

Sanitised spaces: the spatial orders of post-apartheid mines in South Africa

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Prepared under the supervision of Prof Andries Bezuidenhout

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DECLARATION

I, the undersigned, hereby declare that the work contained in this thesis is my own work and that have not previously, in its entirety or in part, been submitted at any university for a degree. The copyright of this output rests with the author.

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John Mashayamombe

December 2018

Dedication

By wisdom, a house is built and by understanding it is established; by knowledge the rooms are filled with precious and pleasant riches. Proverbs 24: 3-4

We all have dreams. But in order to make dreams come into reality, it takes an awful lot of determination, dedication, self-discipline, and effort.

Jesse Owens 1913-1980

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Abstract

This comparative study investigates how new in the democratic South Africa monitor and control labour in the workplace, how labour responds and relations between mining communities and mining companies. The study is inspired by the fact that labour studies scholarship in South Africa has focused on mines established during colonial and apartheid periods. Research on the old gold, platinum and some coal mines has been on labour disputes often expressed through protected and unprotected strikes. However, not much has been undertaken on new mines established in the democratic era in terms of workplace organisation, workplace relations and how management monitor and control labour.

Deploying the lenses of labour geography and a mixed methods approach underpinned by an extended case method, this study found out that Kolomela and Zibulo have come up different innovative ways of organising work and workplace relations. This I term *sanitised workplace order* in that it is characterised by the consistent application of rules and regulations and innovations that are negotiated and re-negotiated, contested and manipulated as both capital and labour battle to control space to fulfil their respective interests. Control of this space demonstrates power. Furthermore, Kolomela mine has also developed a housing strategy that I term *sanitised residential space*, where the mine has built houses for its mineworkers to rent while it retains ownership. This has resulted in conflict as workers refuse to settle utility bills while the community feels like the mine excludes them favouring ‘non-locals’ in terms of job and business opportunities and access to housing. On the other hand, findings show that Zibulo follows a different strategy in which it does provide favourable housing and travel allowances which is attractive to the mineworkers and side-step conflict with local communities.

In light of the above, the comparative study depicts a significant shift from past workplace practices at old mines; while new interventions have yielded contradictions as depicted by the sanitised residential space; provision of housing and transport allowance and the sanitised workplace order. These different spatial orders seem to break with past traditions of workplace ungovernability since both operations seem to have created some form of workplace stability.

Key words: sanitised workplace order, housing, space, belonging, mining

Abbreviations and Acronyms

AAIC	Anglo American Inyosi Coal
AIDS	Acquired Immune Deficiency Syndrome
AMCU	Association of Mineworkers and Construction Union
ANC	African National Congress
ATM	Automated Teller Machine
AWOL	Absent Without Official Leave
BCEA	Basic Conditions of Employment Act
BBBEE	Broad Based Black Economic Empowerment
BEE	Black Economic Empowerment
CBD	Central Business District
CM	Continuous Miner
CMOS	Coal Management Operating System
CMSA	Chamber of Mines South Africa
CSI	Corporate Social Investment
CTC	Colliery Training College
DA	Democratic Alliance
DMR	Department of Mineral Resources
DMS	Dense Medium Separation
ECM	Extended Case Method
FDI	Foreign Direct Investment
FLM	First Line Management
GDP	Gross Domestic Product
GM	General Manager
HAD	Housing Development Agency
HDSA	Historically Disadvantaged South Africans
HIV	Human Immune Deficiency
HME	Heavy Mobile Equipment
HR	Human Resources
IDP	Independent Development Plans
KLT	Kolomela Leadership Team
KMCSP	Kumba Municipal Capacity and Support Programme
KOPEX	Kolomela Operational Excellence
LED	Local Economic Development
LM	Local Municipality
LRA	Labour Relations Act
LSP	Labour Social Plans
LTI	Lost Time Injuries
MDWT	Mission Directed Work Teams
MHSA	Mine Health and Safety Act
MHSC	Mine Health and Safety Council
MO	Mining Overseers

MPRDA	Minerals and Petroleum Resources Development Act
MQA	Mining Qualifications Authority
MTC	Medical Treatment Cases
NSC	National Senior Certificate
NUM	National Union of Mineworkers
NUMSA	National Union of Metalworkers of South Africa
OID	Operational Information Delivery
PARI	Public Affairs Research Institute
PPE	Personal Protective Equipment
PPP	Preferential Procurement Policy
SALGA	South African Local Government Association
SANCA	South African National Council on Alcoholism and Drug Dependence
SDF	Spatial Development Framework
SEAT	Socio-Economic Assessment Toolbox
SIOC	Sishen Iron Ore Company
SLAM	Stop Look Assess Manage
SLP	Social Labour Plan
SMME	Small Medium and Micro-sized Enterprises
SMP	Social Management Plan
SPSS	Statistical Package for the Social Sciences
TBBC	Tsantsabane Black Business Chamber
UASA	United Association of South Africa (formerly)
VCT	Voluntary Counselling and Testing
VOHE	Ventilation and Occupational Hygiene Engineering
WNLA	Witwatersrand Native Labour Association

Glossary of terms

Economic praxis:	Activities by social actors to improve their economic conditions
High wall:	An unexcavated face of exposed overburden in an open cast/pit mine
Madala site:	An already mined and disused section in an underground mine
Political praxis:	Political activities under taken by social actors
Social praxis:	Social activities undertaken by social actors to shape geographic relations
Spatial praxis:	Actions and struggles undertaken by social actors to control space
Stoping:	Extraction of minerals underground leaving an open space held by a rock
War room:	Room where management converges address challenges affecting business

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Chapter One: Labour, minerals and mining

1.1. Introduction

The current study argues that new mining companies established in the post-1990 have produced different spatial strategies to control space and labour as a way of dealing with colonial and apartheid practices. This is demonstrated by varying labour housing strategies, employment strategies (young, educated and diverse workforce), approaches to work organisation (operating models and technological innovation) and consequent workplace and community relations with the mines. The study argues that the outcome of various spatial visions, specifically the Kolomela and Zibulo mines, have culminated into what can be termed ‘sanitised spaces.’ The sanitised space is informed by sanitised workplace order and sanitised residential space. The study collectively examines the workings and interactions of labour and capital at these two mines as well as the immediate communities using labour geography by reconciling concepts that include; space, place, spatial fix, belonging and politics of belonging to understand how capital and labour interact, shape space and socio-spatial relations that emerge. It is through the lenses of the sanitised space and sanitised workplace orders that the study shows the ways in which the two mines have undertaken to construct, re-construct and de-racialize the two mines in separate geographical locations, different minerals (coal and iron) and conditions but owned by the same parent company, namely Anglo-American Plc. The outcome is characterised by contradictions, continuities and discontinuities from the apartheid period. However, the spatial orders that have emerged, that is, ‘sanitised space’, ‘sanitised workplace orders’ and sanitised residential spaces are an exception from the past. This is done in conversation with various labour geography scholars and the ‘apartheid workplace regime’ related work through a comparative analysis of the two mines.

1.2. The triggers of the fault lines

The mining sector experienced a traumatic period between 2012 and 2014 (Chinguno, 2015, Patel, 2012) that may still continue. Spontaneous waves of wildcat strikes, the longest procedural strike in the history of the mining industry, reduced output, increasing operational costs and a slowdown in the global economy have put severe pressure on the South African mining industry (Mathews, 2012; Patel, 2012; Steyn, 2012a; Brand, 2013, Chinguno, 2013a). However, the turning point was the Marikana shootings which evoked images of the Sharpeville massacre; reminiscent of the

apartheid period (Frankel, 2013; Alexander, Lekgowa, Mmope, Sinwell and Xezwi, 2013). The killings of mine workers by fellow workers and South African Police Services occurred in the context of a wildcat strike initiated and led by ‘worker committees’ in which mineworkers at Lonmin were demanding R12 500 per month (Patel, 2012; Brand, 2013; Sinwell, 2016). These, among other issues, brought the mining sector into sharp focus as these events depict a myriad of unresolved problems more than 20 years after the dismantling of apartheid (Harvey, 2013; Chinguno, 2013b, 2013c). The events led to introspection of the nature of employer-employee relations, trade unions and members’ relationships, collective bargaining, ambiguities of the Labour Relations Act, corporate social responsibility and community relations and the sustainability of mining (Brand, 2013; Chinguno, 2015; 2013a; 2013b; Rapatsa and Matloga, 2014).

1.3. Role of mining in South Africa

The above issues form the backdrop to the key role that mining has played in South Africa’s economy. Since the discovery of minerals 140 years ago in Kimberley and Witwatersrand area, the mining sector has helped develop South Africa’s economy, transforming it into ‘the most industrialised economy in Africa’ (Chamber of Mines of South Africa, 2013: 2; see Wilson, 2001). Mining in South Africa contributes to the economy by attracting Foreign Direct Investment (FDI), export earnings, creating Gross Domestic Production (GDP) for instance, 8.6% in 2012, 8.3% in 2013 and 7.1% in 2016, the transformation of the economy and employment (CMSA, 2013; Gwatidzo and Benhura, 2013). The sector in 2012, for instance, was directly responsible for the creation of half a million jobs and another half-million indirectly (Gwatidzo and Benhura, 2013; CMSA, 2013; 2016). Several settlements have developed into vibrant cities and towns, for instance, in Johannesburg that also houses the Johannesburg Stock exchange, Kimberley, Witbank, Kathu and Rustenburg, to mention just a few. In other words, the mining sector has contributed immensely directly or indirectly to urban development in terms of transport, housing and recreational infrastructure, and social amenities in various settlements in and around its operations.

However, it is important to note these positive outcomes came at a price for black African migrant workers whose land was taken through war and conquest, and together with other black Africans were forced to work in these mines (Van Onselen, 1976; Allen, 1992; 2003; Moodie, 1994). The local political, economic and social fabric was disrupted (Allen, 1992; Comaroff and Comaroff,

2009) as the landscape was reconfigured to meet the demands of capital during the colonial and apartheid periods. One cannot turn a blind eye to the role that mining and subsequent industries together with the colonial and apartheid governments in spatial organization of mines and residential spaces for social engineering through discriminatory policies and legislation. They played a significant role in the oppression of black Africans through legitimised discrimination and through a dual industrial relations system that was hinged on an unjust legal system (Bendix, 2015; Godfrey, Maree, Du Toit and Theron, 2010). The workplace order that emerged is what has been termed by Von Holdt (2003; 2005) as ‘apartheid workplace regimes’. Furthermore, the ability of the colonial and apartheid’s social engineering was marked by spatial, reproduction, associational and political control (Bezuidenhout and Buhlungu, 2011). Since 1994, attempts to democratically institutionalise industrial relations continue to be compounded by imprints from apartheid period making the project of transformation and diversification of the workplace difficult. This has led to several labour scholars labelling this as discontinuities and continuities of apartheid legacy in the workplace (Webster and Von Holdt, 2005; Chinguno, 2015). It is in the same vein that this study examines the ways in which new mines execute their strategy spatially and seek to control labour and the outcomes of interactions.

1.4. Problem statement and identification

The period between 2010 and 2016 witnessed protracted labour unrests through protected and unprotected strikes within the mining industries (Mathews, 2012, Chinguno, 2013a; Harvey, 2013; Rapatsa and Matloga, 2014). Much attention was paid to the reasons for these strikes at the mines where they happened (Buhlungu, Bezuidenhout, Bischoff, Dlamini, Gumede, Malapane, Mashayamombe and Mmadi, 2013; Chinguno, 2013a, 2013b, 2013c; Alexander et al., 2013; Stewart, 2013; Mashayamombe, 2014). Less has been done to investigate why workers at some mines did not go on strike, most notably the case of Anglo-Platinum’s Mogalakwena mine (Mashayamombe, 2012). The case of Mogalakwena platinum mine is of significant interest in that during the strike wave period of 2012 and up to date it has not experienced unprotected strikes (Mashayamombe, 2012), yet some of its sister mines within Anglo-American Corporation operations were affected, for instance in Rustenburg, North West and Kathu (Sishen mine owned by Kumba Iron Ore a subsidiary of Anglo American) in the Northern Cape (Buhlungu et al.2013).

In 2012, the researcher conducted a study for an honours paper on Mogalakwena platinum mine and found that; to some extent the failure of the mineworkers to express themselves through a wildcat strike was constrained by revitalised regimes of control by management in the workplace; low numbers of migrant workers (Seccombe, 2014); the absence of mine residential space; strict criteria on recruitment policy; influence of traditional authority and a fragmented and geographically dispersed workforce. It should be pointed out that this mine is a capital-intensive, open cast mine, where many of the mine's workforce possess matriculation certificates as an entry level selection criterion into the company. In order to understand the lack of worker militancy in this case, the researcher developed an interest in the field of labour geography, with its emphasis on workers' agency. The subsequent critique of the approach was that it lacked a theory of power that linked workers' agency to real impacts on landscapes. The field of labour geography is an approach that seeks to understand the 'social and spatial practices' (Herod, 2001: 15) of workers (agency) and capital as active participants to gain insight on how economic geography of capitalism is produced. This contrasts with geography of labour - an approach that puts more focus on the role that capital plays as a sole actor in producing economic geography of capitalism using neoclassical industrial location theory¹. In other words, labour geography sees labour (agency) and capital as active participants in the making and shaping of economic and social landscapes while geography of labour regard labour (agency) as passive while capital actively makes economic landscapes.

In 2013 and 2014 the researcher was able to take this interest forward when the researcher was involved in a commissioned study for Kumba Iron Ore into the reasons for a spectacular strike at their Sishen mine (Buhlungu et al, 2013) which enabled the researcher to undertake a spatial analysis of the strike at Sishen mine by focusing on agency and linking it to power. Sishen mine's majority of workers around 2010-2011 had received dividend pay-outs from an employee share ownership scheme of close to or just above R500 000 before tax; with better housing conditions as opposed to those in the platinum and gold sectors. In addition, they engaged in a seemingly

¹Industrial location theory and the neoclassical approach were central in economic geography's analysis economic landscapes (up to 1970's) that capital was the sole actor and labour as a passive recipient (Herod, 2001). In other words, market forces of supply and demand are given more prominence and labour as a factor of production (Hostelling, 1929, Cyert and March 1963, Losch 1954, The 1970's witnessed an emergence of new economic geography mainly focusing on activities of multinational corporations spearheaded by Marxist thought i.e. Soja, 1989; Smith, 1990; Merrifield, 1993 and the works of Henri Lefebvre 1970, 1976, 1991).

spectacular wild cat strike action without unions support after having received slightly higher wage increase in comparison to other mineral sectors (gold, coal and platinum) in South Africa (Steyn, 2012b; Buhlungu et al, 2013; Mashayamombe, 2014). Around 300 out of close to 12000 (permanent and contract) workers from the mining section at Sishen, during a night shift, managed to capture close to 90% of the mine's equipment and machinery worth billions of Rands, placed them at a mountain top (dump) and threatened to run them down unless their R15 000 wage demand was met (Steyn, 2012b; Buhlungu et al, 2013; Mashayamombe, 2014). Though there were underlying grievances and that the workers used structural and logistical power to articulate their demands, they did not achieve what they broadly wanted as a few remaining (out of 300) were captured and arrested by South African Police Services as well as the mine's hired private security (Buhlungu, et al, 2013). Some of the strikers consequently lost their jobs while others were pardoned after disciplinary procedures (Buhlungu et al, 2013 and Mashayamombe, 2014). The study demonstrated that although the striking mineworkers' actions exhibited some form of agency and use of their structural and logistical power (Wright, 2000; Silver, 2003; Lambert, Webster and Bezuidenhout, 2012) to articulate their demands, the strike action to a greater extent was a failure because their demands were not met and instead some lost their jobs and earnings (Mashayamombe, 2014).

What is striking in the abovementioned few cases are the sharp contrasts, for instance, on the conditions of the strikers, that is, in the Rustenburg belt; striking workers among other issues at Anglo Platinum, Lonmin and Northam mines, and so forth complained of poor working and living conditions and low wages; hence the strike (Chinguno, 2013a, 2013b, 2013c, 2015). However, at Sishen mine, for instance, which has far better housing though not everyone has accommodation and wages in comparison to platinum, gold and coal sectors; yet at the same time at Mogalakwena platinum mine in Limpopo, South Africa, the mine does not provide accommodation but housing allowance for workers (Mashayamombe, 2012) and has a contested transport policy but mineworkers did not go on a wildcat strike. How can one account for these contradictions? Overall, across the aforementioned mines, the striking workers expressed their displeasure and disappointment with the National union of Mineworkers (NUM). Also, it seems old mines (those established during the colonial and apartheid periods) tend to experience more labour unrest as opposed to new mines.

Could it be that the way in which mines that were designed and constructed after apartheid contributes to the fact that they experience lower levels of conflict and unrest? This study sought to understand how new mines organise work in relation to employees at the workplace and the broader community (social actors). The notion of spatial control of the work and residential space and labour was central to the organisation of mines during the colonial and apartheid periods in the absence of democracy in the workplace and residential spaces (Van Onselen, 1976; Moodie, 1986, 1994; James, 1990; Allen, 1992, 2003; Bezuidenhout and Buhlungu, 2008). In the advent of democracy how are new mines spatially organised given fact that some mines experience (d) labour instability while others did not? In other words, the contribution of the study is on trying to understand the link between theory of agency and power and how this plays out spatially. This study, as a continuation on previous work (Mashayamombe, 2012; 2014), sought to investigate and explore how the capital-labour nexus plays out in restructuring and reshaping economic and social landscapes at Kolomela and Zibulo mines.

1.5. Research question

Considerable research has been done on spatial control of mine labour during colonial and apartheid periods and its lasting effect on old mines in post-apartheid South Africa (see Van Onselen, 1976; Moodie, 1986; Moodie and Ndatshe, 1994; Cohen, 1980; Crush and James, 1991; James, 1990; Bezuidenhout and Buhlungu, 2008, 2010; Chinguno, 2013a, 2013b, 2013c; Stewart, 2013; Alexander et al, 2013) just to mention a few. With several political, economic and social changes having taken place, this study seeks to answer the following broad research question with specific reference to new mines established from 1990 and upwards:

- **Given the fact that the state played a central role in the spatial control and organisation of mines in the apartheid era, what forms of control and contestations are emerging on new mines constructed in post-apartheid South Africa?**

1.5.1. Sub-questions:

- How are new mines structured in terms of the workplace and surrounding environs?
- How is work organised i.e. models of management and control? (task allocation and supervision).

- What are the methods of resistance or adjustment being used by workers in response to management control?
- Do the mine(s) have social policies? (Housing, Transport etc.)
- What are the relationships between, company and workers, management and general workers; management and recognised trade unions; trade unions and workers (members)?
- To what extent are new mines relying on migrant labour given the shifting patterns of labour migration?
- What is the relationship between the mine and social actors? (immediate community, local municipality and civil society)
- What are the perceptions and attitudes of social actors (community) on the mine?

1.6. Research objectives

- To understand models (management control and organisation of labour) being used by new mines in post-apartheid South Africa;
- To be able establish and understand the relationships that exist between each mine and other social actors (employees, community, traditional and local authorities);
- To provide a comparative analysis between Kolomela and Zibulo mines in terms of how they are organised, control labour, workplace and residential space (housing) and reaction of workers;
- To provide a comparison of relationships between each mine and social actors (community, local and traditional authorities and employees); and to
- Explore mine employees and community perceptions and attitudes at selected mine

1.7. Conclusion

The mining industry contributes significantly to the South Africa's economic, political and social order. Yet, the industry continues to face internally and externally induced challenges. Labour and community unrests continue to confront the industry mainly due to past legacy related matters like poor wages and working conditions, housing, lack of employment opportunities and environmental degradation and pollution. Despite the fact that there is new legislation and policies to address historical imbalances, the mining industry still faces operational and regulatory challenges. Thus,

this study examines new mines on how they organize work, relate with employees and organised labour and the broader host communities in a democratic South Africa.

1.8. Outline of the thesis

This current chapter introduced the main argument of the study and the reasons for the study and the significance of mining industry in terms of social, political and economic change. The following chapters provide a breakdown and insight of the thesis.

Chapter two

Chapter two provides a brief historical overview of the development of mining in South Africa and subsequent making of labour that was underpinned by a dual industrial relations system. The chapter provides nodes of control that were used by the industry with the assistance of the colonial and apartheid governments to regulate and control labour. These are summarised as the following, authoritarian and discriminative legislation, migrant labour, traditional authority, compound housing and racialized workplace systems. Through these nodes of control, the mining industry was able to control and subjugate mineworkers particularly Black Africans. However, the same very systems of control became the catalyst for change and downfall of what Von Holdt (2005) calls the apartheid workplace regime. Ushering in of democracy also facilitated efforts to democratise the workplace through institutionalisation of industrial relations through various policies and legislation.

