 2016, relating to the two organizations: The Mthunzini Residence Association (MRA) and the Mthunzini Committee MC” (Committee member, Mthunzini, August 2017).

Another member of the MRA I spoke to indicated that “there was resistance, especially from the Mthunzini Conservancy and Mthunzini Residence Association. This was possible because, as a respondent put it, there was an environmental lawyer who was very good in delaying the commencement of the Fairbreeze mine, for approximately five years, during which time the two organizations received financial assistance overseas to assist with legal costs” (Committee member, Mthunzini, August 2017).

This indicates that the SLO was weak as diverse groups were contesting the mine. This parallels other case studies of HSM. For example, in the QMM case in Madagascar communities were dissatisfied with broken promises leading to resentment from affected communities (Huff *et al.*, 2018). In the Fuleni Prospective mine there was a weak SLO and resistance from environmental organizations against the initiation of the mine and protest action.

There was a weak SLO for these mine protests and court hearings were evident over issues where people's houses were cracking, the removal of gravesites, and noise and dust pollution (Hayes, 2018). In the St Lucia case study mentioned in the previous chapter numerous petitions were being signed, massive support from environmental organizations (Carnie, 2018). This therefore indicates that there was a weak SLO for this prospective mine. Lastly in the Kliprand case study, there seemed to be a disturbance of gravesites, noise, and loss of farmlands and stock (Prins, 2013). There was a weak SLO for this mine operation, as the mine successfully started its operations in the area. This peace disturbance indicated a violent element which will be my next topic of discussion.

## **5.4 Pacification**

The concept of pacification entails how dissent and contestation are diminished and a conducive environment for mining, or other kinds of order, are imposed or reinforced. The traditional leaders and environmental groups pacified on behalf of the communities involved. Pacification is an important concept used to interrogate mining in KZN. We know that there is a weak SLO based on facts and analysis but the mine still went ahead with its operations. Pacification as previously indicated in chapter two is defined as a process to transform conflict towards a more sustainable, peaceful relationship (Lederach, 1997, p. 84-85), or at least one less overtly or directly violent and contentious. In this sense "pacification is violence that, when it operates effectively appears as an absence of violence" (Huff and Orengo, 2020). While promoting peace, pacification can thus also have a dark side to it which I will discuss in this section as well referring to other mines.

The type of pacification at Fairbreeze Mine was more silent and done behind closed doors. The court cases and settlement plans which were put in place can also be characterized as pacification and the reason would be communities backed down and accepted the mine. This pacification indicates that politically driven decisions are behind the pacification that we eventually saw in the Fairbreeze mine case. This shows how a changing relationship has occurred between the mining company and communities. A portion of the communities received an out-of-court financial settlement, while another part of the communities was pacified using sponsorship of a local school, and the development of a computer centre at that school.

The 'pacification' of relations between the mining company and communities can be linked to economic opportunities the mine brought forth. Communities who initially resisted the mine were later seen to be more accommodating because of the economic opportunities the mine provided. While some disagreements occurred between the traditional authorities and affected communities, communities were promised employment and they were yet to see those employment opportunities hence their relationship regarding the mine changed as they felt let down. The professional Environmentalist mentioned that the "resistance which occurred was related to jobs mainly (Environmental spokesperson)". Another stakeholder I spoke to indicated that "the mine contributes positively to the economy of the area through the provision of employment and sponsoring a few courses".

Theoretically, pacification may be seen as a form of discipline to ensure that work is carried out (Rigakos, 2016). Most directly there was a process of pacification to diminish resistance and opposition to the mine. Initially, communities complained about the environmental issues the mine would bring into the area. This shows how the relationship changed between the mining company and the stakeholders. Pacification can also be an indication of re-ordering, which can include changes to the Fairbreeze area before the mine operations started to changes in the area after the mine operations. The re-ordering can also include overcoming the opposition of white minority/environmentalism of the rich as well as providing an environment where communities would welcome the mine it is also inclusive of the expectations of the blacks in the area when the mine first started, they were looking forward to jobs resulted in them supporting traditional leadership as to ensure jobs provision. The former can be depicted in the statement that follows, The Mthunzini Conservancy was quoted saying “We welcome this settlement and reiterate Tronox’s stance, that ongoing dialogue and consultation with all stakeholders is the preferred course of communication. From Tronox's perspective this approach allows everyone’s views and opinions to be taken into consideration when Tronox makes decisions that affect the future sustainability of its business within the region, and the various ways it impacts the local community” (Tronox representative, Tronox Mthunzini offices, May 2013).