Chapter three

Chapter 3 provides the reader with the exposition of the theoretical and conceptual lenses that inform the study. The reader is introduced to labour geography, an approach that seeks to address the “...deficient attention to labour” ‘by neoclassical Economic Geography and Marxist Geography’ (Knutsen, Endresen and Bergene, 2010: 4) together with capital in the making and control of economic and social landscapes (Herod, 1997; 2001; 2012). Thus, labour geography is used to bring to the fore the equal workings and contestation between capital and labour to shape and control space. Furthermore, the reader is introduced to the various concepts that utilised in the study to understand the working of capital and labour in creating landscapes and subsequent relations. These concepts include, space, place, spatial fix, worker agency and belonging and

politics of belonging. The study makes conceptual intervention by introducing the concepts of *sanitised spaces*, *sanitised workplace order* and *sanitised residential spaces*. Furthermore, Harvey's matrix of space is operationalised to *sanitisation of absolute spaces*, *time-space compression of relative space* and *social inclusion and exclusion of relational space*. I utilise these analytic concepts throughout the study to understand the role that capital and labour play to achieve their spatial visions and social relations that emerge through contestations.

Chapter four

This chapter provides an outline of the methodological approach used for the study and related processes. The mixed methods approach (quantitative and qualitative) was used underpinned by the Extended Case Method to collect data at the two selected mining companies. Survey questionnaires, in-depth interviews, observations and official documents were used to collect data. The findings in this study are generated from the analysis of data that was collected between 2015 and 2016 at Zibulo colliery in Mpumalanga and Kolomela mine in the Northern Cape South Africa. This entailed spending considerable time at the research sites for instance going into the open pits and underground sections and working and talking with mineworkers within the confines of the Extended Case Method was enriching and inspiring.

Chapter five

In this chapter, I provide detail in terms of the two research sites Kolomela mine in Postmasburg and Zibulo colliery in Ogies using the notion of a spatial fix. In essence, the chapter sets the scene in terms of how capital creates a spatial fix in order to deal with its crisis-tendencies linked with accumulation. Thus, capital creates what Herod (2001a, 2012) calls economic and social landscapes by reorganization, configuration and reconfiguration to ensure that productive processes occur without hindrance. This would entail ways that bring capital and labour together to attain its spatial vision. However, as is shown in the chapter, labour with other social actors in the community have their own social and biological needs thus seek to shape and reshape the same landscapes altered, created and recreated by capital. Often, the spatial vision of capital and labour are not the same and hence result in contestation over control of space in the workplace and community. This chapter therefore sets the scene of the two cases under study.

Chapter six

The chapter shows how two mines understudy produce two different spatial strategies for their respective communities whose outcomes modest and also contradictory. Through the deployment of *sanitised residential space*, an outcome of *sanitised workplace order*, the chapter shows how space is a producer and a product of the same very processes that made it. In other words, social relations influence how geography of capitalism is made and recursively the same very geography shapes how social relations develop (Soja, 1980). What is demonstrated in chapter is how Kolomela mine in Postmasburg reconfigured the town as it created its own economic and social landscapes (housing for workers, infrastructure construction and rehabilitation and directly and indirectly influenced the development of spaces of consumption like malls and other related industries) and had contradictory outcomes. Mineworkers do not like the houses and refuse to pay utility bills while the community blames the mine for high cost of living, population and crime increase and pressure of resources. They also accuse the mine of hiring non-Postmasburg residents thus engage in the project of inclusion and exclusion. Contrastingly, Zibulo follows a different subtle path by not being involved in the spatial reconfiguration of town except for few donations and provide its workforce with housing allowance and not houses. The outcome of this spatial reconfiguration is I term ‘sanitised residential space.’ The interplay of these dynamics is what the chapter grapples with by linking spatial fix, space, worker agency and belonging and politics of belonging.

Chapter seven

In this chapter, findings reveal that workplace relations at the two mining operations understudy are generally good and various interventions and mechanisms have been put in place to enhance such. The chapter explores relations between employers and employees, mineworkers amongst themselves and also with other racial and gender categories. The operating models adopted by the two companies seem to be working in terms of enhancing tolerance among a diverse workforce. It is shown in the chapter also, that race based relations are functional in the workplace due to policies that have been put in place however, suspicions and perceptions still exist between Black African and White mineworkers.

Chapter eight

In this chapter, it argued that the *sanitised workplace order* enables the workplace to be a site of contestation, and this is qualified by comparatively examining the different operating models and workplace innovations introduced by Kolomela and Zibulo mines. Using the tenets of *sanitised workplace order*, the chapter examines how capital manufacture workplace consent through negotiation and collaboration in the age of technological and mechanical innovation. However, it is also demonstrated that both labour and trade unions show their own individual and collective agency over the same workplace in different ways like hard bargaining, changing coal cutting sequences, driving trucks slowly and slow down production among others in exerting their power and interests. The chapter shows that labour does not just react but can initiate actions against capital as it seeks to meet its own interests within the same space. The chapter also explores various innovation that have introduced into the workplace like technology (fatigue management systems, sensor, sophisticated trucks and machinery) and restructuring without job losses among other things. In exploring, these issues, a conceptual intervention of ‘*sanitised workplace order*’ is an outcome of these contestations between labour and capital in the workplace.

Chapter nine

The chapter provides an overall conclusion of the thesis, highlight contributions to debates in labour geography, labour studies and methodology. Also, the chapter further elaborates on implications of the study on the mining industry in terms of various policies particularly the Mining Charter among others. I end with limitations of the study and possible areas for further studies.

The next chapter provides the background to the study.

Chapter 2: Space and labour control on the South African mines: a brief historical overview

2.1. Introduction

An understanding of the past and present mining conditions in South Africa requires a reflection on the processes of capital accumulation through varied modes of production in pre-colonial, colonial, the Union of South Africa and apartheid periods. This general introduction to scholarly review seeks to show that the nodes of control (used in mines during the colonial, Union of South Africa and apartheid periods) alluded to in the sections that follow were born out of proletarianization of Black South Africans who were directly and indirectly forced into wage economy as cheap migrant labour for capitalist accumulation (both primitive and modern) (Legassick, 1974, 1975; Wolpe, 1972; First, 1983; Keegan, 1996). Colonial conquest, first by mercantile Dutch East India Company in mid seventeenth century, followed by British imperialism in the early nineteenth century set in motion the proletarianization of black South Africans (Legassick, 1974; 1975; Allen, 1992). This is epitomised by primitive accumulation i.e. through farming and mining by accumulation and control of capital and exploitation of labour (Legassick, 1974). There are various competing accounts and perspectives on, for instance, the connection between black South African peasants farming and capitalists' relations (Legassick, 1974 see also Bradford, 1990; Keegan, 1990) but undoubtedly, the encounter was complex, dynamic and had far reaching consequences on social relations. It created competing classes based on race, gender and access and control to means of production. This accumulation process was characterised by different modes of production and social relations in different areas for instance, the Cape, Natal, Orange Free State and Transvaal. The heightened demand for cheap migrant labour reached its zenith with the discovery of diamonds and gold in late 1800s in Kimberley and the Witwatersrand which is outside present-day Johannesburg (Legassick, 1974; First, 1982; Bendix, 2015).

The state, during the Union of South Africa and apartheid period, further facilitated capitalist development through accumulation of capital, authoritarianism and exploitation of labour in both primary and secondary industries (Legassick, 1974; Wolpe, 1972). Structures of labour control were further enhanced to the advantage and functionality of capital leading to the segregation of black South Africans and Africans from social, political and economic spaces (Legassick, 1974,

1975). Wolpe (1972: 430-432) comments that from the formation of Union of South Africa and onwards, 'the state directly acted to promote capitalism through enacting laws, for instance, to create credit facilities, special agencies and state enterprises which mainly benefitted whites and use of repressive apparatus (police, army, prisons, courts etc.) to coerce workers (black and white) to enforce laws.' These actions were necessitated by the need to meet the increasing demands of secondary industrialisation characterised by increased capitalist exploitation of cheap labour force produced and reproduced through the reserves system (Wolpe, 1972:432-433; Wilson, 2001).

The assumption of power by the National Party in 1948 witnessed the setting in motion of apartheid which withdrew black South Africans political, economic and social rights in dealing with contradictions of capitalism premised within racial ideology and specific class interests (Wolpe, 1972). These continuities and discontinuities permeated across every sphere that black South Africans operated in i.e. restriction in urban spaces like townships² and compounds, workplace leading to what Von Holdt calls 'apartheid workplace regimes' (Von Holdt, 2003, 2005:45) and political space. The above shows that the accumulation of capital in pre-colonial, colonial, Union of South Africa and apartheid periods resulted in specific social relations that emerged from a specific character of capital mode that interacted with its internal, local and international logic (Legassick, 1974: 255). Contradictions within different modes of production - capitalist mode of production with pre-capitalist economies and peasant farming - created conditions for a dual economy underpinned by racial ideology as depicted by segregation and apartheid (Legassick, 1974; Wolpe, 1972). These had far reaching consequences on black South Africans as labourers.

2.2. Nodes of control in the colonial and apartheid periods

2.2.1 Introduction

The mining activities in South Africa that spearheaded the industrialization (Bendix, 2015) process played both a positive and negative role in the construction of social and economic landscapes. The discovery of diamonds, gold and coal and subsequent mining of the minerals meant the

²Township in South Africa) a suburb or city of predominantly black occupation, formerly officially designated for black occupation by apartheid legislation.

https://www.google.co.za/search?ei=k0sVW9S_BsqNgAaZjImgAg&q=township+meaning&oq=township&gs_l=psy-ab..1.0.0i67k1l2j0l8.864983.867398.0.870512.9.8.0.1.1.0.245.712.2-3.4.0....0...1c.1.64.psy-ab..4.4.720.0..0i131i67k1j0i131k1.341.v2mVdZQlgJo

industry became the leading driver of the South African economy. However, for mines and other economic activities to function, they had to be organised in a way that would enhance the realisation of profits. In the South African case, social, economic and political systems were shaped by the interaction between Black Africans and the White population; and had some disruptive effects (Allen, 1992). The dire need of labour by White settlers in the domestic and economic sphere and the Black Africans' unwillingness to cooperate pushed them to devise strategies to proletarianize African peasants and coerce them into the wage economy (Allen, 1992; Lacey, 1981). The increased need for cheap and unskilled labour (Legassick, 1974), racist perceptions of Black Africans, migrant labour system, traditional authority and compounds among other nodes formed the bedrock of mines organisation during both colonial, Union of South Africa and apartheid periods (Crush, Jeeves and Yudelman, 1991). Phakathi (2012: 280 citing Williams, 2003: 344-5) states that, "...colonial rule redefined state forms, social identities, gender relations, religious beliefs and class relations." Rail and road networks reoriented African producers and economies to changing global economic networks (Legassick, 1974).

In addition, the colonial economies subordinated African producers to the requirements of new and often coercive, labour regimes and patterns of cultivation to meet the requirements of European-controlled railways, mines, farmers and plantations (Allen, 1992; Legassick, 1974). This foundation laid by colonial rule was furthered by the Union of Union of South Africa and apartheid regimes of racial ideology and discriminative agenda in 1910 and onwards and intensified in 1948 (Wilson, 2001; Legassick, 1974). On the other hand, mines exploited cheap black African migrant labour (Demissie, 1998; Crush et al, 1991). This was achieved through low wages, poor working and living conditions in compounds (Moodie, 1994; Van Onselen, 1976; Demissie, 1998, Wilson, 2001). The need for cheap and unskilled labour, that is, black labour, pushed mine houses to adopt existing structures of colonialism and racism and transformed them into structures of segregation to acquire cheap black and unskilled migrant labour (Legassick, 1974).

2.2.2 Authoritarian and discriminative legislation

During the pre-colonial, colonial, Union of South Africa and apartheid periods, capitalist companies' - mines and farms - relied on oppressive and discriminative pieces of legislation to operate profitably with enough cheap labour. These pieces of legislation were established in different periods, colonies (Cape, Natal, Orange Free State and Transvaal), and provinces and later

uniformly after the establishment of Union of South Africa. In other words, to have enough supply of cheap black labour different laws were used to coerce black Africans to sell their labour (Allen, 1992). White dominance over Black Africans on farms, markets, factories, mines and other spheres of life was shaped along racial lines. Racial ideas by white supremacists were predicated on assumptions that black Africans were inferior, powerless, backward and uneducated, and hence their labour could be used for free or compensated with meagre wages (Allen, 1992; Von Holdt, 2005). Such pieces of racist and discriminatory legislation, among others, not in a periodized order and their amendments or repeals included: Masters and Servant Acts 1856 and 1880³, Vagrancy Act 1879⁴, Mines and Works Act 1911⁵, Native Labour Regulation Act 1911⁶, Natives Land Act 1913⁷, Industrial Conciliation Act 1924⁸ and 1956, The Natives (Urban Areas) Act 1923, The Natives Taxation and Development Act 1958, Factories, Machinery and Building Works Act 1941 and Riotous Assembly Act 1927. The Industrial Conciliation Act of 1924 legally laid the foundation and entrenched a dual labour industrial relations system as it recognised White workers' employees and recognised White trade unions in the workplace while excluding Black African workers (Bendix, 2015).

The above mentioned pieces of legislation, among others, directly and indirectly forced African peasants to be spatially restricted in certain spaces - residential segregation, disempowered off land to farm, excluded from participating in issues of national interest as equal partners with Afrikaans speaking and other white settlers and ultimately willingly and unwillingly offering their labour cheaply at farms and mines among other economic activities - perpetuated white privilege through

³ Masters and Servant Act, Act 15 of 1856 of the Cape province & Law 13 of 1880 in the Transvaal province. These acts were meant to regulate employer and servants' relations in the 18th and 19th century in South Africa (Also existed in the UK, Australia etc.)

⁴ Vagrancy Act adopted in 1834 by settler members of the legislative council and amended in 1879 to 1879 Vagrancy amendment Act no 23. It gave property owners right to arrest or apprehend loitering, disorderly, wondering over store, farm etc. It carried six months' imprisonment with hard labour and solitary confinement

⁵ Mines and works Act 1911 No 12 was enacted to prevent Black Africans from occupying job categories reserved for White workers often known as Colour bars.

⁶ Native Labour regulation Act No 15 of 1911 was enacted to regulate the recruitment and employment of native labour and in some cases compensation for work undertaken by native labour.

⁷ Natives Land Act No 27 of 1913 was enacted to allocate only 7% of arable land to Black Africans and left the rest of fertile land to few Whites.

⁸ Industrial Conciliation Act No 11 of 1924 granted White workers as employees and conferred them with workplace rights & collective bargaining machinery; granted trade unions with statutory rights to access the workplace and organise White workers. Importantly, it denied statutory rights to Independent African trade unions from accessing and organising Black African workers and also denied Black African workers the right to be an employee etc. It marked the genesis of a dual racial industrial relations system.

colour bars (Wilson, 2001; Moodie, 1994; Burawoy, 1976; see also Bendix, 2015). Allen (1992) posits that some laws were instituted by colonial, Union of South Africa and apartheid governments while others were devised by the South African chamber of mines on behalf of mining houses (Allen, 2003a; 2003b; Wolpe, 1972; Wilson, 2001). These moves were meant to ensure that there was enough black African cheap labour and servants in different economic sectors especially mining, to instil obedience and total control of the Black African population. Burawoy (1976: 1080) opines that legal and political mechanisms were put in place to “... regulate geographical mobility and impose restrictions on the occupational mobility of migrants.” Therefore, these various repressive and discriminative pieces of legislation subjected Black African peasants to abuse, exploitation (at mines, farms, domestic homes and in the manufacturing sector) and denial of organisational rights ensured constant supply of cheap black labour (Kriekler, 2005).

However, Black Africans were not passive recipients as they formed resistance through, for instance, strikes (1914, 1920 and between 1946 into late 1980’s) at mines, hostels and in township of varying scales and successes (Allen, 2003a, Wilson, 2001; Bendix, 2015). Black African trade unions from early 1915 through to late 1980’s formed counterculture to challenge racial discrimination in the workplace and apartheid through political mobilisation in the workplace and broader society (Maree, 1982; Friedman, 1987; Baskin, 1991; Collins, 1994; Buhlungu, 2009; 2010; Bendix, 2015).

At the attainment of democracy, the South African government has introduced revised legislation and policies on labour, minerals development and municipal governance among others as redress of past evils. Most of these pieces of legislation have been amended from colonial and apartheid legislation. The state is now playing a regulatory and protective role of South Africans and its resources without discrimination as enshrined in the constitution of the republic. These pieces of legislation among others include Labour Relations Act No 66 of 1995; Basic Conditions of Employment Act No 75 of 1997; Skills Development Act No 97 of 1998; Employment Equity Act No 55 of 1998; Mineral and Petroleum Resources Development Act No 49 of 2008; Mine Health and Safety Act No 29 of 1996; Housing Act No 107 of 1997, the Mining Charter (DMR, 2015⁹)

⁹Department of Mineral Resources. 2015. Broad Based Black Economic Empowerment Charter (Mining Charter). Pretoria: Government Printers.

and Social Housing Policy. This depicts efforts to redress historical imbalances but a distinction between establishment and promulgation of legislation and policy and actual implementation must be noted.

2.2.3 Migrant Labour System

The migrant labour system, since its establishment at the arrival of white settlers on the Cape Colony, among other places, has undergone several changes in form and nature due to economic, social and political factors (Allen, 1992; Moodie, 1994; Nkosi, 2011). It also continues to pervade the South African labour sector. The success of past and present mines to a greater extent has been built around migrant labour system as a form of control but at the expense of black African mineworkers as cheap labour (Wolpe, 1972; Legassick, 1974; Leys, 1975; Murray, 1981; Demissie, 1998). Moodie (1994: 23) states that migrant labour in its early formation “... imposed a particular organisation for the appropriation of surplus value upon South African gold mining industry...not only cost constraints but also because most workers chose to migrate” (see also Crush et al, 1991). Burawoy (1976: 1050) states that “...migrant labour entails a dual dependence upon employment in one place and alternate economy... in another...”, and this implies separation of migrant workers from their families. Black African workers had to leave their homes in reserves and communal lands within South African borders and Southern Africa to work in mines, domestic houses, farms and factories through recruitment agency- Rand Native Labour Association - which was replaced by Witwatersrand Native Labour Association (WNLA or Wenela) and now The Employment Bureau of Africa limited (TEBA) an amalgamation of Wenela and Mine Labour Organisation (NRC) in 1977 (Prothero, 1974). On gold mines, there was African cheap labour that was unskilled and was mostly recruited from reserves in South Africa and within Southern Africa and earned meagre wages and white skilled and privileged labour recruited from Britain and also from South Africa (Burawoy, 1976; Murray, 1981; First, 1983).

Burawoy (1976: 1057) underscores that in order to understand the migrant labour system in South Africa, it has to be grounded in the context of the “...historically concrete circumstances of the articulation of different modes of production and the corresponding superstructures.” Allen (1992) points out that once the British and Boer settlers had established some level of control through war and land invasion resulting in incorporation, forging of concessions, allegiances, protectorates, scattering and annexation of local tribes (Zulu, Tswana, Sotho, Venda, Tsonga, Pedi, Swazi,

Basotho) with varied resistance, they started the process of recasting black Africans lives to suit their needs (Maloka, 2004; Murray, 1981). These needs included transforming peasant and subsistence farmers into wage labourers and servants and were dependant on the capitalist economy. This was achieved through ‘imposition of hut tax’, poll tax, ‘black South Africans living in reserves got dislocated with their families as they trekked to mines and other areas to join the wage economy’ (Burawoy, 1976: 1058; Legassick, 1974). Furthermore, expropriation of black South Africans land by the colonial, Union of South Africa and apartheid states made subsistence farming difficult thus the reliance on wage economy for additional income (Horwitz, 1967; Burawoy, 1976).

These wages had different uses depending on time and space - buying guns, cloth, cattle or to build umuzi (traditional homestead)-which signified that one has achieved manhood (ubudoda) (Moodie, 1994: 22) or help them have a comfortable life after retirement from mine work (Murray, 1981 from going for gold). However, it was the discovery of minerals like diamonds, gold, coal, and copper among others that caused a spike in the demand for black African cheap labour (Leys, 1975) and the migrant labour system was seen as vehicle to produce the much-needed manpower to work in these mines given the labour-intensive nature. For instance, in gold mines between 1906 and 1986, employment in mines rose from 81 000-534 000 with men coming all over from Southern Africa (Wilson, 2001: 104). In 1986, 315 000 mineworkers were from South Africa (60%) with Eastern Cape dominating, 109 000 (20%) from Lesotho, 58 000 (10%) from Mozambique and remaining percentages evenly spread from Botswana, Swaziland and Malawi (Wilson, 2001: 105 see also Crush et al, 1991; Alexander, 2001). Though South Africa became a democracy in 1994, the migrant labour system is still intact as many mineworkers from the Eastern Cape, Lesotho, Swaziland and Mozambique still oscillate between mines and their rural homesteads.