However, the terms of the settlement required that Tronox pay the legal costs emanating from the Durban High Court judgment, and in exchange, the Conservancy would drop its Supreme Court of Appeal application ([www.tronox.co.za](http://www.tronox.co.za), 2013). This demonstrates that the settlement is a more significant feature of pacification than effective consultation, and depicts how opposition to the mine was overcome. Compared to the successful ‘battle for St Lucia’ against HSM, then finally the St Lucia estuary had a white minority who won the case preventing mining from commencing in the area as they wanted to preserve the estuary while. In the Fairbreeze case, the Umlalazi and twin stream were not big enough to have a great voice. Communities no longer resisted the mine, as they had now accepted the mine and were pacified over the years in different ways such as community projects.

In this sense, according to (Huff and Orengo, 2020) pacification can be associated with underwrites which are conditions on which the mine can happen, and in the case a weak SLO be accommodated. We may conclude that pacification becomes increasingly relied upon when a weak SLO is evident.

Another form of pacification relates to attempts or claims of repair and sustainability. For example, regarding sustainability, the mine tried to change the environmental issue of siltation in nearby watercourses by clearing up the affected river as previously mentioned. There were also proposed biodiversity offsets as mentioned previously in earlier chapters (Elliott, 2019), which were in the initial EA to ensure that rehabilitation and monitoring would continue after the mine was done in the area.

However, there is little certainty over these offsets and what they may look like, and others such as Huff and Orengo (2020) have asserted such initiatives can have hidden costs and attendant forms of violence. Lastly, the argument of the chapter is based on the changing perspectives the affected communities faced regarding the mine. This chapter argues that each of the groups changed in their stance and that initially, white stakeholders from in and around Mthunzini resisted the Fairbreeze mine, but were later pacified and accepted the mine.

However, pacification can also represent Baron *et al.*, (2019, p. 5) “as an invisible security architecture that operates as a naturalized and internalized regime of compulsion or domination”. In the Fairbreeze context, this pertains to the addition of mining externalities to the communities that have historically been marginalized. Externalities in this light “focus on the unavoidable by-product of the economic, social, and environmental cost of mining, the indigenous population's loss of resources, and the unequal allocation of their costs and benefits” (Mensah *et al.*, 2021, p. 5). Hilson *et al.*, (2019) have identified that the impacts of mining fall heavily on the less fortunate members of society. Although there were no shootings in Fairbreeze this created tensions that followed behind the apartheid era and marginalization. On the other hand, in the Somkhele mine operation killings occurred which showed a violent side of pacification as communities were also disposed from their homes. As opposed to direct violence more indirect forms have been termed slow violence. According to Nixon (2011), it has been indicated that slow violence is structural and could be experienced over many years, possibly even generations.

Pacification in this sense is linked to indirect violence, and structural violence imposed over decades of uneven development in northern KZN. Pacification is thus supported through other forms of violence and operates amid power relations, to produce peace and at the same time bring order.

## **5.5 Conclusion**

Extractivism, environmentalism, and sustainability are three factors that must be considered when referring to SLO and pacification concepts. This chapter was mainly aimed at highlighting how the change in the relationship occurred between affected communities and the mining company, as well as relating this to the literature. The chapter argued that each of the groups changed in their stance and that initially, white stakeholders from in and around Mthunzini resisted the Fairbreeze mine, but were later pacified and accepted the mine. Meanwhile, the converse occurred with the rural black community, who initially were in support of the mine, but were later disappointed and wanted no association with the mine. A significant percentage of the latter group was in total support of the mine, as they were hoping to get economic benefits, while as mentioned above, some community members were against the mine. The latter group was also provided with employment opportunities and programs. These changes were explained by two different concepts. The first concept was the SLO as mentioned earlier which was weak because of a lot of opposition. The second concept was pacification which discussed how the opposition was overcome. There was also a discussion on community relations in conjunction with stakeholder engagement.

The last topic of discussion was the benefits and externalities in mine operations; externalities were differentiated into social and environmental ones and were linked to similar studies. In conclusion, this chapter contends that the Fairbreeze case shows pacification is more likely to occur in places with a weak social license to operate and in a context of historically uneven racialized development and marginalization.

## **CHAPTER SIX: CONCLUDING CHAPTER**

### **6.0 Introduction and Background**

There has been much literature looking at the impacts of extractive companies on communities. People and mining companies are now competing to get access to natural resources, including land and water. The health of people staying near extractive environments has tended to deteriorate over the years, as a result of pollution; the agricultural aspects will have impacts on livelihoods. (Rahman, 2014). Through time, mining companies have slowly considered the concerns of community members.