“Though gold and other minerals in the first century after 1886 ignited economic development, the same process produced poverty and patterns of unemployment that still hobble South Africa...” (Wilson, 2001: 103). This emanates from the solutions that miner owners and the state employed to solve the labour shortage in mines (Wilson, 2001). “The Chamber of mines monopolised the organisation and recruitment of black African labour and fixed wages that did not rise for two decades and reformed the migrant labour system recruiting in and outside South Africa, built single

sex hostels hence African labour moving between home and mines depending on the nature and length of contracts” (Wilson, 2001: 103; Bundy, 1972). Colour bars, white privilege in 1911, denied black African labour recognition as workers in the workplace i.e. through Industrial Conciliation Act 1924 and subsequent amendments and apartheid’s separate development project contributed to this labour unrest and violence crisis which still haunt South Africa today (Legassick, 1974, 1975; Johnstone, 1976; Bendix, 2015, Burawoy, 1976; Wilson, 2001). This is evident by the case of wage related wildcat strikes that happened between 2012 and 2015, undertaken by mineworkers of whom the majority were migrant workers. Striking mineworkers, for instance, in the platinum belt together with the Association of Mineworkers and Construction Union demanded R12 500 for entry level basic wage partly because remuneration was inadequate to meet the demands of two households i.e. one at the workplace and another at the rural homestead (Bowman and Isaacs, 2014: 4; Sinwell, 2013). Furthermore, despite an official end to apartheid, migrant labour system still remains intact not only in the mining industry but across other sectors.

In light of the above facts, it is however, important to take note of Peter Alexander’s works on coal mines in Witbank and Natal South Africa where he has challenged the position that cheap black African migrant labour on mines oscillated between mines and homes in labour sending rural areas (Alexander, 2008, 1999, 2010). Alexander (2010: 506-507) argues that the dominance of the cheap, oscillating migrant labour model in understanding South African history in relation mining creates an impression that mineworkers never settled down around mining operations and is not true. Alexander (2001) states that there is a second model on African migrants known as stabilised labour. Mozambican migrant labourers were willing to settle around Witbank collieries and work in the mines because they were avoiding *xibalo/chibaro* (little or unpaid forced work during the colonial period) in the Portuguese territory while the same was observed on collieries in Natal (Alexander, 2001, 2008). Collieries allowed construction of native huts on some of their estates and were dominated by wives of migrant labourers. Witwatersrand Native Labour Association (Wenela) managed to monopolise recruitment of migrant labour from Mozambique and distributed it to Transvaal and Orange Free State based coal and gold mines. Witwatersrand gold mines were dominated by oscillating migrant labour while collieries around Witbank district had mainly stabilised migrant labour that was willing to settle down especially the Mozambicans (Alexander, 2001). It is important to note that gold mines had very few settled labour and more oscillating migrant labour due to restrictions while collieries in the Witbank district had more settled labour

and less oscillating migrant labour. For more on collieries in Natal see also Alexander (2008). Noting the evidence provided by Peter Alexander on the collieries from late 1800 to 1960s, it is important to acknowledge the variegated nature of African migrant labour within the mining industry in South Africa. However, this does not negate the role migrant labour played as a form of control of movement and labour of African migrants.

2.2.4 Traditional authority system

Traditional authorities i.e. Chiefs or *Indunas* depending on language have played different contradictory roles in the South African political, economic and social systems. In pre-colonial times, Africans had traditional authority systems that operated like fiefdoms in the governance, administration, allocation of resources and various issues affecting their peasant communities. This was through the recognition traditional leadership i.e. chief or king along known hereditary lines (Ntsebeza, 2005; King, 2005). Bundy (1972) states that Mfecane and occasional rise of the Zulu kingdom, raid and wars with settlers, Afrikaner farmers dispersed Africans in different directions. Some went to the Cape as migrant labour while those who successfully defended their land remained on their land. In addition, African political systems experienced constant raids and wars, traditional chiefs in some instances encouraged able-bodied men to go and work on farms and as domestic workers and use the earned wage to buy guns and help fight off enemies (Allen, 1992).

Land expropriation through wars and raids created a waged class (King, 2005). For instance, during the ‘Great Trek’ of Boers moving northwards running away from the Cape expropriated land from i.e. the Tswana speaking Bafokeng in the province now known as North West (Comaroff and Comaroff, 2009). They achieved this through “...proclamation of sovereignty over large tracts of land by right of conquest after the defeat of warlike tribes...” and the tribes were left landless and bundled on private farms (Comaroff and Comaroff, 2009: 98). The chief of the Bafokeng realised that to survive they had to repossess their land. He enlisted the services of Lutheran missionaries to buy land and keep it on their behalf. They raised funds by selling livestock, chiefs’ cash reserves and encouraging men to go and work on the diamond mines and white farms and pay a portion of their earned wages as tribute and tax (Comaroff and Comaroff, 2009). Through turbulent times, the Bafokeng were able to acquire land as private farms that became the Bafokeng territory (Manson and Mbenga, 2003). The incorporation and reconstitution of traditional authority system by the colonial and apartheid governments made it an appendage of the state. The Colonial

authorities took advantage on ambiguity that existed between chiefs and their subjects in terms of accountability and legitimacy of traditional authority (Ntsebeza, 2000; King, 2005; Bundy, 1972). In other words, when colonial administrators realised that black Africans were unwilling to join the wage economy because of their successful peasantry activities, they sought to use traditional leaders as indirect rule (Ntsebeza, 2005; King 2005; Mamdani, 1996, 2001).

This power and authority over administration and control of chief's tribesmen and native land was boosted by several pieces of legislation including the Native Affairs Act of 1920; Native Administration Act of 1927 and Natives Acts of 1936 among others. With these powers, traditional leadership played an important role on the migration of able-bodied men to join the wage economy, that is, diamonds and gold mines in Kimberley and the Witwatersrand areas respectively (Maloka, 2005; see also Murray, 1981). Maloka (2005), on Basotho Chiefs states that they were motivated by impending benefits like gifts from recruitment agents, soldiers and some white farmers. Those who refused to go, for instance, to Witwatersrand mines, Chiefs threatened to take their land and hence became unpopular. They were accused of selling their people without consulting them (Maloka, 2005: 56). Therefore, Ntsebeza (2005:22) comments that "traditional authorities were co-opted as an extended arm of the colonial powers...and this control of resources put them into a powerful position...rather than through popularity from amongst their subjects."

In addition, the traditional structures we used by the apartheid government to further extend the British system of indirect rule (King, 2005:66). The Bantu Authorities Act of 1951 made them mere agents of the government- Department of Native Affairs and Minister of Native Affairs. They became more powerful as they collected tax (hut tax on behalf of apartheid government in tribal authorities which compelled many men to join the capitalist wage economy by selling their labour) (Maloka, 2005). In addition, the creation of reserves and homelands that were "...segregated institutions meant to act as a political safety valve to ensure there was no uncontrollable influx of Africans to urban areas..." (Ntsebeza, 2005: 22 citing Hudson, 1987) and a "...economic base for continued reproduction of rural people and justifying cheap migrant labour system" (Ntsebeza, 2005: 22 citing Moll, 1983: 2; Wolpe, 1972). Writing on Lesotho chiefs, Maloka (2005: 57) shows that besides being labelled as 'sell outs' by their tribesmen, chiefs "...controlled the movement of their men to the labour centres for political and humanitarian reasons..." for example, 4000 Basotho men left gold mines in South Africa leading to the gun war in 1880. Traditional leaders

played an important role on migrant labour in mines. This included recalling some men working in mines for family reasons for instance death in the family, poor health, when men stopped sending remittances back home or repatriation of dead mineworker(s) (Maloka, 2005).

At the mines and compounds, traditional leaders in some cases could visit their subjects to see their working conditions, resolve disputes and to work (Allen, 1992; 2003a; Maloka, 2005). It needs to be noted that in some cases, the Chief's son or Indunas were unpopular with their subjects especially if they had not inherited the throne but chosen by colonial or the National Party government (Allen, 2003a; Maloka, 2005; Ntsebeza, 2005; Moodie, 1994). They were seen as sell-outs advancing their personal interests and those of the government and mines, and mineworkers always resisted such actions. In compounds, for instance, Moodie (1994) shows that Indunas, chiefs and mine police (tribal representatives) played a critical role in ensuring general law and order in the compounds; and were also in some instances at the heart of informal authority, that is, *imiteto* (Moodie, 1987; 1994: 83-85). Accordingly, during the colonial and apartheid periods, traditional leadership and its authority played different roles for and against the repressive systems depending on region, time and space. However, what is of importance is the connection of traditional chiefs with mines, the state and the migrant labour system. The fact that they directly and indirectly participated in and around the sending areas of migrant labour system through spatial control enhanced by different colonial and apartheid pieces of legislation made them active agents in the creation of a black working class.

In the post-apartheid South Africa, the role and function of traditional leadership has become contradictory and contested in some instances because traditional leadership derives its power and authority through hereditary lines while as in the democratic South Africa, leaders ought to be chosen by their constituency (Ntsebeza, 2005). This has led Ntsebeza (2005) to conclude that democracy has been 'compromised' as the ascension of i.e. chiefs to power via hereditary line violates the ideals and value of the South African Constitution. The legislation around the place and function of traditional authority based on the Traditional Leadership and Governance Framework Act of 2003 and Communal Land Rights Act of 2004 perpetuate and reinforce the same powers and privileges they enjoyed during apartheid though the Bantu Authorities Act of 1951 (Ntsebeza, 2005). Of interest is the question of natural resources particularly land where in post-1994, traditional leaders i.e. chiefs' control and regulate access and allocation of land and

large pieces of land allocated to businesses like mines without consultation and consent of communities.

In addition to the above, in places that have minerals, chiefs have become active in clinching lucrative deals i.e. the Bafokeng are the richest tribe in Africa and completely transformed the tribal physical landscape (Manson and Mbenga, 2003). This has given rise to what Comaroff and Comaroff (2009) term as ‘Ethnicity Incorporated (Inc.); where ethnicity has become commoditised for instance the Baroka Platinum part of Baroka Tribal Trust offering R 3 billion to Anglo Platinum for Bokone Platinum mine in Limpopo (Motsoeneng, 2015). In some cases, these ‘Ethnicity Inc.’ ventures have been successful i.e. the Bafokeng while in other instances have led to massive conflict with community members against their chiefs and business. The case of Platreef Mine in Mokopane owned by Ivanhoe depicts such where Chief Kekana (through his power to control and allocate land) has been accused of receiving bribes, gifts among other things from Platreef to forge BBBEE deals among other things and evict community members from their land for mine operations to resume (Biyase, 2014; Davis, 2015). This has led to serious protests and promises of violence by community members who feel aggrieved. The above case depicts that democracy has been compromised (Ntsebeza, 2005) as traditional authority actions are violating constitutional rights of community members in pursuit of commoditising ethnicity in joint ventures with mines. Is this a new form of control by capital¹⁰?

2.2.5 Compound housing system

“Compound system is one of the most effective forms of labour control ever invented...” (Moodie, 1994: 11). During the colonial and apartheid periods, the mining industry was characterized by forced incorporation of mine labour into mining work through the migrant labour system and almost absolute control through the compound system aided by repressive laws (Moodie, 1994; Allen, 2003a). This had a profound impact on the social fabric in areas where mineworkers were drawn from to the mines (Bezuidenhout and Buhlungu, 2010). As families were broken apart,

¹⁰Though traditional authority is discussed in this brief literature review and not further developed in the findings sections, it was meant to show different ways that the colonial and apartheid states sought to control black Africans through indirect rule. The two mines are located in areas that do not fall under tribal authority hence absence of further engagement.

economic activities halted as men became proletarianized and also found themselves having to contend with two worlds, 'home and work' (Ngwane, 2003; Moodie, 1994).

Compounds were first established at Kimberley at diamond mines initially to curb diamonds smuggling and illicit dealings. It later spread to gold mines at the Witwatersrand, coal and platinum mines (Van Onselen, 1976; Turrell, 1987; Wilson, 2001; Demissie, 1998; Allen, 1992, 2003). On mine housing in Zimbabwe, Van Onselen comments that it "...was an institution which provided the framework for the total exploitation of black workers ...it was the compound, acting as the college of colonialism, that did much to rob Africans of their dignity and helped mould servile black personality..." (1976:157). In South Africa, mine compounds were designed as a locus of control for migrant African black miners.

Moodie (1994:77) quoting J.S.G Douglas,

"the compound must be suitably constructed to contain the natives and I know of no better attempt at this than the city deep compound...surrounded first of all by a high galvanized iron fence...barbed wire at the top which prevents anybody getting in or out...buildings are constructed that from the compound manager's office he can see down any direction along the line of huts...that means they are able to see exactly what goes on in the compound and practically almost in the rooms."

Such a description depicts an idea to reproduce Foucault's panopticon impression in an attempt to create a total institution to discipline behaviour hence producing efficient and productive individuals (Foucault, 1977). Such spatial control can be seen to have been meant to contain mineworkers in designated spaces like mine compounds and this resonates with the view that landscape is shaped in ways that enable any social system to reproduce itself especially when viewed together with homelands or reserves (Herod, 2001).

In the compounds, contestation continued from the workplace over control of space as depicted by the use of hegemonic control (Moodie, 1994) through compound managers, mine police and Indunas' who at times used force and coercion (Bezuidenhout and Buhlungu, 2010) to control workers. This aptly captures the notion that control of space was part of the capitalist project of making landscapes in such a way that profit became realisable (Herod, 2001). Furthermore, workers resided in hostels along tribal and ethnic lines which was a divisive factor toward formation of worker solidarity and according to Badenhorst and Mather (1997:76), "it allowed the

mines to ostensibly control, regulate and mobilize workers.” However, Moodie and Ndatshe (1994) point out that force and coercion was met with resistance from mineworkers as evidenced with the presence of moral economy. Racial despotism was limited by moral economy i.e. imiteto¹¹, which sought to reduced racial abuses underground and also within the compounds (Bezuidenhout and Buhlungu, 2010). Moral economy was room based and mineworkers with the help of izibonda¹² would mobilize others and wage resistance on things that they did not agree with based on imiteto (Moodie, 1986). In this instance it can be argued that space in the form of rooms played a pivotal role in ensuring that the spatial vision of workers was realised. Also, it can be noted that regardless of the scale, ability of social actors to control space gave them some degree of power. As such even though structures exerted themselves upon the workers, worker agency enabled them to wage resistance premised on imiteto.

Furthermore, the ability of National Union of Mineworkers to capture and manipulate the compound system as a mechanism of control of space and recruit and mobilize workers into unionism depicts worker agency. Bezuidenhout and Buhlungu (2010) argue that the ability of NUM to organize workers in the compounds enabled workers to determine the direction of labour geography of the mining industry. In fact, associational control by authorities was weakened by NUM’s mobilization of workers through the public-address system to resist exploitation and abuse and hence bred worker militancy. The periods ranging from 1982 and 1987 were the turning points for worker militancy as NUM launched numerous campaigns like ‘mineworkers take control’ and that the mining authorities were left in a quandary and had to abandon the compound accommodation system as their spatial control had been disturbed profoundly by NUM (Bezuidenhout and Buhlungu, 2010). It shows that, space and spatial relations serve as sources of power and objects of struggle (Herod, 2001). New accommodation patterns and strategies became a necessity in order to stabilize workers and also ensure undisturbed production (Crush and James, 1991 see also Laburn-Peart, 1995).

Housing delivery and home ownership was seen by other critics as a strategy to stabilize workers through provision of housing units and also mortgaged home ownership schemes (Crush and James, 1991 see also Laburn-Peart, 1990). This was meant to retain the workforce as mineworkers

¹¹Plural form of umteto. Umteto-Nguni for rule, law, proper procedure (Moodie, 1994)

¹²Plural form of Isibonda. Isibonda-elected room representative on compound (Moodie, 1994)

started to reside with their families in family units. On the other hand, a worker who has mortgage instalments would not engage in ‘illegal acts’ that may result in suspension or dismissal as he will not be able to pay for such when jobless. As such Crush and James (1991:302) contend that “...housing delivery and home ownership is now part of a new industrial relations strategy to promote social differentiation to dampen worker militancy and depoliticize the workforce.” Crush and James (1991) argue that housing assistant schemes that were offered by mining companies to black mineworkers were based on capitalist principles. Furthermore, market-based housing schemes by mining companies and the state to determine spatial relations within living space can be regarded as a new mechanism of controlling labour (Bezuidenhout and Buhlungu, 2010). In view of the above, there was a concerted effort between the state and capital to subtly control labour through residential space after traditional spatial organization had crumbled.

Bezuidenhout and Buhlungu (2010) contend that an end to apartheid resulted in reconfiguration of compounds as they were refurbished, worker population reduced as they moved into informal settlements, township houses, rented flats just to mention a few (see also Chinguno, 2015). They also note that, the advent of democracy in 1994 witnessed rapid upward mobility of black mineworkers into positions formerly held by white miners and hence moved to better suburbs as they could afford to reside in them. Spatial control has now assumed a new dimension through differentiation and segmentation catapulted by the market (Bezuidenhout and Buhlungu, 2010). Workers through trade unions now control compounds that have been refurbished with security to an extent that they are now regarded as safe from criminals (Bezuidenhout and Buhlungu, 2010). Given the new spatial configurations that have taken place on old mines, do they explicitly depict the dominance of capital over workers? Bezuidenhout and Buhlungu (2010) argue that, workers now have a profound choice to settle where they want either within the mine or on alternative accommodation. The ability of mineworkers to control compound space and exercise choice of where to reside depicts worker agency even though they are still within the confines of capitalist landscape.

There has been a boom of new mines in South Africa since post 1994 as evidenced by platinum mines in which subcontracting is widespread (Moodie, 2012) and that have different housing policies. The migrant labour system is still intact as mine workforce is still being drawn from different parts of the country and outside the republic (Dansereau, 2002; see also Moodie, 2012;

Crush and James, 1991). Several mining towns are what they are due to economic activities within them. Herod (2001a) argues that, fashioning of landscapes in certain ways is crucial to the ability of social systems to reproduce themselves. This includes ensuring efficient transport system to transport workers and raw material, finished products to consumers and smooth flow of capital to where it is required (Herod, 2001). As such space-time organization (geography of capitalism) is very much central to the ability of capitalism to function and reproduce itself through control of labour, space and time and the whole process (Herod, 2001). However, “space can be used by both capital and labour... to further political and economic agendas” (Herod, 2001:257).

2.2.6 Racialized workplace relationships/ racial and discriminative industrial relations

Mine workplaces were a space that articulated racial hierarchy, discrimination and white privilege. Mines recruitment, incorporation, allocation and control (Peck, 1996) was done based on labourers’ skin colour. Racial despotism epitomised the workplace and was structured along the colonial racial discourse that promoted master and servant relationships and apartheid’s white supremacy agenda (Moodie, 1994). This promoted negative industrial relations between white mine workers, white managers and black African migrant workers (Bendix, 2015). In gold mines for instance, “... labour was divided racially between well-remunerated white supervisory workers and management and exceedingly low-paid, compounded and indentured migrant black workers...” (Moodie, 1994: 44). It promoted divisions that were underpinned by use of violence and abuse by white workers and white managers towards black African workers at points of production in carrying out tasks (Moodie, 1994). However, black African migrant workers contested such hegemony through various means like moral economy, strikes and solidarity (Moodie, 1994). White management hegemony and racial despotism was backed up by the state through legislation like Factories, Machinery and Building Works Act 1941 and Industrial Conciliation Act 1924 among others and unfair lengthy contracts for black African workers (Allen, 1992; Bendix, 2015). Jobs and certain posts were reserved for white workers who were deemed as skilled through racial colour bars (Johnstone, 1969; Legassick, 1974; Wolpe, 1972) and resulted in class conflict i.e. Rand revolts of 1922 (Kriekler, 2005). The Industrial Conciliation Act 1924¹³

¹³Industrial Conciliation Act 1924 is used in general terms, but the author is aware of periodization and amendment issues. The Act after becoming law went through amendments in 1934, 1956, 1959 and 1979 and repealed by Labour Relations Act 1995.

was a major blow to black African migrant labour as it did not recognise them as workers and also denied independent black African trade unions statutory recognition hence did not have organisational rights i.e. collective bargaining, could not form a trade union and this led to further exploitation and discrimination (Allen, 1992; Bendix, 2015).

Von Holdt (2003) on workplace change in South Africa after attainment of democracy has shown through the analytic concept ‘apartheid workplace regime’ that the workplace and factories were spaces of white domination and subjugation of black African workers. He states that “...apartheid workplace regime had deep historical roots in the evolution of labour regimes, work practices and racial structures of power within settler colonialism and was underpinned by the educational and labour market policies of apartheid” (Von Holdt, 2003: 27). Skill and authority were allocated on racial lines hence the workplace became a space of expression of white supremacy (Von Holdt, 2003). Racial division of labour, racial segregation of facilities, racial structure of power epitomised the apartheid workplace regime as it expressed despotism through coercion, fear and threats of dismissals to black African workers (Von Holdt, 2003). Webster (1985) had also made a similar observation in the steel foundries where workplace organization took a racial form only to be challenged through reforms by black African trade unions. South African workplaces i.e. factories, plants and mines were a space of white dominance over black African workers as “...any white had the ‘right’ to issue instructions to any black” (Von Holdt, 2003: 31). Some tasks were personal i.e. to make tea while others were production related that blurred instructions on personal matters and production had roots from colonial discourse of master servant relationships (Von Holdt, 2003). As a result, it strained workplace relations by brewing conflict as some black African workers were arbitrarily dismissed while others were physical assaulted (Von Holdt, 2003; Moodie, 1994). This stemmed from the fact that labour laws did not recognise black African labourers as workers, but there was to be a slight shift based on Wiehahn recommendations in late 1970’s and early 1980’s to democratise the workplace (Bendix, 2015; Allen, 2003a, 2003b).

‘Changes in the production process, labour markets and the political arena’ through trade unions like the National Union of Mineworkers (NUM), National Union of Metal Workers of South Africa (NUMSA) and other labour movement actors (Von Holdt, 2003: 46, Allen, 2003a, 2003b, Baskin, 1991) placed a toll on the apartheid workplace regime as black African workers began to resist the status quo. With the attainment of wider democracy with a new constitution and labour laws and

institutions to regulate industrial relations, it was envisaged that the transition in the workplace would usher complete workplace democratisation (Allen, 2003b; Von Holdt, 2003). To some extent this has happened, but such transformation has been hampered by animosity between white workers and black African workers as the former seek to maintain such privilege. Webster (2005: 56) summarises the impact of the colonialism and apartheid workplace regime, saying “...it left a legacy of racism, low trust, low skills, high absenteeism, adversarial industrial relations, and a lack of identification by employees with the goals of the enterprise”. The situation has been compounded by the fact that transition in the workplace is happening in the context of globalisation and liberalisation (Webster, 2005).

2.3 Conclusion

In light of the above, the opening up of South Africa to global markets, has led companies to restructure and reinvent themselves to be competitive and meet global standards. Workplace restructuring due to competition and new technologies has led to massive job and benefits losses through retrenchment and new forms of employment i.e. flexible work or non-standard work (Edgell, 2006) and reduced numbers of workers in regular employment (Webster, 2005; Edgell, 2006). In other words, globalisation and economic liberalisation has resulted in change of mine workplace relations among others i.e. return of market despotism to discipline workers to accept low wages, poor working conditions and non-standard forms of employment (Webster, Lambert and Bezuidenhout, 2008; Burawoy, 1985). This has had immense impact on workers and labour trade unions as they battle to keep jobs and relevance hence increased work stoppages and strikes (Buhlungu, 2010; Webster, 2005). Given the account of mining history, its complexities and dynamics and current labour instability, how then can we account for and explain organisation and design of new mines in terms of physical outlay, work allocation, control of workers and the associated space (work and residential) and labour’s resistance to such efforts at new mines in South Africa? An approach that factors in the role of both capital (mining companies and labour workers and other social actors) in its analysis of structuring and shaping of space is necessary. The following chapter provides theoretical underpinnings of this study, labour geography.

Chapter 3: Labour geography and labour process theory: space, labour and capital nexus

3.1 Introduction

In the previous chapter, showed how the emergence of mining in South Africa disrupted the African peasant modes of production and social organisation of life. In search of profits from found minerals (diamonds, gold, coal, and so forth), mine owners with the assistance of the state (both colonial and apartheid) subjugated and exploited Black African labour through racial and segregationist legislation. Black Africans were reduced to cheap migrant labour punctuated by low wages, poor working and living conditions and this reached its zenith in the apartheid period. The workplace (mines) and places of residence (homeland and traditional authority) became sites of managerial control, exploitation, contestation and resistance. Mining companies formed forces with the state in the exploitation Black African labour. With the attainment of democracy, reforms have taken place in the workplace and broader society through legislation and policy. Given the research problem at hand, this chapter focuses on labour geography and labour process theory to analytically examine the relationship between new mines and labour or social actors broadly and how this plays out spatially. This chapter, therefore, looks at labour geography and related analytic tools and show how they can be used as conceptual lenses to examine relations between new mines, labour and broad host communities as social actors.

3.2 Labour Geography

To understand the interaction between capital, that is, mines and labour (social actors), an approach that factors space in its analysis is imperative. Capital does not operate in isolation or in a vacuum. It interacts with different social actors and regulatory authorities. Mines interact with social actors like human beings on space hence setting off production processes that seek to produce profit. The location of a mining operation is determined by mineral deposits and results in reconfiguration of space (Harvey, 2006) by reshaping and restructuring socio-economic and political organisation of societies for successful extraction and production of mineral resources. The changes on space and everyday life of social actors can generate contestations, resistance or compliance to capital's logic

as land for instance has a meaning and significance to them. In the context of this study and the research question at hand, bearing in mind the broad nodes of control used during the colonial and apartheid periods on mines, how can one explore the ways in which new mines are controlling space and labour in democratic South Africa from a conceptual point of view? Labour geography is an appropriate framework that can provide a wide variety of conceptual tools to examine the relationship between capital and labour and how it plays out spatially. Labour geography provides ways in which place and space can be used to give more attention to agency of labour and other social actors, its plight and illuminate how contestations, resistance and reworking strategies unfold (Herod, 1997, 2001; Katz, 2004: 152; Bergene, Endresen and Knutsen, 2012). It gives more prominence to labour's agency as it interacts with capital in making economic and social landscapes. Labour geography is a relatively new approach, not yet fully developed but with burgeoning empirical and theoretical literature from myriad of authors writing from different orientations. Andrew Herod's works (1995, 1997, 2001 and 2012) form the foundation of my conceptual framework as he provides a relatively systematic scheme on labour geography. further links Herod's ideas on worker agency with other scholars who have written on space, spatial fix, social-spatial dialectic, place and identity. These scholars include David Harvey, Edwin Soja, Doreen Massey, John Agnew and other labour geography scholars. The intention is not to engage and entangle the study in broader geographic debates but rather engage with labour geography from a sociological standpoint. However, the researcher acknowledges the debates and contestations amongst geographers on labour geography.

Herod (2012: 335) posits that "capitalism is a geographically structured economic system" and to understand it, the role of capital, space and labour in the making of geography of capitalism must be considered. Therefore, this study utilises a labour geography perspective to unpack the spatial orders¹⁴ of post-apartheid South African mines. Labour geography as an approach focuses on the role of worker agency in analysing the interaction between capital and space in economic geography. Herod (2001a) notes that though the production of space is central to the way capitalist systems reproduce themselves, the role of labour in this interaction is imperative. The production of space is historically contested because manipulation and control of the process is a source of power (Herod, 1997). Labour geography developed as a critique and response to neoclassical

¹⁴The phrase spatial order is strictly used in this study as how work and social life is organized, controlled and contested by both capital and labour geographically.

economic geography of the 1960s and 1990s and Marxist economic geography of the 1980s influenced standpoints on geography of capitalism and limited attention to labour. Herod (2001a:14) observes that neoclassical and Marxist theorizing is capital-centric as they depict workers as passive actors who only resist and not initiate struggles. This is depicted by some Marxists who argue that it is capital that acts; and that landscapes are shaped by capitalism in search of profits, that is, capital occupies space and produces space (Herod, 2001a:14). Such a standpoint overlooks the role of labour in this process and relegates workers to passive agents. Workers are seen as consumers of economic landscapes for instance goods and service landmarks like houses, banks shops, taxi ranks just to mention a few and not active participants in the actual production of such spaces (Herod, 2001a). Labour geographers critiqued such an essentialist thinking that space is just a stage where economic actors act by arguing that it glosses over the role of worker agency in shaping geographical landscapes at any time to realize their own needs and reproduce themselves (Herod, 2001a: 5, 2016).

Central to labour geography is its critique of neo-classist and Marxists theorizing of economic geography on its ontological privileging of how capital produces space, that is, ‘spatial fix’ to enable accumulation (profit) and advocates the need to theorize the way workers actively shape space in enabling them to engage in their social praxis (Herod, 2001a:13 citing Harvey, 1982, 2017 see also Strauss, 2018; Castree, 2010). Labour geographers problematize the failure of geography of labour to see workers as active participants in shaping of geographic landscape i.e. in terms of residential settlements, social services like schools, clinics and recreational facilities (Bezuidenhout and Buhlungu, 2010; Herod, 2016; Coe 2012). In other words, labour geographers call for both workers (labour) and organisations (capital) to be joint geographic actors that jointly shape spatial fixes to realise their political and economic interests (Herod, 2001a). Herod (2001: 8) aptly notes that:

The production of space in particular ways is not only important for capital’s ability to survive by enabling accumulation and the reproduction of capitalism itself, but it is also crucial for workers’ abilities to survive and reproduce themselves...The process of labour’s self-reproduction...must take place in particular geographical locations...it becomes clear that workers are likely to want to shape the economic landscape in ways that facilitate this self-reproduction.

Considering the above, it calls for a concerted effort in exploring joint capital and worker actions in structuring, restructuring, shaping and reshaping of landscapes to meet their interests. Key interest of labour geography is therefore to explore how social actors like workers make their own spatial fixes and attempt to shape geography of capitalism (Herod, 2016: 16). However, they do not make these geographies as they please and under their own circumstances (see Herod, 2017, 2012). Contestations and tensions inform these struggles to control space considering actions of capital (see also Kiil and Knutsen, 2016). Social actors' visions on the landscape may not be the same with that of capital (Herod, 2017).

Having noted the above, there are several stock-taking reviews on progress in labour geography and consequent lacunae (see Castree, 2007, 2010; Lier, 2007; Herod, 2010; Coe and Jordhus-Lier, 2011). It has been argued that worker agency remains both under-theorized and under-specified (Herod, 2010; Coe and Jordhus-Lier, 2011; Gialis and Herod, 2014; Geoforum Editorial, 2017). Also, Coe (2013) and Coe and Jordhus-Lier (2011) called for the development of a more conditioned and embedded notion of agency and in this regard Hastings and MacKinnon's (2016) have shown how agency can be re-embedded at the workplace scale in Glasgow, Scotland. Furthermore, new literature shows how labour geography scholars are examining agency in the context of migrant work (McDowell, 2015; Axelsson, Malmberg and Zhang, 2017), informally organised and unorganised workers (Rogaly, 2009; Gialis and Herod, 2014; Lier; Sportel, 2013) in response to critique of labour geography of being one-sided toward formally organised workers. In the same vein, Strauss (2017: 622) on the progress report of labour geography, has argued for "spatialized theorization of precarity."

However, Hastings (2016: 307) warns on the romanticising of worker agency with specific focus on "...the lack of consideration for ethical and moral dimensions in the analysis of worker struggles (see also Castree, 2007)." In addition, Strauss (2018: 1) has recently underscored the need for labour geographers to examine "grounded approaches to agency for solid theory-building and politics of knowledge production in the labour geography field." Undoubtedly, the field of labour geography has matured and expanded over the years with a plurality of scholarship that evolves around "...Herod's reworking of David Harvey's concept of the spatial fix as core of labour geography because of its relationship with how labour geographers think about agency" (Strauss, 2018: 3).

Labour geography attempts to theorise the spatiality of capitalism recognising the role that both capital and labour play in developing economic and social landscapes. To theorise the spatiality of capitalism, economic geographers have devised panoply of concepts to develop an analytic framework. It is these concepts that utilizes to analyse the interaction of the two mines understudy with labour (social actors) and the state in the construction and remaking of landscapes. In the process, I provide revised conceptual interventions that include; sanitised space, sanitisation of absolute spaces, time-space compression of relative space, social inclusion and or exclusion of exclusion of relational, sanitised workplace order and sanitised residential spaces. This study therefore makes a contribution to the field of labour geography in the following ways; providing empirical evidence from global south (given the fact that most of the debates have been from Anglo-English speaking geographers on ‘industrialised west and Europe) on spatiality of capitalism and its interactions with labour through this comparative study on new mines in South Africa and conceptual interventions as depicted by sanitised space, sanitisation of absolute space, time-space compression of relative space, social inclusion/exclusion of relational space, sanitised workplace orders and sanitised residential spaces. These concepts make important theoretical contribution towards our understanding of the interaction between social actors and capital on space grounded in a historical-geographical materialism and subsequent outcomes. This is achieved by showing how the two mines Kolomela, Zibulo, workers and surrounding communities contest and struggle over space as they seek to execute their own visions and social relations that emerge.

3.2.1 Space as a source of power: Harvey’s Matrix of Space

In further exploring the concept of space, further link Andrew Herod’s (1997, 2001; 2012) ideas on capital, agency and space with a further elaboration of David Harvey’s metaphoric use of space as an analytic tool that can be used to understand the impact of capital and worker agency on landscapes. This link is important because “space is by its very nature full of power and symbolism, a complex web of relations of domination and subordination, of solidarity and co-operation” (Massey, 1993: 156; 1995) and can help one understand the power geometry between capital and labour, that is, mining company and its workers and society. For Harvey (2006:120), space has a deep and important meaning than just the physical we see especially “... the nature of space if we were to understand urban processes under capitalism”. He comments that space can be classified

into a ‘tripartite division’ as absolute, relative and relational or combination of the categories depending with context (Harvey, 2006). He argues that such a categorization allows one to explore and analyse urban experiences and memories of people and the dialectic tensions within the three categories (Harvey, 2006).

Harvey (1973:13) sees absolute space as “... a thing in itself with an existence independent of matter.” He further notes that it is fixed, pre-existing, and immovable and individuals record or plan events within its frame in the Newtonian sense (Harvey, 1973). This includes physical objects like private and public buildings, nature and other things we can see and touch. In other words, a spatial fix for instance can be seen as absolute space. In operationalising the notion of absolute space in this study, the concept of sanitisation of absolute space to show how Kolomela mine designed mineworker housing as part of its housing strategy in a democratic South Africa and how Kolomela and Zibulo have reconfigured space at the respective mines. Sanitised absolute space suggests elimination of undesirables that cause disorder or harm at the two workplaces and also at Kolomela’s housing by capital. This opens possibility of control of labour at the point of production and spaces of social reproduction (houses).

Relative space is understood as the relationship existing between objects which exist only because objects exist and relate to each other (Harvey, 1973: 13). For Harvey (2006), space is relative in a double sense because there are multiple geometries to choose from the spatial frame and on what is it being relativized and by who (2006: 121). Measurement of distance and time on absolute space depends on the observer’s point of reference. Of significance, Harvey (2006) avers that space must be understood in relation with time hence the notion space-time or spatio-temporality. Objects and people are placed in different locations thus for instance one’s movement from one place to another result in displacement in real sense but as a lived experience can create for instance anxiety of being late to work due to traffic jam. The notion of friction of distance comes into play and people start calculating distance, time and the cost it will take to reach that destination using one’s current location as a point of reference (Harvey, 2006). Therefore, relativizing space provides a possibility of calculability and control (Harvey, 2006). Such is utilised by both labour and capital as they make their own geographies. Herod (2017: 9) observes that relative space expressed through relative distance can change in a dramatic way because technology on transportation and telecommunications innovations reduce travel time and costs to move people, goods, information

and money. Harvey (1989) calls this phenomenon time-space compression as physical distance has become annihilated and shrinkage of the globe. In this this, time-space compression of relative is used to show how capital institutes structures on the economic landscape that allow commodities like coal and iron ore in the case of Zibulo and Kolomela respectively are transported through conveyor belts and networked railway lines for processing and freighting. Furthermore, in the case of Kolomela mine's houses, sanitisation of absolute space for instance location of the houses on the edge of the three residential suburbs enables quick entrance and exit of buses and moto-vehicles that fetch mineworkers to and from the mine. Production processes and labours' life becomes regulated by time which according to Harvey (1990) is a social construction and "...a material force that exerts a disciplinary pressure within capitalist societies" (Castree, 2009; Rogaly, 2009: 1977).

Harvey (1973:13) comments that relational view of space or time does not exist outside processes that define them. Processes do not occur in space but define their own spatial frame hence the need to focus on the relationality of space-time (Harvey, 2006:123). Relationality of space-time implies that peoples' collective memories (workers') for instance about absolute or relative space cannot be framed on maps or grids (absolute space) or through various circulation laws (relative space) but are experienced through social relations (Harvey, 2006). Thus, through lived space, external things are internalized producing fantasies, frustration, memories, desires that workers' have about absolute or relative space, may mobilize and coalesce into a group and articulate their demands for certain things they deem fundamental in a workplace for instance. Accordingly, in this study I utilise social inclusion/exclusion of relational space to show how the configuration and reconfiguration of absolute space is intentionally and unintentionally used include and exclude different social actors by both capital and some residents of Postmasburg town. The outcome of this is the paradoxical reconstitution of social relations of different social actors and capital in Postmasburg.

Therefore, a synopsis on Harvey's matrix of space as shown by the above discussion depicts that to understand agency, space must be put into the equation as the positionality of workers through different experiences on space (absolute, relative and relational) affect actions of agency positively or negatively. Through conceptual intervention as epitomised by sanitisation of absolute space,

time-space compression of relative space and social inclusion and exclusion of relational space¹⁵, the study seeks to show how both social actors that include workers and capital have vested interests on the control and shaping of space whose outcome alter social relations. This conceptual intervention attempts to deal with challenge of the abstract nature of Harvey's formulation and in doing so, the study incorporates agency of social actors on space.

3.2.2 Spatial fix

“Capital and labour need to be brought together in a particular geographical configuration to enable accumulation” (Herod, 2012: 335). Harvey (1982) calls it ‘spatial fix’. A spatial fix is a term used to describe “...capitalism’s insatiable drive to resolve its inner crises tendencies by geographical expansion and geographical restructuring” either due to over accumulation or decline in profits or exhaustion/discovery of raw materials or new commodities (Harvey, 2001: 24). For Jessop (2006: 146) it refers to many different forms of spatial organization and geographical expansion that serve to manage, at least for some time, crisis-tendencies inherent in accumulation.” Globalization is an example of capital’s never-ending search for a spatial fix to resolve its crisis through accumulation because a fix is not permanent but temporary (Harvey, 2001: 25). In developing a spatial fix, time must be reduced, for instance, for labour to travel from place of residence to workplace to ensure maximum productivity. Therefore, capital or companies develop strategies in order to realise time-space compression for instance towns or dormitories, housing for workers, developing transport infrastructure like roads, railway lines and communication networks (Herod, 2001; 2012). Furthermore, once a spatial fix is established, it also attracts other goods and services to meet primary and secondary needs of both capital and labour like financial goods and service industries. In other words, for ‘surplus value and to be realised, landscapes of consumption i.e. malls, banks, transport networks must be constructed in certain ways to realise profit and accumulation’ (Herod, 2012: 335 see also Herod, 2017).

The meaning of fixing has contradictions, and this speaks to geographical dynamics of capitalism and crisis tendencies that encompass the process for instance, fix (secure) infrastructure among other things that enable production to take place “...versus motion and mobility of capital”

¹⁵Credit goes to David C. Jordhus-Lier for suggesting and offering insight on how to operationalise David Harvey’s absolute, relative and relational space to sanitisation of absolute space, time-space compression of relative space and social inclusion/exclusion of relational space based on empirical evidence used in this study.

(Harvey, 2001: 25). This then illuminates contradictions of capital where capital ‘constructs fixed space (landscape) at a particular point in history and destroy it to make way for a new spatial fix (accumulation in new spaces and territories)’ through say deindustrialisation of one region and reindustrialization of another in a different geographical location (Harvey, 2001: 25). However, though geography of capitalism is constructed in particular ways, the presence of “...different groups of social actors...” with different interests (biological and reproduction) creates varying “spatial considerations and struggles over geography...” with capital’s “...political and economic praxis” (Herod, 2012: 336-337). Thus, economic landscapes interact with social landscapes generating social relations and all these processes do have some ‘historical momentum’.