During tough economic times, such as in recent ones, we are currently witnessing mining companies continue to look for extractive opportunities in rural communities. “Most of these frontier locations are home to indigenous, poor, and vulnerable people. Many mining companies now employ community practitioners to interact with local people, and facilitate community development (CD) at the operational level” (Kemp, 2009, p. 198). This indicates that mining companies have adopted a new method/strategy of approaching affected communities, which therefore links to the concepts discussed of SLO and pacification.

Today, mining is regarded as one of the priority sectors in South Africa. The mining sector is important to economically (Balasubramanian, 2016). Mining is an ongoing operation that always moves from mined land to unmined areas, such as isolated rural areas (Namakwa Sands, 2008). South Africa as a country has had an increase in sand mining in shallow waters such as rivers. HSM has occurred in South Africa for many years and includes areas such as Richards Bay and Namakwa Sands, near the Western Cape. Such operations can place pressure on environmental and social systems (Gondo, Mathada, Amponsah- Dacosta, 2019). Such concerns must be aligned with the global concerns for managing environmental impacts associated with mining industries in general (Hassan & Ibrahim 2012; Warhurst 2001).

This study was conducted on HMS at the Fairbreeze mine near Mthunzini Northern KwaZulu Natal. There were four affected communities I was in communication with during my site visits and interviewing process, namely Mthunzini, Obanjani, Ogagwini, and Kwa-Nzuza area. Firstly, there is a summary of the thesis, highlighting the main elements of each chapter. The next section of discussion will be how the Fairbreeze mine relates to the main concepts of the thesis.

Another discussion in this final chapter will summarize the environmental and social impacts of the mine and a discussion on how the community perspectives changed over time will also be included. I will also cover the limitations of the study and opportunities for further research regarding extractivism.

## 6.1 Summary of the Thesis

The thesis was divided into six chapters. In the first chapter I introduced extractivism and mining as a whole. I also depicted some background of the Fairbreeze area and surroundings. I also mentioned my aim and objectives as well as the research approach which was used in the research. There was discussion on the background of the study. I also highlighted the important concepts that served as the main foundation of this research inclusive of the argument of the research.

My second chapter was the literature review which was separated into four sections. The first section included perspectives of extractivism. The second section included sand mining, sand winning, and heavy sand mining. The section also included the environmental and social impacts of HSM to a certain level as well as environmentalism and contestation over extractivism. The third section included the geography of extracting HSM on a continental and national scale as well as the regulatory processes of the operation.

The fourth section consisted of the study of political ecology which is the umbrella of the two important concepts of SLO and pacification. Lastly this section also included the linkages the two concepts have with the study of political ecology.

Chapter three was the methodology chapter and consisted of the research design utilized in conducting the fieldwork. A case study approach was adopted on the Fairbreeze mine. The chapter included a case study approach adopted for the thesis. The research techniques of the thesis included questionnaires, key informant interviews, field observations, literature review, and document analysis. The sampling procedures were also documented as well as ethical considerations discussions and the data analysis using the analytical framework. Finally, in this chapter my positionality was mentioned.

Chapter four presented findings on the Fairbreeze mine and characterised it as part of a contested extractivist landscape. This chapter included the discussion of the history and background of the area, the timeline of Fairbreeze area as well as the discussions regarding the role players and stakeholder's perspectives. Further information was presented on the contestation over the Fairbreeze mine. This chapter included graphs and tables which depicted the community respondent's perspectives regarding the mine and the impacts it brought in their community and livelihood as a whole.

Chapter Five was the discussion and analysis chapter. The chapter included the discussions of the changing relationship between the stakeholders and the mine. Those discussions mentioned the benefits and disadvantages socially and environmental of the HSM hand how the local inhabitant near or in close proximity of the mine Fairbreeze were affected. There was also a discussion on communication channels in and around

the mine area and the two important concepts of the research SLO and pacification are also discussed and how their application can be linked to the Fairbreeze mine.