In light of the above, a spatial fix as an analytic concept helps show how geography of capitalism is produced and how it is contested between capital and labour as they execute their economic and political praxis. In this study, a spatial fix is deployed and used to show how Kolomela and Zibulo get established and constructed in two different geographical locations due to the discovery of mineral resources. The tow mines then develop economic landscapes in terms of production, transport, communication infrastructure for accumulation to take place. They also create different social landscapes to ensure that consumption takes place resulting in new cash circulation flows. The workings of capital on space do not go unchallenged by social actors as they are space based. The ability to control space is a source of power thus if space and society are constitutive in which social actors are part of that space then so is space and power (Brookes, 2013: 185). Importantly, Harvey’s concept of ‘spatial fix’ informs the core debates of labour geography as it is argued that workers deploy different spatial strategies to influence and shape landscapes in ways that benefit them (Herod, 2001; Herod, Rainnie and McGrath-Champ, 2007: 254). In this study, I explore how the presence of mines and their activities influence social actors including worker actions (through different tactics and strategies) contest and shape economic and social landscapes at Kolomela in Postmasburg and Zibulo in Ogies.

3.2.3 Sanitised spaces: sanitised workplace orders and sanitised residential spaces

Sanitised/sanitized spaces is a term that has been used by scholarship in geography (especially urban studies), cultural theory (Swanson, 2007; Radhakrishnan, 2013) and tourism and consumption (Taylor and Toohey, 2011). Sanitised spaces have been discussed to show how

‘mallings’ and design of spaces of consumption ensure exposure, familiarity and ease in guiding tourists and shoppers to merchandise, exhibits and services (Westwood, 2006: 282 see also Chatterton and Hollands, 2002). Taylor and Toohey (2011: 3271) discuss sanitised space in terms of controlling sports venues in terms of risk management in terms of accepted norms and values expected from patrons. In the same vein, Cook and Whowell (2011) argue that visible policing as depicted by removal of beggars on the streets, destruction of overnight accommodation among other things in New Delhi during the 2010 Commonwealth games was meant to make ‘troubling population invisible and visible in public spaces. It meant “inequality and injustice were wrapped up in public policing...fixing, sanitising and managing public spaces by councils, businesses and growth coalitions (Cook and Whowell, 2011). Furthermore, Swanson (2007: 708) has shown how rejuvenation projects “...sanitise streets of urban undesirables of indigenous descent in Ecuador through hygienic racism creating desirable aesthetic image of that revive urban centres and attract international capital.” What is evident in these instances is the role played by neoliberal capitalism expressed through hegemonic gentrification plays in the sanitisation of urban spaces (Sanders-McDonagh, Peyrefitte and Ryalls, 2016 see also Radhakrishnan, 2013 on sanitisation through censorship of profane music). This confirms arguments raised by Stavrides (2015: 9) that “urban order is the impossible limit towards which practices of spatial classification and hierarchisation tend to ensure that the city produces those spatial relations that are necessary for capitalism’s reproduction.” Ordering mechanisms tame complicated and highly differentiated urban habitat and act as tools for social normalisation (Stavrides, 2015).

Considering the above, *sanitised spaces* denotes a process of elimination of undesirable, dirty, old and decaying elements and creation of familiar, desirable structures and visuals on the landscapes to establish and maintain a particular image. It also suggests removal, elimination and marginalisation of the undesirables and unclean on the physical landscape hence the term ‘sanitisation of absolute space.’ Physical structures can be destroyed and remade (in the case of urban renewal), construct new landscapes without previous informal structures or establish new structures like technologies and new designs. I therefore, appropriate the concept of *sanitised space* from field work data themes using grounded theory data analysis and draw on its original usage from various scholarly fields to depict how (1) mining workplaces created by new mines have been reconfigured in ways that allow mechanisation and implementation of new technologies increasing managerial monitoring and control while at the same time labour power responds accordingly;

increase production output; improve health and safety levels. I term this *sanitised workplace order*. This facilitates establishment of spatial and social relations, which get modified, contested and reconfigured in and outside the workplace. Beyond the workplace, (2) how mining capital has created new social landscapes expressed through housing regime in Postmasburg in dealing with the ills of apartheid (lack of dignified and quality accommodation for mineworkers). This housing regime which that I categorise as *sanitised residential space* depicts attempts to eliminate elements associated with informality in South African townships like vegetable stalls, spaza shops, street saloons. Furthermore, it demonstrates attempts to create modern family-oriented mineworker housing regime that shifts away from colonial and apartheid inspired substandard single sex barracks, compounds and hostels. This feeds into the spatial classification and hierarchisation of urban habitat creating socio-spatial relations necessary for reproduction of capitalism. Sanitised space thus, shows how workforce consent is achieved in contrast with oppressive and conflictual apartheid industrial relations in the workplace. Given the socio-spatial context capital operates, regimes to manufacture consent and control are contested and negotiated in the workplaces and in the immediate mining host communities. I provide further elaboration of these concepts below and more broadly in the finding's chapters.

Drawing from emergent themes from empirical data and from the above-cited academic traditions cited above, *sanitised workplace order* is deployed as an analytic concept in examining new mines in a democratic South Africa. Sanitised workplace order demonstrates foundation on the attempts to modernise and professionalize labour relations at Kolomela and Zibulo mines. The sanitised workplace order at these two greenfield mines is characterised by the following tenets; reformed recruitment strategies, new technologies and mechanisation (control and resistance), collaborative and corporate social development, education and training, contested, negotiated and fluid workplace relations and construction and financing of living and travel arrangements. Sanitised workplace order also depicts an ongoing effort to deracialise South Africa's mining regimes. The changes in the two workplaces as partly informed by the need to produce a mine landscape that speaks to ideals of a democratic South Africa, global capital and enhanced workplace control. The outcome of these configurations is characterised by paradoxes. These tenets are elaborated further in the findings chapter. Importantly, sanitised space including sanitised workplace order and sanitised residential space provide lenses to examine the relations between capital and social actors in the context of this comparative study. Also, the deployment of these geographic inspired concept

provides an opportunity to ‘zoom and out of the workplace and into the broader community to examine the relations between capital and community relations’ in a democratic era (Jordhus-Lier, Underthun and Zampoukos, 2018).

In addition to the previous section, *sanitised residential space* is an outcome of sanitised workplace order and is deployed to describe the spatial design and configuration of Kolomela mines houses and how they are interpreted by Postmasburg residents as exclusionary spaces they do not identify with due to lack of urban informal residential features and integration. Physically, the three housing schemes are located at the edge of three different suburbs with easy entrance and exit; epitomise modern housing typical for South African middle-class suburb landscape and exclusively occupied by Kolomela employees. The housing regime is in line with regulatory requirements for provision of decent and affordable housing for workers employed by mining companies. However, the scheme falls short on the aspect of promotion of home ownership because the houses are owned by Kolomela mines. *Sanitised residential spaces* on level represent a benchmark of the type of housing mining companies must provide for its workforce while on the other level depict a paradox of unintended outcomes of the project itself. Mineworkers prefer low maintenance cost housing and also security of ownership tenure while communities feel excluded from the sanitised absolute spaces due to absence of features that inform urban informality and hence draw identity and belonging and lack of integration.

My position slightly differs with that of Bezuidenhout and Buhlungu’s (2015) use of enclave to describe a platinum town Rustenburg’s post-apartheid social order. They argue that enclaves in Rustenburg are constructed on apartheid categories like “...suburb; compound, township and homeland and express themselves in form of security villages, converted compounds and hostels with access control and informal settlements with distinctive gender, linguistic and class formations...” (Bezuidenhout and Buhlungu, 2015: 526). The proliferation of informal settlements made up of mokhukhu and often close to nearby mining shafts depict ‘spaces of subalterns’ and ‘suburbs with high walls as spaces of the elite’ (Chinguno, 2015: 585). These informal settlements are characterised by lack of or limited basic services like water and electricity; paved or tarred streets; formal planning and squalid dirty conditions but are importantly new spaces of worker power and resistance (Chinguno, 2015: 585). This was demonstrated during the platinum wave strikes between 2012 and 2014. Bezuidenhout and Buhlungu (2015) make valid assessments of

the emerging post-apartheid order through enclaves in Rustenburg, I prefer to adopt sanitised residential space because it suggests cleansing from dirt or undesirable elements and not physically insulated from the outside world by high walls and secure access control as in the case of Rustenburg's gated communities or informal settlements by vigilantes.

3.2.4 Place

The concept of place is surrounded with fierce debate and contestation both in politics and academics¹⁶ (Massey, 1994). However, I do not seek to engage with debates on place and consequent periodization but rather provide different meanings of place provided by different scholars. Place refers to “where things happen” (Herod, 2012: 339). Castree (2010: 463) states that a place is a material sphere within which workers' everyday lives unfold. For Agnew (1987) place (s) incorporates three different but related aspects of locality and these include: “place as a *location* (a specific or distinct point on the earth's surface); place as a *locale* (i.e. physical arena in which everyday life is lived) and place as a locus of identity (where localities serve as the focus of personal and collective loyalty, affect and commitment” (Herod, 2012: 339; Agnew, 1987). Such places in which workers' find themselves operating serve as a ‘physical milieu’ in which every day is socially produced and reproduced through intrinsic and extrinsic forces and form emotional attachment (Castree, 2010; Herod, 2012). Capital and workers topophilia (love of place) can influence their feelings on particular places hence promoting or defending them (Herod, 2012) for instance, a mining company may ‘fall in love’ with a locality that has strong traditional authority over workers and this will help in terms of labour control and hence less violence and militancy. Such attachments for workers can influence them to take decisions that advance their interests either by going in tandem with capitalism interests or in opposition to the former. As such, in understanding place, issues of relationships workers develop either through work or kinship or familial ties (Castree, 2010) need to be taken seriously as they tend to have a huge bearing on the decisions they take. A place is therefore, “multifaceted and its characteristics are derived from its internal characteristics, histories and its relationship with other places far or near” (Herod, 2012: 340).

¹⁶Place as a term, concept etc. is fiercely contested as scholars use it from multiple perspectives and periods and I am aware of this. For more on this see also Agnew, J.A & Duncan, J.S. (Eds) 1989. *The Power of Place: bringing together geographical and sociological imaginations*. Boston: Unwin Hyman etc.

Though the conceptualisation of place may show that it is unique, ‘such uniqueness can be traced to processes like the circulation of capital’, “... place’s location in relation to broader division of labour and articulation of class conflicts” (Herod, 2012: 340; Massey, 1995; Harvey, 2000). Therefore, a place is continuously reconstituted by social relations in the place it is located through a “... a melange of meanings, values and relationships...ongoing social practices (which) construct, sustain and transform the context in which economic, social and political life is produced and reproduced on a daily basis...” (Herod, 2012: 340 citing Hudson, 2001). Labour and capital become embedded in local employment relations, investment (plant through capital and mortgages for workers), kinship ties and market relationships hence becoming immobile and fixed in a particular place (Storper and Walker, 1989). This analytic concept of place is of importance to understand the spatiality of capitalism and how it interacts with other social actors as they make their own geographies intentionally and unintentionally because social actors are embedded in place (Herod, 2012) and can contest through resistance or compliance to changes on a landscape by capital. In other words, the understanding of workers’ meaning, and experiences of a workplace and residence is vital to grasp the social relations that exist between for instance mining companies and social actors (workers or community members) and among social actors themselves.

3.2.5 Worker Agency

Castree (2007:858) contends that the notion of worker agency within labour geography is “...undertheorized and underspecified in most labour geographers’ analyses of it. For all the talk by leading labour geographers that worker visions and actions are necessarily geographical, their failure to be systematic about forms of agency and how geography permits or proscribe them must be counted as strategic weakness” (Castree, 2007:858). Such a weakness has made ‘agency’ a catch for all term or phrase (Castree, 2010). Consequently, the implications of such a deficiency precipitate the failure to distinguish different types of agency and “... their enabling and or dis-embedding conditions...” (Castree, 2010:467). This is tantamount to an analysis that lacks sensible arguments about labour strategy in executing their vision as workers. Furthermore, more recent review on labour geography points toward re-embedded notion of agency (Coe, 2013; Coe and Jordhus-Lier, 2011). Hastings and MacKinnon (2017: 104) have shown how ‘subtle and pervasive worker agency through workers learned behaviours and identities affect recruitment patterns and modes of conduct at call centres in Glasgow.’ In other words, control and work experience

transpires through a dialectical process between management and workers within workplaces (Hastings and MacKinnon, 2017). Also, Kiil and Knutsen (2016) using the concept of agency by exit, have shown how Swedish nurses using ‘Not below 24 000’ have linked collective agency with structural power challenging structures of power for higher remuneration for graduate nurses and improved working conditions. They pay close examination to individual agency and how individual actions coalesce into collective agency and wage resistance to Swedish government as a regulator and an employer (see also Rogaly, 2009 on agency of unorganised temporary migrant workers; Gialis and Herod, 2014; Hauge and Folds, 2016).

Given the above, an exploration on what ‘agency’ is its types and what it entails is imperative. Furthermore, analysis of power in relationship to agency is central to an understanding of power and how it operates. This helps to theorize agency, linking it with the theory of power and ascertain whether any worker actions are successful or not by juxtaposing theory of power and agency i.e. ‘structural, associational, logistical and moral/symbolic power’ (Wright, 2000; Webster, Lambert and Bezuidenhout, 2008; Lambert, Webster and Bezuidenhout, 2012) and of space. Coe and Jodhuis-Lier (2011:2) drawing from Herod (2001a) see worker agency as “... the ability of workers to create their own economic geographies through pursuing their own spatial fixes and scalar strategies.” Worker agency can be seen as any action that is calculated or not calculated by workers. Bezuidenhout and Buhlungu (2010:257) summarise it as being “... informal or formal, individual or collective, spontaneous or goal directed, sporadic or sustained, and can operate at different scales.”

Knutsen, Endresen and Bergene (2010: 6) see agency as “...human action that makes a difference to social outcomes...” aided by ‘actors’ power they possess that enables them to act independently in wake of structural constraints (see also Agar and Bohn, 2018 on grassroots agency).’ It has also been shown that agency can be collective or individual (Coe and Jodhuis-Lier, 2011). Much attention has been paid to collective agency in literature which refers to efforts by groups or larger organisations like labour unions in waging struggles against capital to improve living and working conditions in the workplace and demand for better wages. On the other hand, individual agency entails conscious effort by a worker to realise his/her own interests within an economic and or social landscape and thus there calls for an increased analysis on individual agency (Mitchell, 2008, cited by Castree, 2010, Coe and Jodhuis-Lier, 2011). This is in the light of individual worker

actions to realize their own for reproduction goals and most recently are the strategies used by migrant labourers to negotiate strict labour laws and gain access to employment in foreign countries (Coe and Jodhuis-Lier, 2011). This to some extent is depicted by migrant workers in the South African hotel and catering industry who are not unionized but work for long hours in hotels and restaurants earning meagre wages (Vettori, 2017 see also Rogaly, 2009).

Considering the under-theorization and under-specification of agency (Castree, 2010), to understand agency, one must by look at agency and its types and forms; what counts as agency and linking such to power (Kiil and Knutsen, 2016; Brookes, 2013; Mashayamombe, 2012; 2014). In other words, a theory of power must be put in place when exploring agency (types and forms) and to do such, I draw from the works of Lambert et al. (2012) Silver (2003), Wright (2000) on associational, structural, logistical, symbolic/moral power (Mashayamombe, 2012; 2014; Brookes, 2013 associational is classified as institutional power). Brookes (2013: 181) writing on transnational labour alliances demonstrates how workers utilise the power they possess to ‘physically disrupt employer’s operations, mobilise non-labour stakeholders that an employer has to engage with and hold employers accountable legal or regulatory institutions to articulate their interests.’ In doing this she shows how workers embeddedness in the global production networks, national bodies and social networks empowers them to challenge global capitalism (see also Kiil and Knutsen, 2016). In the same vein, this study shows how different social actors including unionised workers and community members draw from different sources of power to articulate their own vision and interest.

Worker agency refers to action by labour (individual or collective) to articulate demands, express frustration, as resistance or unhappiness about an issue in or outside the workplace drawing from individual or combination of different sources of power (associational/institutional, logistical, structural ad moral) that plays out spatially. The outcomes of such actions are context specific where sometimes it is about acting whose outcomes can bet positive and negative. Thus, “the interplay between agents and structures can be understood as a never-ending series of cycles consisting of structural conditions, social interaction and structural development” because social actors possess power (Knutsen, et al., 2010: 6).In addressing the criticism that the state is weakly thematised and theorised in labour geography and yet it is an important player (regulator) (Castree, 2010: 467), I focus on the state i.e. through local government in lieu with legislative and policy

frameworks that regulate and inform mineral extraction, relations between mining operations and labour and local communities and how this influences all actors' activities. Such an approach in analysing worker agency can help account for what counts as agency, the sources of power, spatial strategies deployed and evaluate worker actions in terms of outcomes.

3.2.6 Belonging and politics of belonging

The questions around belonging and the actual determination of boundaries depicts difficult conditions of our times and often result in the construction of us and them (stranger) and the process continuously gets modified and contested (Yuval-Davis (2011:1-2). This is mainly driven by growing various identities, inequality and economic uncertainty at a local and global scale. Yuval-Davis (2011: 10) makes a distinction between belonging and politics of belonging. "Belonging is about emotional attachment about feeling at home" (Yuval-Davis, 2011: 10) and it is an ongoing project that gives hope about a safe future. Belonging tends to be naturalised and becomes part of everyday practices. It becomes articulated formally structured and politicised only when it is threatened in some ways. "Attitudes and ideologies inform where and how identity and categorical boundaries are being/should be drawn in more or less permeable ways, as different ideological and perspectives and discourses construct them as more or less inclusive" (Yuval-Davis, 2011: 18). These contestations give rise for the need to move from belonging to politics of belonging.

"Politics of belonging involves not only construction of boundaries but also the inclusion or exclusion of particular people, social categories and groupings within these boundaries by those who have the power to do this" (Yuval-Davis, 2011: 18). It is about exercising power through various hegemonic political projects of belonging in determining who is in and out and speaks to Weberian debate on closure and exclusion (see Parkin, 2002; 1979). Politics of belonging project reflects symbolic power orders permeating in different societies and such can be contested and resisted by different agents. However, sometimes when symbolic power does not yield desired results it may culminate into use of different forms of violence as a sign of frustration. Adrian Favell (1999) comments that politics of belonging is dirty work of boundary maintenance that seeks to maintain benefits within a particular group that meets set criterion. Elsewhere, Silver (2003) uses the concept of boundary drawing as a way to determine who is 'cut in' and 'cut out' when compromises have to be made over partial de-commodification of labour (Bezuidenhout and

Webster, 2010: 368). For Silver (2003), she provides three scenarios under which boundary drawing exercise manifests itself; labour segmentation, question of citizenship and creation of exclusionary identities based on class or non-class, identities like ‘locals and non-locals’ and used as a basis for access or denial to certain rights (Bezuidenhout and Webster, 2010: 368). It is the last scenario that speaks to Yuval-Davis (2011) articulation of politics of belonging. “Of interest to Yuval-Davis (2011: 20) are the politics of belonging that involves boundaries of political community of belonging that often than not seek to physically and symbolically separate population into “us” and “them”. The whole process involves maintenance, reproduction of boundaries of the community of belonging through hegemonic symbolic powers and also contestations and resistance of such projects by other political agents (Yuval-Davis, 2011: 20). In light of the above, these particular projects can result in intended and unintended outcomes that can generate positive or negative feelings in the society. Therefore, I utilise belonging and politics of belonging as analytic tools to understand relations within mining communities in this study.

3.3 Capital and the making of landscapes

The above explanations on concepts used by labour geographers particularly radical geographers provide a frame that can be built on to help one understand the working of capital and its interaction with different social actors in making geography of capitalism. In other words, the abovementioned concepts assist to “... explore, how both capital and labour shape and produce space as part of their political and economic behaviour...” and “...how their actions are influenced by the way economic landscapes are made, how they make their own geographies” and at times not under their own choices (Herod, 2012: 342). So, for instance, the establishment of mines in South Africa i.e. discovery of Diamonds in Kimberley (1871), Gold in Barberton (1884), Witwatersrand (1887) and Coal in the Transvaal (1887) (Allen, 1992) completely reconfigured local geographies as capital sought to accumulate profit. New economic structures like manufacturing plants, railway lines, roads, houses and factories were built and drew black migrant cheap labour to provide manpower. Traditional life activities were interrupted as able-bodied young and old men got incorporated into the cash and wage economy through proletarianization process. Some joined mines voluntarily (to earn wages) while others were forced for different reasons and the state and capital used various coercive methods on black Africans. As such, this short synopsis shows that for capital to realise its needs or interest, space has to be organised in a particular way and this may involve disruptions,

incorporation and coercion. On the other hand, social actors on the South African mining landscape, that interact with capital can make their own geographies (Herod, 2012) by earning meagre wages to buy guns and defend themselves, cattle or build ‘umuzi’ (Allen, 1992; Moodie, 1994).

3.4 Conclusion

Based on the above, it can be argued that the function and success of mines from the discovery of minerals in South Africa through apartheid period witnessed different nodes of control in motion to control Black African workers to realise production targets and profits. In other words, from a labour geography standpoint, the organisation of space in particular ways i.e. seizure of farming land from Black South Africans, establishment of homelands, compounds and use of legislation and migrant labour system enabled mines to accumulate capital and surplus value (Herod, 2001; 2012). This was pervasive during the colonial through to the apartheid periods. However, with the attainment of democracy, new mines have emerged in a different context in terms of legislation, workforce (age, gender, and education), technology, policy and integrated global markets. The painful legacy of the past still haunts the mining industry as evidenced in the gold and platinum mines (Alexander et al, 2013; Benya, 2013; Chinguno, 2013a). Efforts have been made to improve working and living conditions of mineworkers for instance the conversion of compounds and hostels into family units (Bezuidenhout and Buhlungu, 2010), health and safety reforms through legislation and policy and transformation in the old and new mines. However, of interest in this study is new mines; how capital (mining companies) and labour (workers and communities) create economic and social landscapes and respond to each other. Put differently, what ways are mining companies organising, controlling space and labour and community response. This study is more interested on the construction of geographic landscapes (economic and social) by capital and how social actors respond (contest, negotiate, comply, reconfigure) to such in a democratic South Africa and the contradictions that have emerged.

The next chapter presents the research methodology that was adopted for the study.

Chapter 4: Methodology

4.1. Introduction to Mixed Methods

The methodology employed in this study was informed by the main research question that sought to understand the forms of control and contestations between capital and labour at Kolomela and Zibulo as cases of new mines in a democratic South Africa. The mixed methods approach was deployed. Given the multifaceted nature of the main research questions and its subsequent sub-questions warranted the use of multiple methods in order to collect/extract, analyse and provide conclusions on a knowledge concerning a social phenomenon. The study sought to investigate and explore how new mines in South Africa actively control space (workplace and worker residences), labour and other social actors directly and indirectly and surrounding communities and how they respond. Given the fact that the study was interested in different actors (mine, labour, community and local authorities) perceptions, attitudes and experiences in the workplace, with labour, management, trade unions and the community, more than one method of enquiry was required in order for the researcher to explore ‘what exists’ and how this knowledge was to be acquired (Neuman, 2011). In other words, to measure perceptions and attitudes called for deployment of a survey while social actors lived experiences and their relationship to space would be captured through ethnography and official documents, an important source to that which is not mentioned or seen.

It is the view of the researcher that the mixed method approach availed an opportunity to unravel the constellation of capital (mines) and labour (workers and other social actors) and how such a nexus is playing out on spaces surrounding and occupied by new mines in post-apartheid South Africa. Therefore, the mixed methods research approach was deemed appropriate for the study to explore post-colonial and post-apartheid spatial strategies of new mines in South Africa, how social actors respond to that effect and modify or create their own geographies. An understanding of the relationship between capital (mines) and labour in terms of control and resistance at the selected mines can be central planning for resilience on mining and sustainability.

The mixed method research approach embraces the use of different research strategies from both quantitative and qualitative research approaches in social enquiry (Bryman, 2012; McMillan and

Schumacher, 2014). It is further stated that mixed methods embrace the use of more than one method or source of data in studying social phenomena and should be “...mutually illuminating” (Bryman, 2012:628). In doing so, it is argued that mixed method research, when done properly, is likely to produce credible, reliable and rich findings. Through different techniques such as linking research rationale and questions and methods used in the study, the approach has greater chances of generating convincing findings. Through triangulation, which is the use of different methods in a single study and cross-checking findings from both quantitative and qualitative data, it compensates the weakness of each method thus increasing credibility of the study (Bryman, 2012; McMillan and Schumacher, 2014).

However, despite the increased embracing of mixed method research in social enquiry, it has been met with resistance in some quarters for example in the works of Hughes (1990). Some of the criticisms against the use of mixed method research in social inquiry are that the use of quantitative and qualitative methods is not just about a procedure but of epistemological and ontological logic hence use of both methods is undesirable and not feasible due to differences in strategy (Bryman, 2012; Smith, 1983; Smith and Heshusius, 1986). Also, mixed methods are not appropriate due to the fact that ‘paradigms are incommensurable’ due to different epistemological assumptions, values, and methods are inextricably intertwined and are incompatible between the paradigms (Guba, 1985) and Morgan (1998) in Bryman (2012: 629) following Kuhn (1970). In other words, it is argued that integration of methods is impossible due to different paradigms which to a larger extent have not been proven (Bryman, 2012). Despite these debates, this study embraced mixed method research in order to integrate methods as they overlapped and complemented each other. Through triangulation (Interviews - survey and in-depth, ethnography and documents), completeness and different processes were used to answer the aforementioned research questions within the frame of spatial analysis of new mines in post-colonial/apartheid South Africa. This study was underpinned by Burawoy’s (1998) Extended Case Method embedded within Critical Sociology as a basis for scientific social enquiry. It should be noted that mixed methods research is in practice, ethnographic, as researchers make use of statistics data (records, numbers), observations and interviews.

4.2. Extended Case Method

Burawoy (1998:5) states that the ‘Extended Case Method’ applies reflexive science to ethnography to extract general from the unique, to move from the ‘micro to the macro’ connecting the past and present and gazing on the future. It is an ethnographic approach that encourages spending more time in the field connecting the observer with the participant through application of various methods that include participant observation, documents and everyday interactions (interviews). In this instance, I spent three months at Kolomela and Zibulo mines in the workplace and immediate communities of Postmasburg and Ogies respectively. What is central to the ‘Extended Case Method’ (ECM) as mentioned above is the notion of reflexivity. Reflexivity is ‘the self-monitoring behaviour’, where an individual is aware of one’s preconceptions which can lead to ‘uncertainty in human action’ (Burawoy, 2009, citing Winch, 1958) and at the same time not being engulfed by experiences and conditions of social actors and this enables the researcher to arrive conclusions based on critical analysis of findings. The method calls for duality of sciences, that is positive and reflexive science coexisting and interdependent upon each other (Burawoy, 2009). In relation to this, the survey method was utilised in this study in order to capture social actors’ perceptions and attitudes in and around the workplace.

Ethnography enabled the researcher to capture the lived experiences of workers and the community. Ethnography combined with use of official and unofficial documents helped the researcher to “... inductively observe, interpret, and reflect on what...” social actors “...were saying and doing in specific social contexts (workplace and in communities) while the researcher simultaneously reflected on her/his experiences and interpretations [with emphasis].” (Burawoy, 2009: 39). Therefore, “where positive science proposes to insulate subject from object, reflexive science elevates dialogue as its defining principle and inter-subjectivity between participant and observer as its premise (Burawoy, 2009:39).

In addition to the above, reflexive science as portrayed by Burawoy (2009) sets out a number of principles that undergird the process. The fact that an interview removes a participant from one time and space location to that of the interviewer, intervention from the interviewer is imperative because in moments of stress and conflict, much information is revealed by participants (Burawoy, 2009). Thus, rather than being worried of high reactivity, reflexive science makes use of

intervention to its advantage. Furthermore, reflexive science calls for an ‘observer to unpack situational experiences by moving with the participants through their space and time’ (Burawoy, 2009:40). This enabled the researcher to grasp situational knowledge that was multiple for instance and was aggregated. This for instance, would require different ‘readings’ of a single case and aggregate them into a social process (Burawoy, 2009: 41, with own emphasis). This was particularly helpful given the fact the study was a comparison between two mines and reflections by the researcher were undertaken at different intervals, spaces, instances and draw similarities and differences. Reflexive science requires a researcher to take account of the instability of the external world within which interviews take place which calls for a position that takes cognisance of how the interaction of external field forces shape and are reshaped by the everyday world (Burawoy, 2009: 42). Given the above, reflexive science in ‘Extended Case Method’ is rooted on context and situation, seeks to reduce power relations and embraces triangulation (Burawoy, 2009). Premised on the above, Extended Case Method (ethnography) was employed at the selected two South African mines in an attempt to explore, identify and understand spatial orders if any and how they are in operation on mines in terms of control of space, labour and how social actors respond to such on both social and economic landscapes. The researcher spent three months at each mine shadowing different mineworkers to understand and experience their everyday work and home life. To achieve this, triangulation of different research methods i.e. survey, interviews and observation and documents (both official and non-official) were used to elicit and collect data.

4.3. Access into research sites

This comparative study is based on two new mines, Kolomela Iron Ore mine in the Northern Cape and Zibulo Colliery in Mpumalanga, both in South Africa. In the embryonic stages of this study, the researcher wanted to compare four new mines (diamonds, coal, iron ore and platinum) but due to access constraints narrowed it down to two mining operations. Access to these two mines was a challenge, as raised by social sciences researchers (Leedy and Ormrod, 2014; May 2011; Bryman, 2012; Creswell, 2007). Leedy and Ormrod (2014: 145) state that, “site-based fieldwork is the sine qua non...of any ethnography,” gaining access to a research site is key to providing the researcher with accessible and convenient situations for observations. Mining companies are reluctant to grant researchers into their operations for a number of reasons that include, safety concerns, disruption of production, suspicions of instigating mineworkers and general spying. To

be granted access, the research objectives have to be of interest and beneficial to the mining companies. Fortunately, access to the two mines was facilitated through the Mining Resilience Research Institute at the University of Pretoria. Permission to use Kolomela as a research site was granted through the General Manager. Previous commissioned studies that my Supervisor had conducted for the mine established an amicable working relationship that led the mine to welcome me to conduct my study. The process took long as the turbulence in the mining sector resulted in personnel changing positions due to restructuring driven by commodity market volatility. After being granted an access letter at Kolomela, there was a delay of six months as my contact/host person had left the mine and could not immediately locate a new person. This had adverse impact on my data collection timelines. Data collection at Kolomela mines should have started in February 2016 but only commenced in September 2016. These setbacks demonstrate the unpredictability of fieldwork and the complicated nature of gaining access into mining operations in general.

In light of the above, May (2011) comments that gaining access at one level does not guarantee access at another level because there are different gatekeepers with vested interests. This was the case at Zibulo and Kolomela mines. Upon my arrival at Zibulo colliery having been granted access at the head office under the auspices of the Head for Health, Safety and Sustainability, I was received by the General Manager and the top management team. Upon completion of introductions, I was then assigned to a Section Engineer and a Business Partner of Human Resources (more like the second in command of the HR) who further introduced me to National Union of Mineworkers Zibulo branch officials (who were happy to have me on the mine) and production related middle-management officials. I encountered uneasiness and lack of cooperation at those levels on surface and in some underground sections. This resonates with May's (2011) observation of the hierarchy of gate-keepers in organisations. I was perceived as a spy from the head office while others deemed me as an intruder. Through patience, focus and spending more time with the production/mining workforce, I was accepted, though it varied from section to section underground and with foremen. However, I am grateful to Mr A Dlamini, a senior Shift Boss's intervention as he ensured that I had unlimited access to sections underground as long as I did not disrupt production. Furthermore, the Technical Services Division (Survey, Geology, Rock engineering and Ventilation (VOHE)), warmly welcomed me in their workstations and provided useful tips on how to develop relations with the mineworkers underground.

I encountered similar experiences at Kolomela, where the General Manager granted me full access, yet some middle-managers saw it differently, hence at times this caused delays and frustrations because there was a time limit set. I encountered gatekeepers at different levels. For instance, there was reluctance to share employee data on remuneration at both mines. I could not access information on the exact place of origin of the mineworkers as I sought to scope the question of migrant labour because a senior manager withheld the information even though I had signed a confidentiality form. I relied on data that had been sieved and therefore slightly affecting my case on migrant labour. These few instances reveal how access and gatekeeping tendencies is a tricky enterprise that requires patience and level-headedness. Despite the challenges, I was able to conduct interviews, make observations and access available official documents at the two mines that were visited.

4.4. Interviews

4.4.1. Survey interviews

In order to answer the research questions on workers and management (mine) perceptions and attitudes toward each other in and around the workplace and surrounding places, the survey interviews were used to collect general data on targeted population in a systematic way. This was achieved through questionnaires. Questionnaires were administered to selected employees from the two mines under study; permanent employees, officials and recognized union leaders. Groves, Fowler, Couper, Lepkowski, Singer and Tourengan (2009: 2) define a survey as a “systematic method of gathering information from (a sample) of entities for the purposes of constructing quantitative descriptors of the attributes of the population of which the entities are members” (see Vogt and Johnson, 2011 and Rea and Parker, 2005). Hox, De Leeuw and Dillman (2008: 2) see a survey as “...a research strategy in which quantitative information is systematically collected from a relatively large sample taken from a population.” The two definitions capture the point of the method being systematic and at the same time consisting of a sample drawn from a bigger population.

Personal interviews through questionnaires were administered to selected respondents to elicit responses on a set of questions in a systematic way that generated quantitative data. The

questionnaire provided conditions to measure responses of participants in systematic and controlled way from the general i.e. biographical questions to more specific issues like perceptions and attitudes to work, management, trade unions and social labour issues through a questionnaire. May (2011: 97) comments that surveys can help remove researcher bias by ensuring that there is standardization in terms of how a "...questionnaire is designed, administered and analysed." Vogt and Johnson (2011: 316) define a questionnaire as a "self-report data collection instrument including a group of written items or questions to which subjects respond." This instrument was designed in such a way that it covered areas or needs of different respondents at a particular work place (see appendix). Other scholars like Bryman (2012) and Berg (2007) advocate the use of a semi-structured interview schedule that has both pre-coded and open-ended set of questions because it addresses the issue of boredom on the side of respondent. The survey, through use of semi-structured face to face individual interview schedule (May, 2011), was appropriate for this study because of its flexibility and complexity in that, it allow the researcher to administer complex questions and provide clear instructions to the respondents without confusing or intimidating them (Rea and Parker, 2005; Berg, 2007; Bryman, 2012). Also, the fact that a large amount of data focusing on various aspects could be captured across different groups from a bigger population made the survey method appealing. However, it is acknowledged that the survey method has its shortcomings like possibility of interviewer bias, respondents' reluctance to participate, less anonymity and other inbuilt errors from the technical side i.e. sampling methods (Neuman, 2011; Bryman, 2012 and Vogt and Johnson, 2011). Nonetheless, in this study the survey interviews were convenient and a quick tool to scan through various aspects of the two mines and an opening into the mineworkers' world.

4.4.2. Unstructured individual face to face interviews

Given the merits and demerits alluded to above, after the questionnaire had been administered, the data was coded and captured into SPSS data sets, analysed in order to identify emerging issues that were pursued through unstructured individual face to face interviews with selected recognised union leaders, management, community leaders and primary informants. At each mine, I undertook 22 in-depth follow up interviews i.e. 16 from Kolomela mine and six from the community and 12 from Zibulo and three from the community. Purposive which is also known as judgmental sampling is defined by Neuman (2011: 267) as "a non-random sample in which the

researcher uses a wide range of methods to locate all possible cases of a highly specific and difficult to reach population.” The idea of selecting participants from the initial survey interviews was meant to ensure continuity as they were familiar with the questions and the researcher will be further probing based on emerging trends from the survey interview data. Furthermore, the selection criteria for participants besides management and union officials to participate in the follow up in-depth interviews was based on the willingness of the mineworkers/ participants to share information on issues at hand. On community leaders’ i.e. ward councillors, civil society and pastors, their selection to participate was based on community structures and prevailing activities in the host communities. Accessing these community leaders was facilitated by i.e. Community Engagement Superintendent from Zibulo and Public Affairs office of Kolomela mine in Postmasburg. Coincidentally, my interview participants sample included two pastors from Postmasburg and Phola who are actively involved in the civil society activities of their respective communities. In-depth interviews with community members were of greater importance because they enabled the researcher to pose questions around community relationships with the mines, state policy in terms of the environment, employee recruitment, social labour plans and expectations that communities have on mines.

May (2011) describes an individual interview as a one on one interaction between the researcher and the participant being interviewed. This technique enabled the researcher to ask participants to talk of their specific lived experiences (Bernard, 2000) in the workplace i.e. mines with management, conducting the actual tasks, their trade unions and in the community thus allowing them to respond to questions in their own way. Furthermore, this technique provided platforms to probe further questions where clarity lacked and to pose follow up questions from emerging trends from the survey interview data hence stimulating them to reveal more information. In addition to this, given the fact that the study was ethnographic in the workplace shadowing few designated officials from different departments, in-depth interviews afforded the opportunity to get clarity on observed trends and where possible drew links with emerging issues from the survey data. Kumar (2011) notes that one on one individual’s interview enables the researcher to supplement information from that uttered with one observed from non-verbal reactions. Furthermore, one on one interviews offered flexibility to the researcher as the interaction was unstructured however at the same time maintaining focus. May (2011:136) contends that, the open-ended character of

unstructured interviews ‘enable the interviewees to answer questions within their own frame of reference’, that is drawing on meanings and ideas they are familiar with. May (2011) avers that this allows events and relationships to be comprehended from the participants point of view. The interviewees’ responses were captured through a recording device with their permission and were held at the mine or at places determined by the participants.

4.5. Observations

It is not always given that there is either or not correlation between what social actors utter and exhibit for instance in their natural habitats like the workplace or community i.e. homes. Adler and Adler in Denzin and Lincoln (1998:79-80) comment that observation has served as a bedrock source of human knowledge. In social enquiry, observation by a researcher is imperative as it helps solve problems such as meaning, omission, social desirability effect, question threat and gap between stated and actual stated (Bryman, 2012) driven by “theoretical questions on the nature of human action, interaction and society” (Adler and Adler, 1998:80). Thus, through observations, the researcher sought to gain insight to understand communities’ views on the presence of mines within or near their spaces, their expectations and how such can inform their relationships with mines. Furthermore, the researcher sought to observe space (absolute and relative) on how it has been transformed in creating social and economic landscapes and how both social actors i.e. communities, mineworkers and mines relate to such configurations for instance underground or in the mining pits. This is important because at the core of the theoretical argument of this study is the notion that capital (mines) seek to shape and control space and labour while at the same time labour (workers and communities) seek to resist such with either success and failure to realize their biological needs (Herod, 2001). In other words, there is a contestation for control of space by both capital and labour to meet their own needs. There are several observation typologies identified by for instance Gold (1958) in Denzin and Lincoln (1998) and Bryman (2012). Such include, complete participant, participant observation, the observer as participant, complete observer, structured observation and systematic observation just to mention a few. For this study, the researcher assumed the role of a participant observer.

Participant observation involves the researcher becoming “immersed in the daily lives of the people” (Leedy and Ormrod, 2014: 145) and this was achieved through the researcher shadowing different roles in different departments at the two mines for three months. Also, the researcher

spent time in the local communities with mine workers I had established rapport with in the workplace hence becoming a “...careful observer, interviewer and listener”, taking field notes, pictures and recording conversations where necessary (where permission had been granted by the participants) (Leedy and Ormrod, 2014: 145). As a researcher, my role changed from being an ‘outsider into an insider’ hence gained more insight on the individual and groups under study while at the same time not becoming too emotionally attached (May, 2011; Leedy and Ormrod, 2014). Burawoy’s (2009) notion of reflexive science was imperative, where a researcher reflects on his/her preconceived ideas (subjective biases) about social actors or a phenomenon and emerging trends from the participants and ensure a balance without losing critical analysis of the matter at hand. The recorded interviews were analyzed together with documents (field notes, official documents and pictures).

4.6. Documents

May (2011) comments that the use of documents and observation enhances understanding as it allows comparison between the text and the reality. Creswell (2007) points out that when conducting research, official documents and photographs say a lot about the context of a setting that will help a researcher gain more understanding of the phenomena or situation under study. Mines and communities have histories and therefore events that occurred in the past and the present were explored through official documents (in private and public domains) from the selected mines, municipalities, print and digital media among other sources. The researcher was not bound by time and space of the official documents if they were legitimate and spoke to emerging trends and themes under study. However, Bryman, (2012:400) notes that emphasis should be on documents that have not been produced at the request of the researcher, but “... must be out there waiting to be assembled and analyzed.” Marshall and Rossman (1999) note that documents have content that needs to be analyzed and as such this also resonates with May’s (2011:199) opinion that a researcher must, “engage documents in an engaged fashion rather than detached one.” I found the documents I engaged with enlightening and enriching from the two mines.