### **6.1.1 Utilization of the concepts of social license to operate and pacification in exploring the research findings**

Political ecology was the field of study was the umbrella under which the two relevant concepts SLO and pacification fell under. The political ecology (PE) field of study is useful in the analysis and is in close relation to my investigation, as in the area where the Fairbreeze mining occurred; there was a close connection between the communities surrounding the area and the environment. The PE framework about the Fairbreeze mine indicated the power relations that existed within the Fairbreeze mine and associated stakeholders such as the traditional authority, izinduna, and environmentalists versus the communities affected including Kwa-Nzuza, Ogagwini, and Obanjeni residents. As seen in the findings, the mining company had significant influence and financial capacity, while the traditional council had great power relations in the area, which assisted them to communicate well with the mining company, just as the mine successfully navigated the EIA and authorisation processes. Despite this, there were still questions about the SLO of the mine. The SLO can be regarded as permission granted by affected stakeholders for businesses to pursue excluding legal battles. (Taylor and Mahlangu, 2017). On the other hand, Boutilier and Thomson (2011) defined the SLO as an acceptance by the community for a mine to operate in their environment. The SLO concept is therefore useful, as it results in the mutual understanding between a mining company and affected communities. The SLO concept was a very useful one. I was quick to understand it since there was a great amount of literature about it, so I could relate to the concept more easily. It was useful in the sense that it was easy to understand that the Fairbreeze mine had a weak SLO initially, as there was a lot of opposition to it. It can be concluded that the SLO for the mine was weak because there was a lot of opposition regarding the commencement of the mine. There were protests which were related to the mine, which was some indication of a lack of understanding between the mine and the affected communities. Furthermore, as indicated above there were shortcomings in communication, with community members in particular feeling there was a lack of communication from traditional authorities. The recent critical theory on pacification debates that it involves war and police power, to maintain order in a capitalist system (McMichael, 2016). Initially, pacification used to be brutal and harsh, but it has since taken on modernized forms by leaders or other people in hierarchies, to maintain peace, even if such orders contain evidence of persistent inequalities or indirect violence.

In relation to pacification violence was more evident in Somkhele than Fairbreeze, and Madagascar (see Huff and Orengo) as there were no direct aspects of violence in the Fairbreeze case. The type of pacification at Fairbreeze Mine was more subtler, through court proceedings and settlement plans which were put in place to quell resistance from predominantly white middle class environmentalists, while also utilised discourse of job creation, offers of limited employment and other benefits to pacify traditional authority and community

stakeholders. Pacification in this sense reinforces persistent inequalities imposed over decades in northern Kwazulu-Natal, which in itself could be considered a form of structural violence

### **6.1.2 The reported impacts on people and the environment pertaining to the sand mining in Fairbreeze**

The research highlighted that the mine brought positive impacts and an improvement to livelihoods. As mentioned in previous chapters' evidence of better livelihoods was indicated through skills provision and scholarship programs provided by the mining company. A few short-term courses were also provided and so was the creation of employment to some households. The other benefit is that the area around the mine received infrastructural development, for example, roads were constructed for the mining company to travel in, and efficient electricity grids were constructed, to ensure the work in progress was conducted successfully. The mining company also funded some community members with capital so that they could pursue to up-skill themselves for the future. However, these benefits were limited, and there were other social and environmental challenges were that some communities were affected by the mine dust, especially those suffering from asthma the dust therefore had severe impacts on their health. The research depicted that the impacts on the environment included vegetation and soil content which were greatly affected during the mine operation, and some loss of species. The soil was impacted negatively, as the topsoil resource got damaged resulting from past and current agricultural practices in the sedimentation of local watercourses. A large area of soil has been left exposed resulting in soil erosion. In this sense the research echoes a concern about the impacts of extractivism can easily outweigh and dislocate the benefits they provide (Willow, 2015). There were also concerns about extractivism, in that resources are being exploited at a rate at which they cannot re-establish themselves (Hubber, 2014 & Bebbington *et al.*, 2007), and that these operations can be detrimental to the environment (Hubber, 2014 & Gudynas 2013).

### **6. 1.3 To detail the changing relationship between stakeholders around the mine, as well as stakeholder perceptions of the mine itself**

There was the concept of pacification that played a vital role in understanding of the changing relations between the mine and relevant stakeholders. The thesis clearly indicated that each of the groups changed in their stance, where white stakeholders from in and around Mthunzini resisted the Fairbreeze mine, but were later pacified and accepted the mine. Meanwhile, the converse occurred with the rural black community, who initially were in support of the mine, but were later disappointed and wanted little association with the mine. A significant percentage of the latter group had been in total support of the mine, as they were hoping to get economic benefits. Some members of the communities received an out-of-court financial settlement, while another part of the communities was pacified using sponsorship of a local school, and the development of a computer centre. Five years later, once the mine started operating, the lower-class community felt betrayed and used by the mine and felt that it had brought little improvement to their livelihoods. On the other hand, the middle-class community accepted the mine and was pacified.

## **6.2 Limitations of the Study**

Some limitations came about from conducting this research where issues arose, mostly during fieldwork, and can impact the research. A major limitation is that I could not get first-hand information from the provincial government, e.g., EDTEA. I would call the department and they would say that I must draft them an email first with my concern, which would be passed on to the relevant people. I did so, but they then kept transferring me to the next office. When I finally got the number of the relevant department, the person could not be reached. Some of the challenges I came across was that I would set up a meeting with a person and make plans to meet with them. Towards the day of our agreed meeting, they would ignore my calls and emails, and would not get back to me. Thus, there was a lot of miscommunication. Some members of the community withheld some relevant information because they feared revealing everything to me, in case someone else heard our conversation. That would directly affect their livelihood in and around the area, clearly indicating that some respondents were secretive. To manage this, I would tell the participant that our conversation was confidential. The participant would therefore feel more secure about our conversation. In some instances, you would find that some community members were not interested in knowing about or discussing Tronox, as they felt that Tronox made empty promises, which had never been fulfilled, so they were tired of them. The solution to this issue would have been to clearly explain to people that the research I was conducting might assist in making Tronox understand better ways of negotiating and communicating with affected communities. In some houses, there was no one present at the time of my visit. Other participants felt intimidated to speak or feel free to discuss the mining company with me they mostly told me they were illiterate and might find difficulty in my questions. I solved that problem by making the respondent aware that I would ask the questions in their mother tongue. The other challenge I encountered was that some homes had only older people present at the time of my visit. The older generation tended to confuse or forget aspects related to the Fairbreeze mine, as it had been a long mining battle, which had been going on for years now. The solution, in this case, was that I would give the person enough time to think about my questions, and then answer as honestly as they could. When the problems have been noted, there must be suitable solutions proposed. The final discussion of this chapter will include further research.

## **6.3 Suggestions for further Research**

Empty promises in the mining industry are common. More research is still required regarding titanium mining. There is insufficient literature regarding these two topics. About the promises made by mining companies to communities affected, there should be recorded data on these versus what happens as time progresses. I also think more research still needs to be done related to the duration of work opportunities promised by mining companies to communities affected; this is because I believe mining companies provide short-term employment, which is not ideal, since they are based in that same area for many years. Further research is also

required on the basis used by traditional authorities when providing employment opportunities to the communities affected.

More research is still required in SA regarding extractivism. The impact on the environment and social impacts is major. Further research is also needed on what to prioritize for the community before the mining company embarks on the commencement of an operation. The impacts of mine operations in communities still need to be investigated thoroughly to avoid miscommunication and misunderstanding between the affected parties.

More clarification is required to determine to what extent the mitigation measures take place, once the mining company closes the project. Further research is additionally required on rehabilitation plans associated with mining companies. Rehabilitation plans need to be measured based on how successful they become, compared to the success stories promised and shared by mining companies. Lastly, I think further research is required regarding compensation packages TA receives from mining companies, and how much of that money is budgeted for and is received by the affected communities. There is a possibility that some corruption could be taking place to some degree. The traditional authorities working hand-in-hand with relevant stakeholders could conduct this research.

## **6.4 Conclusion**

Chapter Six was the final chapter of the thesis. Firstly, there was a short introduction and section relating to the background. The next section summarized the findings of the thesis in relation to the aim and objectives mentioned in the introductory chapter and how they were achieved. The next section mentioned the relevant concept of the thesis and how they interlinked to assist in explaining my data and analysis. The argument of the thesis was also highlighted on how the relationship changed overtime between the mining company and affected stakeholders. The summary the main elements of each chapter included was also included in this last chapter. The next section included as well was the discussion if Fairbreeze mine relates to the debates on development and extractivism. I then discussed the in summary the study of political ecology as well as SLO and pacification. In conclusion I stated the limitations of the study, as well as further research.

Although the discussion mentioned above occurred in the Fairbreeze mine, many affected communities in other mine-affected communities go through similar cases. Mining companies do create employment to a certain extent to communities affected. Yet at the end of the mining project, most communities are left wondering what difference the project brought into their area that would apply to Fairbreeze and some of the mining projects occurring along the KZN extractivist landscape.

Many mine-affected areas loose hope of an improved livelihood because mining companies tend to forget their promises once the communities have granted them the Social License to operate in their area. Mining companies normally provide jobs, skills, and opportunities to communities affected, who

end up accepting the mine through pacification and being compensated. Understanding these processes, and the application of concepts of SLO and Pacification, can be important contributions to mining geographies in places like South African and beyond.

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