Bryman (2012) underscores the importance of a researcher to specify the type of documents to be consulted or engaged with in a study. In this study, I consulted both official documents both in private and public domain released by selected mines, community groups and other role players

and unofficial documents i.e. newspaper articles. Webb cited in May (2011) points out that documents are available to be exploited opportunistically by an investigator who is alert. These documents in the form of texts or aesthetics played an important role in helping the researcher understand and answer the research questions that were at hand by augmenting findings from interviews and observations. However, May (2011) points out that despite the rich content of documents as sources of information, they cannot be used solely as they may carry author bias and there is need to understand the context and setting in which they were made. As such, the researcher was aware of the social construction of such documents and wary of subjective bias of the authors of such sources. Furthermore, following Scott (1990), I ensured that documents utilized in this study were credible, representative, and authentic and had meaning.

4.7. Sampling

Two mines from Mpumalanga (coal) and the Northern Cape (iron ore) formed the research sites and were selected since they are relatively new mines i.e. established in 2008. The researcher was familiar with Kolomela mine due to prior research work on the mine in 2012 while there was no prior encounter with Zibulo colliery in Mpumalanga. I administered approximately 186 (113 at Kolomela and 73 at Zibulo) individual questionnaires at the two selected mines. My samples from both mines were drawn from permanent employees directly employed by the two mines under study. This delimitation was important given the fact that mining companies are structured differently, and workforce tends to range from permanent to temporary and in some instances; contractors and sub-contracting. Focus was on the permanent employees and left out contractors and non-permanent employees to avoid potential conflicts and risk derailment of the study.

Neuman (2011) citing Becker comments that sampling is a challenge in any type of research and hence a researcher must pay close attention to it. Kumar (2011:193) defines sampling as “a process of selecting a few (sample) from a bigger group (the sampling population) to become the basis for estimating or predicting the prevalence of an unknown piece of information, situation or outcome regarding the bigger group.” At both mines, the HR department provided me with a complete list of their permanent employees on their payroll. Therefore, the permanent payroll list constituted my sampling population. Sampling is advantageous to the researcher as time and money is saved while on the other hand it is difficult to find out information regarding population’s characteristics of interest (Kumar, 2011). This was different in my case, as the payroll lists had various

characteristics like biographic information (age, gender, education levels), date of employment, Paterson grading, work area and position/title among other things. This was very helpful as I wanted to use stratified sampling to select respondents for the survey interviews.

Stratified sampling is defined by Neuman (2011: 256) as a “...random sample in which the researcher first identifies a set of mutually exclusive categories, divides the sampling frame by categories, and then uses random selection to select cases from each category.” This sampling was preferred because it considers the different proportion of categories within identified sub-populations. So, for instance, historically mines are male-dominated but women have also joined the mines hence have to consider gender proportion, occupational categories, race and age. I factored in these categories to get fair representation. Therefore, the stratified sampling strategy helped to “... guarantee that the sample represents the population with regard to the important strata” (Neuman, 2011: 256). The idea was to draw respondents based on a true gender ratio of each department within the selected mining companies. In addition, a recognised trade union officials and some members from middle-management will partook the survey interviews in preparation for the follow up in-depth interviews.

At the two mines, once I obtained the complete lists, I excluded non-permanent employees, mineworkers’ names and narrowed it down to bargaining category¹⁷. I then drew out my potential respondents. In some instances, the sampling procedure was difficult due to shift systems and some were on annual leave. I would call each potential participant from the workstation each of the mines had given me and sometimes their telephones or mobile cellular phones will ring unanswered. Others would refuse to participate especially at Kolomela mine with specific references to White female officials. This links to the issue that I indicated earlier of mistrust and general attitude toward researchers regarded as outsiders. Refusal to participate in the survey or interview was part and parcel of their rights and I would select the next person until I reached the required sample. Despite the challenges, I was able to personally administer the questionnaires in different places for instance at Zibulo on surface or in a section’s waiting area underground while at Kolomela shift training at the training center and caucus rooms. I did not include labour brokers and outsourced workers because of logistical challenges and the terms and conditions agreed on

¹⁷Bargaining category refers to individuals whose wages are centrally negotiated by the recognised trade union in the workplace through collective bargaining as stipulated in the Labour Relations Act, 1995

when I negotiated access. Had I included outsourced workers in the sample, the outcome of results would have been different given the triangulated nature of employment relations and challenges. This was evident when I was mistakenly assigned to carry out observations in an outsourced department at Kolomela mine. Interactions with employees of colour revealed unhappiness and allegations of racial discrimination. I could not proceed in order not to jeopardize relations and breach of access agreement.

4.8. Data analysis

The survey data i.e. quantitative data was analyzed through Statistical Package for Social Sciences (SPSS), a statistical software to analyze quantitative data. Immediately once the required sample had been achieved at each of the two mines, a coding system was developed. I then entered the responses on the questionnaires into SPSS data set (Neuman, 2011; Bryman, 2012). Upon completion of the data capturing process, I cleaned the data to check for accuracy and missing data. I then ran analysis i.e. descriptive statistics (Neuman, 2011; Bryman, 2012) to construct frequency distributions on individual variables and between different variables to establish patterns and trends from the results. These results from survey data were used to guide follow up individual interviews to further explore the initial findings evolving around the main research questions. When overall data collection was completed, I ran descriptive statistics analysis creating tables and graphs and interpreted them together with interview transcripts, documents and pictures.

Tesch (1990) comments that, "... the prime business of data analysis is to pick out patterns, commonalities, differences and processes from gathered data." Furthermore, Creswell (1994:153) states that 'through data analysis, a researcher aims to gain a new understanding of the situation and process being investigated.' Thus, in a qualitative data analysis, the "...aim is to discover variations, portray shades of meaning and examine complexity" (Rubin & Rubin, 2005:202). Given the above positions and assertions, data analysis involves the breaking down of data by arranging it into manageable forms that will enable the researcher to make sense of the data. This is also confirmed by De Vos, Strydom, Fouche and Delport (2005) comment that, data collection and analysis are an iterative process and have to be integrated to enable coherent interpretation of the data. Drawing from grounded theory data analysis and Walcott's (1994) approach in Leedy and Ormrod (2014) was adopted i.e. description, analysis and interpretation (Charmaz, 2000;

Strauss and Corbin, 1998). Collected data i.e. interviews were verbatim transcribed and made meaning of the data based on observations from the field and documents and developed codes. The codes were paired after identifying patterns and relationships within patterns which then translated into themes from which I derived concepts like sanitised workplace order. The themes that emerged expressed through thick descriptions were in some instances combined with survey results in the process of answering the research questions (Strauss and Corbin, 1998). The process was tedious because I had a large amount of raw data and had to make decisions on what had to be left out and shelved for future use.

4.9. Ethical considerations

This study was ethically approved by the University of Pretoria's Humanities ethics committee. Throughout the research process, especially at the sites of data collection and the writing process, the researcher conducted the processes in an ethical manner. Focus of ethics in research inquiry pertains 'the capacity for ethical enquiry to inform reasons for action in the conduct of social research and to protect participants and integrity of the research' (May, 2011:61). As this study was conducted in one of the spheres of human life, the researcher ensured that it was conducted in a morally acceptable way. Ethics pose dilemmas for researchers as what is written on paper as morally acceptable can create conflict of interest for the researcher in the field as the goal will be to fulfil the demands of the study. As ethical issues arise from our interaction with other people, or other beings and the environment, the scientist must be aware of his/her obligations and responsibilities in conducting the research. Ethics should not favour the researcher or the funders but has to consider the interests and rights of participants and the role of the study in the community (May, 2011).

I was granted access by the two mining companies under study (see appendix) before being granted ethics clearance by the University of Pretoria. At the research sites, I signed confidentiality agreements with Zibulo Colliery and Kolomela mine (see appendix) and will uphold the set conditions. As a researcher, during field work I upheld myself in a morally acceptable way and also adhered to the set rules and regulations of the mining environment for instance medical examinations, induction and paying attention to safety rules. During my field work, I ensured that I did not 'deceive' (De Vaus, 2001) mine management, other gatekeepers and mineworkers. I told

the gatekeepers and other research participants the truth on the nature, purpose and scope of the study. I provided them with an invitation letter (see appendix) that explained and outlined the purpose, scope and nature of the study (May, 2011; Bryman, 2012).

In the process of conducting interviews, I observed the principle of informed consent to the respondents and participants. I would introduce myself, provide them with the consent letter and explained to them the nature and scope of the study and willingly participated. This was to ensure that they agreed to participate and knew what the study was about and could discontinue any time they felt uncomfortable (Mason, 2002; Leedy and Ormrod, 2014; May, 2011).

Furthermore, the principle of confidentiality and anonymity was guaranteed by ensuring that participants' names remained anonymous through the use of pseudonyms on in-depth interviews and no name was taken down during survey interviews. I guaranteed the participants that the study was solely for academic purposes and whatever they said would not be mentioned to the management. Given the fact that the study cut across disciplines i.e. geography, I asked for permission to take pictures and in some instances, permission was denied especially underground. Cameras are classified as contrabands and not allowed underground except for specialised cameras which required a lengthy process. I also ensured that the pictures I took did not reveal the identity of participants (Mason, 2002).

4.10. Reflections from the field

This study was based on two mines (coal and iron ore) and since it was ethnographic, I had to complete pre-employment medical examination and medical exits¹⁸ on two occasions as. Before I entered Zibulo mine to conduct my research, I completed a medical examination/test at the Anglo Coal Highveld Hospital while at Kolomela that happened onsite near the training centre. After passing the medical examination, I then went back to Zibulo and underwent a week-long induction courses at the training centre. The courses that included health and safety, first aid, fire fighting among others. The same process was repeated at Kolomela mine. My experience of induction training is that it is enlightening and necessary for a new person coming into the mining

¹⁸Medical examination and medical exit are legislative requirements by Basic Conditions of Employment Act no 75 of 1997 and Mine Health and Safety Act no 29 of 1996. The medical examination includes; physical, urine, lung function, glucose and HIV & AIDS (upon consent) tests, audio and visual screening, x-ray, height and weight and blood pressure. Similar tests are conducted when completing a medical exit.

environment. Over time and upon informal conversations with miners coming from annual leave and those on monthly shift training in the case of Kolomela, induction training becomes boring. Constant training acts a reminder to mineworkers on the importance of health and safety in mines and their actual jobs, but mining companies need to find innovative ways of making the training process exciting and still remain educative. The training centres still remain hubs of knowledge and constant reminders of the importance of working safely by following safety rules and procedures. Upon completion of the induction training, I was granted employee access cards at both mines¹⁹. I could now access the mine premises on surface anytime but not underground. Mines are highly monitored and controlled due to the huge safety risk equipment and physical geography they pose to human beings. For instance, at Kolomela mine, the main gate uses access control cards for entry and exit and a mineworkers' ticket starts running. To operate for instance a truck or machinery, it requires the operator's access card whose licence to operate it should be valid. Entry into the mining area i.e. open pits, is access controlled and not everyone has except for drivers and first line managers going up the hierarchy of mining operations.

The day I was given my complete Personal Protective Equipment (PPE) at both mining operations was exciting at Zibulo filled with anxiety because I had never been underground and was worried. At Zibulo, I was given two pairs of orange overalls (new employees are given orange overalls, old employees get yellow and contractors green), hard hat, goggles, earplugs, gumboots, safety shoes, two pairs of long warm socks, a harness and two pairs of undergarments long sleeved and pants (looks like pyjamas). I was also allocated a locker in the male general workers change house. I vividly recall the day I went underground. It was around 11am and a Shift-Boss working on the morning shift asked me to accompany him. I put on my complete PPE and we headed to the lamp room. After putting on the lamp battery on my harness on the waist and the lamp on the head, I realised how heavy that battery was. The lamp and battery can last between 8-12 hours. At end of every shift I went underground, my waist would be painful due to the battery weight. It just explains levels of fitness of women and men who work underground. We clocked our cards on the

¹⁹I was recruited as a Researcher at both mines and did not for instance receive training to operate equipment or machinery. Depending with my daily program, if I am underground, I would either move around (in a *bakkie custom made for underground) with a Shift Boss on duty through different sections, if I am stationed in a section, would be under a Miner/Face Boss. At Kolomela, I usually went to different mining areas with Mining Overseers/ Mine Captain, Production Controllers or Foremen depending with the teams I would be working with at particular time. On surface, I was either in offices I had been allocated or moving around different offices and departments conducting survey interviews. A bakkie is an open pick-up truck.

access-controlled turnstiles after security personnel had checked if I had complete PPE and for contraband. After clocking in we went to a smaller cage that carries 12 people. This smaller cage is only operated by authorised personnel usually first line management i.e. Miners, Foremen and going up the production/mining department hierarchy. As the small cage went down, I was nervous as it got dark and fear of fall of ground only to be greeted by bright lights and roads underground. It was a shock to find pick-up trucks and custom made three tonne trucks converted to buses. I lost my sense of direction and was constantly greeted by cold breeze. Underground coal mines are cold as the coal seams intersect with water. Sections are forever inundated with water that mineworkers pump out to the surface. Having driven with different Shift-Bosses to almost all the sections, I realised that underground is a world on its own where mineworkers forget of the potential risks and hazards and get on with their work. The dense network of roads characterised by water ditches and uneven surfaces, to *madala* site²⁰ through panels, coal face and development areas epitomise unique landscapes that miners interact with on a daily basis. Underground coal mines pose a dangerous environment due to potential rock falls, fall of ground or methane explosions and thus mineworkers are forever on high alert.

My experience of the open pits at Kolomela where priceless. From the road networks to the massive hauling trucks and shovels, stepped slopes, dumping sites to spectacular blasting afternoons and the complex plant. It is the world of miners where those who work in the pits are confronted by environmental elements that include wind, torrential rains and something lightning and thunder. Working safely in the mines is a non-negotiable and this learnt from my observations and stories of death, injuries and near misses. It is very easy and yet painful to leave home and never come back again but still these women and men persevere daily burrowing the earth's mineral resources on surface and underground to earn a living.

From the field, I learnt that things do not always go according to plan and must constantly modify the process. I learnt that a researcher must think fast when a plan A fails and switch to plan B and we do not control research sites. It was even more challenging given the fact that I had to collect data at two sites in different geographic sites. I had to grab the opportunity to conduct seemingly thorough process as I was never going to get a second chance to revisit the mines. Data collection

²⁰Madala site a mining that has been mined and disused. Usually unsafe and dark and often cordoned off with red and white tape

at the first site was a learning curve and acted as a guinea pig/trial run. Pitfalls from the first site were avoided at Kolomela mine. I also learnt that no one will like you and just must remain humble and get what you want that is data. I encountered kind and loving General Managers and top management only to be frustrated by some middle-managers who viewed me as a threat to production. I found myself between the hard and soft rock and I could not complain to the top management and harm people's relations. I had to manage different egos until I was granted access to my target research population. It was an ethical dilemma that had to be negotiated delicately. I recall my first week underground in some section where the whole team was conducting belt extension²¹, servicing of machinery and equipment in preparation to start mining and was accused of stopping production by one Foreman (mechanical). I had not stopped production but mineworkers together with a trainee miner had taken interest of the questionnaires. They were done with belt extension and waiting for the Face Boss²² to come back and resume cutting coal. The Foreman reported me to the Shift Boss (who would greatly assist for my entire stay at Zibulo) who in turn demanded I come back to surface. I was worried that the issue would be escalated to the Production Manager but to my surprise, upon my arrival at the Shift Bosses office was greeted with laughter. It was a relief, but the incident made me realise that not everyone was happy with my presence at the mine and had to be careful.

When I started my fieldwork at Zibulo in late 2015, the mine management did not provide accommodation or transport except access to the mine due to budgetary constraints and found myself renting a room in Phola. It was a blessing in disguise. Staying at Phola and driving to the mine daily depending on the shifts I was working with was enlightening. It exposed me to the environmental hazards that mining communities live with including air and water pollution. Every morning, a thick greyish layer from coal and heavy scent from the nearby thermal power station hung in the atmosphere and presented difficulties in breathing. Driving on the roads to and from the mine exposed me to road hazards created by coal haulage truck from other collieries around

²¹Zibulo colliery is an underground and open pit mine. Focus of the study was on the underground part especially mining department. Cut coal is hauled from the coal face by shuttle cars to a nearby feeder breaker which breaks the coal ore into smaller sizes on a deck and chain conveyor system and fed into conveyor belts to the surface. Further processing takes place on surface and stockpiled in Silos. In the case of Zibulo, the coal in silos is transported via an overland conveyor belt system 16km long (the longest in Africa) to Phola coal washing plant).

²² Face Boss is the immediate supervisor of operators in an underground operation. He/She is a certified miner and leads a shift in terms of production in a section.

Ogies. The whole experience showed the conflict between capital and social actors epitomised by community protests, blockage of roads including the main highway like N12 in Ogies.

In Postmasburg, the host town of Kolomela mine, I found myself having to catch early flights from OR Tambo on some Mondays to Kolomela. It was not easy yet there are engineers, surveyors and other mine personnel who live that life of commuting daily. Kolomela mine were prepared to fly me every week to and from Pretoria but declined the offer as I wanted to do ethnography. The mine made accommodation and housing provision and I am forever grateful. Staying in Postmasburg for three months, a hot, isolated and less economically developed town showed me the other side of life as compared to other urban centres. Lack of social and economic opportunities in terms of employment, infrastructure and social entertainment frustrated residents and often leads young people to alcohol and drug abuse. Limited opportunities as my stay and observations in Postmasburg revealed, can lead to identity politics leading to exclusionary practices. Above all, my stay in the communities I was conducting my studies also showed that once immersed, mineworkers forget your presence and treat you as one of them and the real work begins of understanding their everyday life and experiences. I vividly recall at the height of 'Fees Must Fall' protests across South African universities when I was called into an informal conversation with a group of 15 operators during lunch and had to account on why students were protesting, burning and destroying infrastructure and not wanting to pay fees. It was a reality check for me given what fellow students were doing. Some operators were not happy with the call for free tertiary education as they are the tax payers contributing to young students' education who will in turn come and undermine them when they join the industry as graduates. I have no regrets of conducting an extended case method research.

4.11. Conclusion

In this presentation of this thesis, I attempt to make interdisciplinary arguments based on the findings from the field on how economic and social landscapes are constructed, contested, negotiated and renegotiated by both labour and capital to meet their needs. This is done through the lenses of my observations of the workplace and community, documents and interviews conducted at the research sites. The triangulation of different techniques and how they intersected with the complex social research field provide the basis of the contribution this study seeks to

make in understanding spatial organization of new mines in a post-apartheid South Africa. The discussion has shown merits and demerits of data collection techniques and how they intersected with the field. As a researcher I had to confront and deal with various challenges and ensured that data was collected in a systematic and ethical way while the main research questions were being addressed. Lessons from the field reveal that as researchers, we ought to remain alert, ethical and that the field is complicated and requires level headedness and quick thinking as we carry out social sciences research.

Chapter 5: Mining Towns: the case of Postmasburg and Ogies spatial reconfiguration

5.1. Introduction

In Chapter 4, I outlined the methodological approach used in this study, its successes and limitations and my reflections in terms of negotiating access and the actual experience during field work (data collection). In this chapter, I seek to show how capitalism as a mode of production brings capital and labour together through complex geographical configurations that allow production and accumulation to take place (Herod, 2012). As such, space (absolute, relative and relational) (Harvey, 2006) must be configured in ways that make capitalism flourish. This entails the development and construction of economic and social landscapes to ensure that capital accumulates profit, circulates it and at the same ensures that spaces of consumption and reproduction fulfil labour's social relations demands (Herod, 2012). This section provides the conceptual description of Ogies in Mpumalanga and Postmasburg in the Northern Cape as host towns for Zibulo colliery and Kolomela iron ore mines respectively.

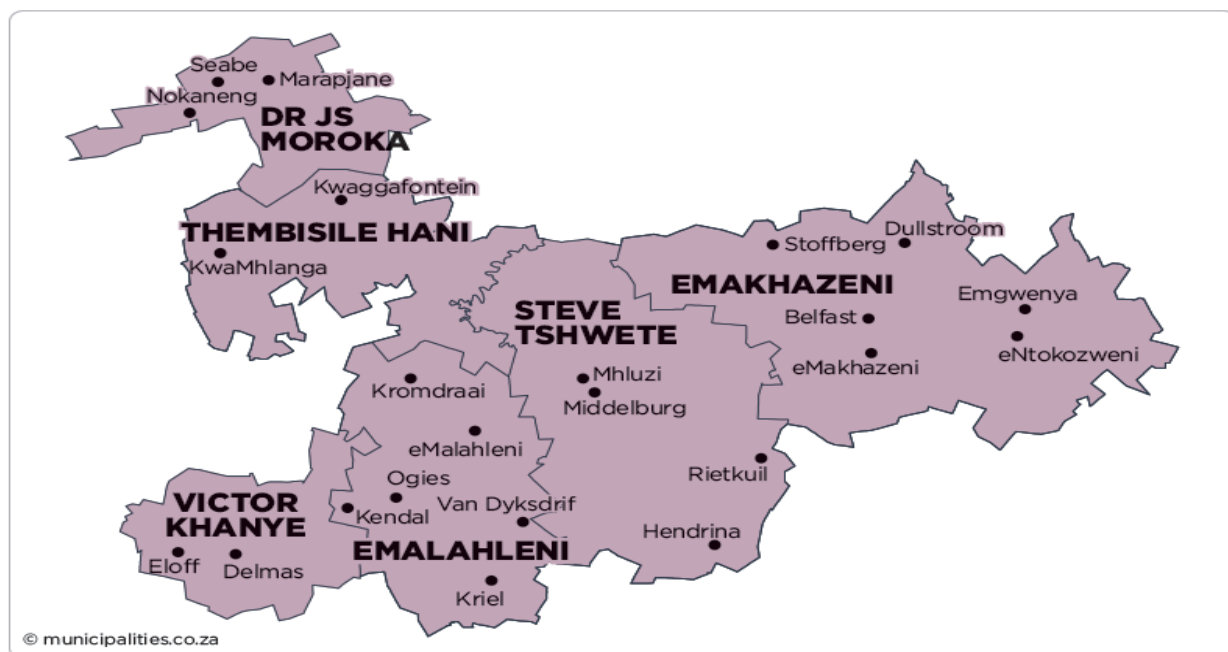
A spatial fix is the zenith of geographic configuration of space by capital to enable accumulation and profits (Harvey, 1982; Herod, 2001; 2012). Of interest is that mineral deposits in this instance coal and iron ore are where they are, they are fixed in absolute terms. One cannot determine where they should be located but occur naturally. As such, mineral deposits are fixed rigidly in absolute terms and capital must create a network of economic landscapes to extract, process and transport them. The outcome of these economic and social landscapes reflects struggles between capital and labour to influence or have a say on how space is produced and controlled to meet their different competing interests. Thus, this chapter seeks to show how the arrival of the two mines in the respective towns variedly impacts on the demographic and socio-economic organization Postmasburg and Ogies. The comparison is however skewed given the fact that Ogies is a satellite town hosts Zibulo colliery under jurisdiction of Emalahleni Local Municipality while Postmasburg is fully fledged independent Tsantsabane local municipality that hosts Kolomela. Therefore, Postmasburg is much bigger in terms of scope and administrative functions as opposed to Ogies. Spatial reconfiguration of Postmasburg by Kolomela mine related activities has resulted in what I term 'sanitised space' (further developed in chapter 6). Nonetheless, the comparison is necessary

to show the size, profile and the impact of mining activities in these two geographically different locations.

5.2. Towns and mines: Ogies and Postmasburg

Ogies is historically a small farming town that was established in 1928 on a farm called Oogiesfontein which means a fountain of many ‘eyes’ or ‘springs’²³. Ogies is surrounded by both commercial maize farms and small to large scale coal mines. Furthermore, Ogies falls under the jurisdiction of Nkangala District municipality and directly under Emalahleni municipality (Fig 1.1).

Figure 1.1 Location of Emalahleni Local Municipality in Nkangala District Municipality, Mpumalanga



www.municipalities.co.za

Once a stand-alone town but now a satellite town since 1994, Ogies is located 110 km south-east of Pretoria and approximately 29km south-west of Witbank, 111km from Johannesburg. Ogies is

²³Human Sciences Research Council. Dictionary of Southern African Place Names. Public Domain p345.
<https://archive.org/details/DictionaryOfSouthernAfricanPlaceNames>

also 37.5 km by road South of Kriel another small mining and power station town. The town is strategically located 3 to 4km away from the N12 to or from Johannesburg that connects Witbank and the N4. Some mine employees reside in Johannesburg, Pretoria and Witbank and drive to and from the mine daily. National highways have more lanes hence less congestion with quality tarmac surfaces and thus less time spent driving. This speaks to Harvey's (1989) time-space compression due to improved and modernised transport and communication systems. Though Witbank, Johannesburg and Pretoria may be seemingly far from Ogies and surrounding coal mines, an up to standard road network enables mine workers to drive from these respective urban places to mines daily within a short space of time because of improved and efficient road network system. Close geographical linkages and networked economic development provide an array of choices of residence for workers working at Zibulo colliery. Furthermore, Ogies and its surrounding coal mines are not relatively further away from the Highveld region through railways and road network hence coal and agricultural produce can be freighted from one point to the other.

Fig 1.2 Location of Tsantsabane Local Municipality in ZFM Mgcawu District Municipality in the Northern Cape Province



On the other hand, Postmasburg is a town located in Tsantsabane Local Municipality that is under ZFM Mgcau District municipality in the Northern Cape (fig 1.2). It was a station for the London Missionary Society, proclaimed a town in 1892 and named after Reverend Dirk Postma founder of Reformed Church (Tsantsabane Local Municipality, 2016). The town gained municipal status in 1936. From its establishment, Postmasburg was a poor, rural farming town until the emergence of manganese and iron ore mining companies. It is a dry arid region within the Karoo belt and extremely high temperatures. Postmasburg is 606km away from Johannesburg, 693km from Pretoria, 195km from Kimberley, 42km from Lohatla Military combat training base and 93km away from Kathu all by road. The town is also 222km away east of Upington by road. Tsantsabane municipality whose main town is Postmasburg is comprised of the following residential areas; Boichoko, Postdene, Newtown, Stasie, Groenwater, Skyfontein, Jean Heaven, Olifantsfontein and Lohatla military school. In absolute terms, it can be argued that Postmasburg is far away distance-wise from Johannesburg and Pretoria and most visitors or mine workers must endure between 6 to 7 hours long drive, whereas if one flies using the mine ran airport 5 and half hours less.

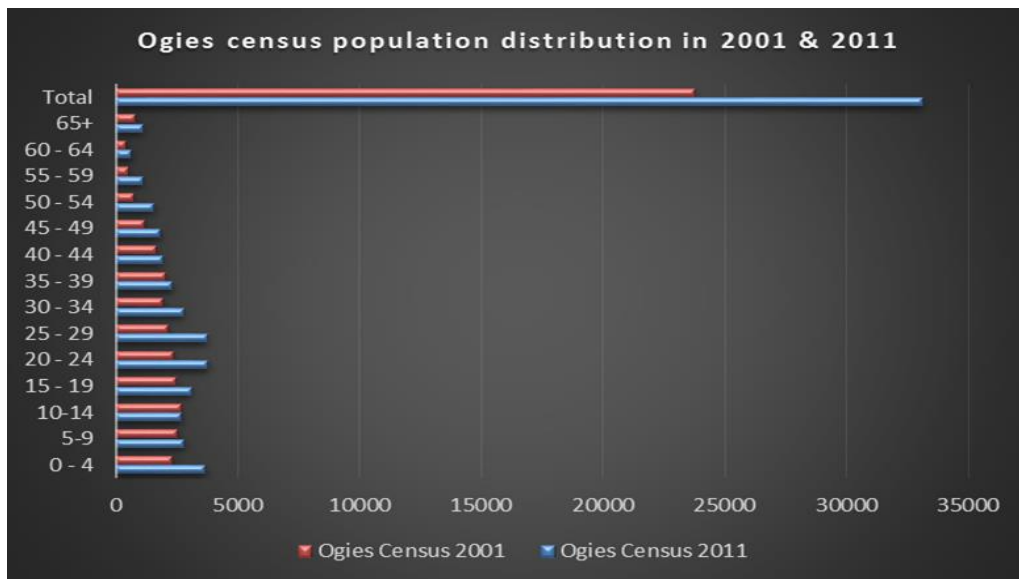
Furthermore, Postmasburg is strategically located not far off from the main national roads i.e. N14 and N12. Therefore, there is efficient road movement however, extra-caution is required when driving along R325 and N14 because of manganese and iron ore haulage trucks. The nearest newly upgraded semi-commercial airport is at Sishen in Kathu. It therefore means ordinary residents who can afford to fly do not necessarily have to drive to Upington or Kimberley to catch a flight to Johannesburg. Therefore, the friction of distance due to improved modes of travelling can be an incentive for mining companies to attract skilled labour and tourists who want to enjoy the Karoo. However, Kolomela and Beeshoek mines operate a private air strip called Tommie's Field serviced by Airlink twice daily and five days a week to and from OR Tambo International airport in Johannesburg. Also, the town is connected with two railway lines, one privately used by Kolomela mine and the second one by Beeshoek iron ore mine. The railway line from Kolomela mine links up with the one from Sishen mine (Kathu) and then proceeds to Saldanha Bay. This railway line is used by iron ore goods trains on a daily basis from Kolomela and Sishen mines to Saldanha bay, loaded into bulk cargo ship to China and Europe. Therefore, it is quite quicker for the iron ore company to transport iron ore for export from Kolomela mine to Saldanha bay through the 861km long railway line without delays as opposed to by road.

5.3. Demographic and socio-economic profiles of Postmasburg and Ogies

5.3.1. Demographic and social profile

Ogies is under Emalahleni local municipality and acts as an administrative satellite town of Witbank. It has two main residential settlements i.e. Phola and few houses just outside the central business district and farming communities. Phola Township in absolute terms is 8 km away from Ogies town and 31 km away from Zibulo colliery mine by road. Ogies has a total population of 33 115 based on the 2011 census (Statistics South Africa, 2011) as shown in Figure 1.3 below. The chart below shows that population of Ogies increased by 10 000 between 2001 and 2011. There is steady population increase across different cohorts with ages between 20-24; 25-29 and 30-34 experiencing significant population increases which can be directly related to increase in mining activities around Ogies.

Figure 1.3 Population distribution of Ogies between 2001 and 2011

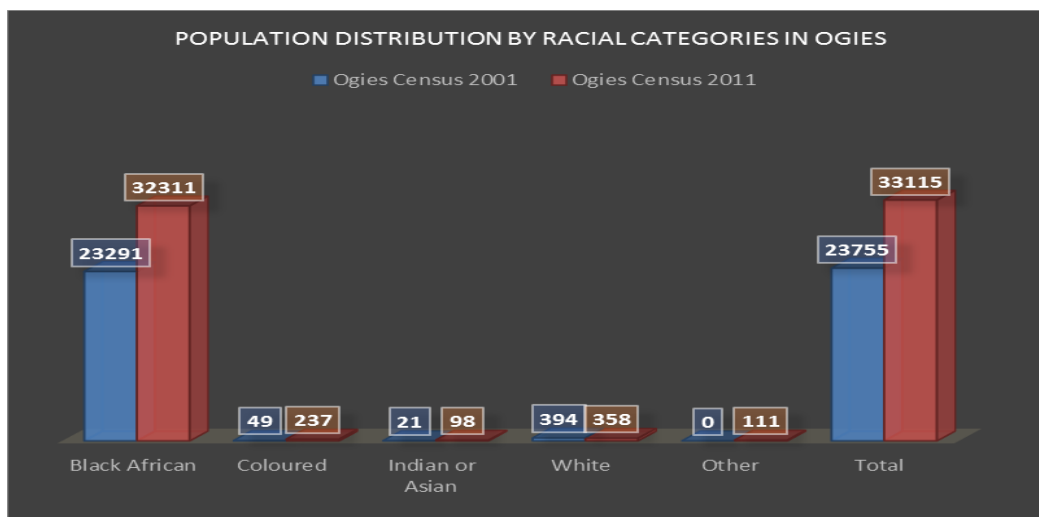


Statistics South Africa, 2001 and 2011 national census results.

The Emalahleni Local Economic Development strategy (2011:8) “...Phola residential area which is situated immediately to the north of the N12 in the western part of Witbank and which accommodates a large concentration of disadvantaged people” lacks a sound economic base. ‘Iraq’ is a new informal settlement where homeless people organized themselves and occupied a portion of land owned by a nearby farmer. The area is characterized by shacks and informally built brick

settlements. The residential settlement is serviced by one big clinic, a couple of private medical practices dotted across the township, a community services center, Shoprite supermarket, bottle stores and shebeens and lastly six schools (primary and secondary). The racial composition of Ogies from 2011 population census comprises of the following; Black African 97.6 %, Coloured 0.7%, Indian/Asian 0.3%, White 1.1% and other 0.3% (Stats SA, 2011) as shown in fig 1.4. The main mother languages spoken are as follows; Zulu, Afrikaans and Sotho.

Figure 1.4 Population distribution by racial categories of Ogies (2001-2011).



Statistics South Africa national census 2001 and 2011 results.

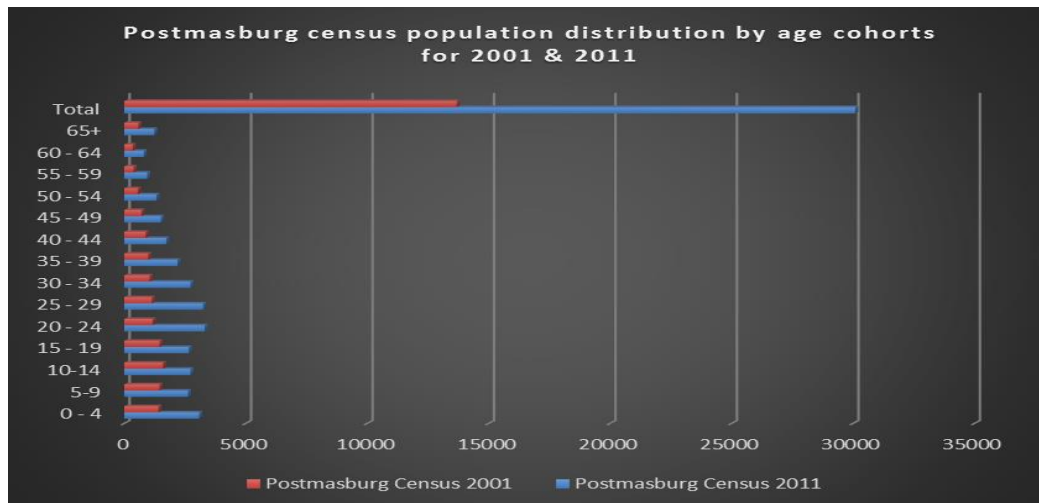
Phola has limited prospects of expansion since on one side, it is bound by the N12 that runs from Johannesburg to Witbank and beyond, while on the other side there is a farm which is said to be situated on top of unexplored large coal deposits. On the western side of the township settlement there is a buffer zone to nearby coal open pits and Kendal power station. In absolute terms, the physical geography of Phola is characterised by undulating plains and during the rainy season, gravel streets get easily washed off creating a network of potholes. Phola has an apartheid style spatial plan characterised by a single entrance and exit. Phola Township in relational terms is known for community protests. Many of these protests have hovered round basic service delivery and youth unemployment. To some extent there have been reports of disgruntled small-scale business owners using unemployed youth activists and ‘professional protesters’ to protest by blocking inward and outward traffic ferrying workers to Kusile power station. As mentioned earlier, Phola and Ogies are surrounded by over 40 mine related activities including Kendal and

Kusile power stations of which the latter is still under construction. Given the apartheid style physical design of the township of a single entrance and exit, it has been relatively easy for Phola protesters to close the main roads and block people from going to work at the surrounding places. As a result, several residents who work in the mines or power stations have relocated to suburbs in Witbank. In the past four years, protests have been directed at Kusile power station and its consequent contractors resulting in numerous work stoppages. Sometimes the protest actions would spill into N12 that passes just less than a kilometre with the township from Johannesburg. Ogies serves as the central business district of Phola. It is constituted of two main roads and a few minor streets that branch out of them. Four supermarkets namely Spar, Shoprite, Saverite and another run by Asians serve the town. Regardless of the retail outlets, residents of Ogies and Phola still conduct shopping and access administrative services in Witbank. Therefore, in relative terms, Witbank is seen by Ogies residents as a stone's throw away due to the fact there are taxis and lifts along N12, yet absolute terms Witbank is approximately 34km away. Administrative functions, spaces of consumption like Highveld mall and public services attract Ogies residents to commute to Witbank. The efficient road network and availability various modes of transport result in friction of distance. Furthermore, the aesthetic shopping experience evokes and stirs the desire of Ogies residents to visit spaces of consumption in Witbank due to their non-existence in Ogies and Phola due to uneven development by capital.

Conversely, Postmasburg is a fully-fledged town with its own local municipality. Spatially, Postmasburg's residential settlements have expanded since 2009 from the construction phase of Kolomela mine up to its full operations. Postmasburg, based on the 2011 population census, had a total population of 30 089, 8114 households of which 32.4% are female headed (Stats SA, 2011) as shown by the chart below. Of interest on the population distribution by age cohort is that the following groups' population increase doubled i.e. 14-19; 30-34; 40-44; 45-49 and 50-54 (see fig 1.5). At the same time, the following age cohorts' population increased three times more i.e. 20-24 and 25-39. These population increases are significant in that they can be directly linked to the arrival of Kolomela mine just outside Postmasburg. In South Africa, due to the labour history (colonialism and apartheid) of the country (Wolpe, 1972; Von Holdt, 2003; Bendix, 2015) that left its spatial imprint, prospective job seekers (migrant labour) move from their places of origin to provinces and towns that host mining activities in search of work. Kolomela mine was constructed

in 2008 and started production in 2011. Thus, the spike in population especially within 19-50 can be attributed to the presence of Kolomela in Postmasburg and attracting potential job seekers.

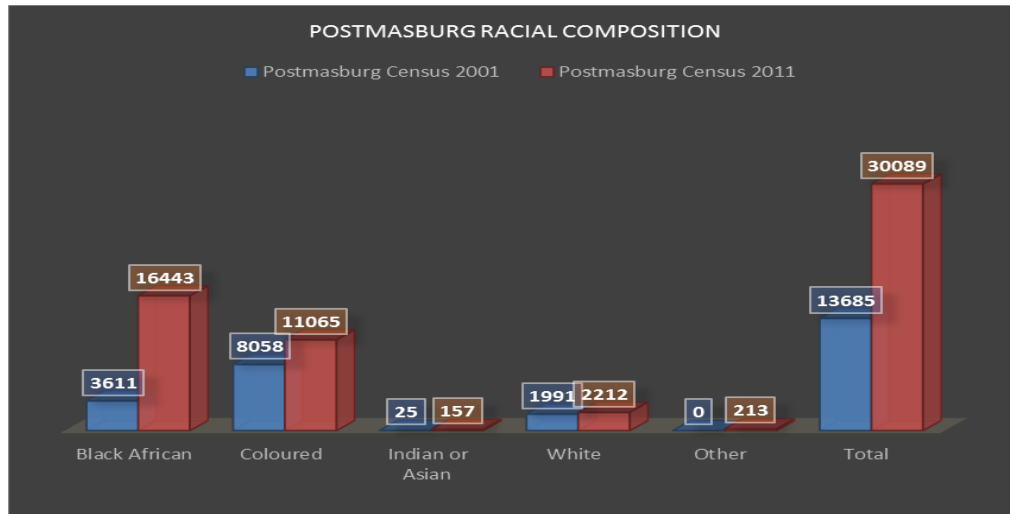
Figure 1.5. Postmasburg population distribution by age cohort based on census data of 2001 and 2011.



Statistics South Africa national census 2001 and 2011 results.

In addition, the following characterises racial composition of Postmasburg; Black Africans 54.6% of the total population, Coloured 36.8%, Indian/Asian 0.5%, White 7.4% and others 0.7%. Afrikaans is the dominant mother tongue and accounts for 53.9%, Setswana 33.6%, IsiXhosa 2.7, English 2.5%, and Sesotho 2.6% (see fig 1.6 below). Northern Cape in general Afrikaans is the main language of communication though there are less Coloured and White residents combined to Black African who are predominantly Tswana speakers. The chart above shows Postmasburg population distribution by racial composition.

Figure 1.6. Postmasburg racial composition based on Stats SA 2001 and 2011 census data.

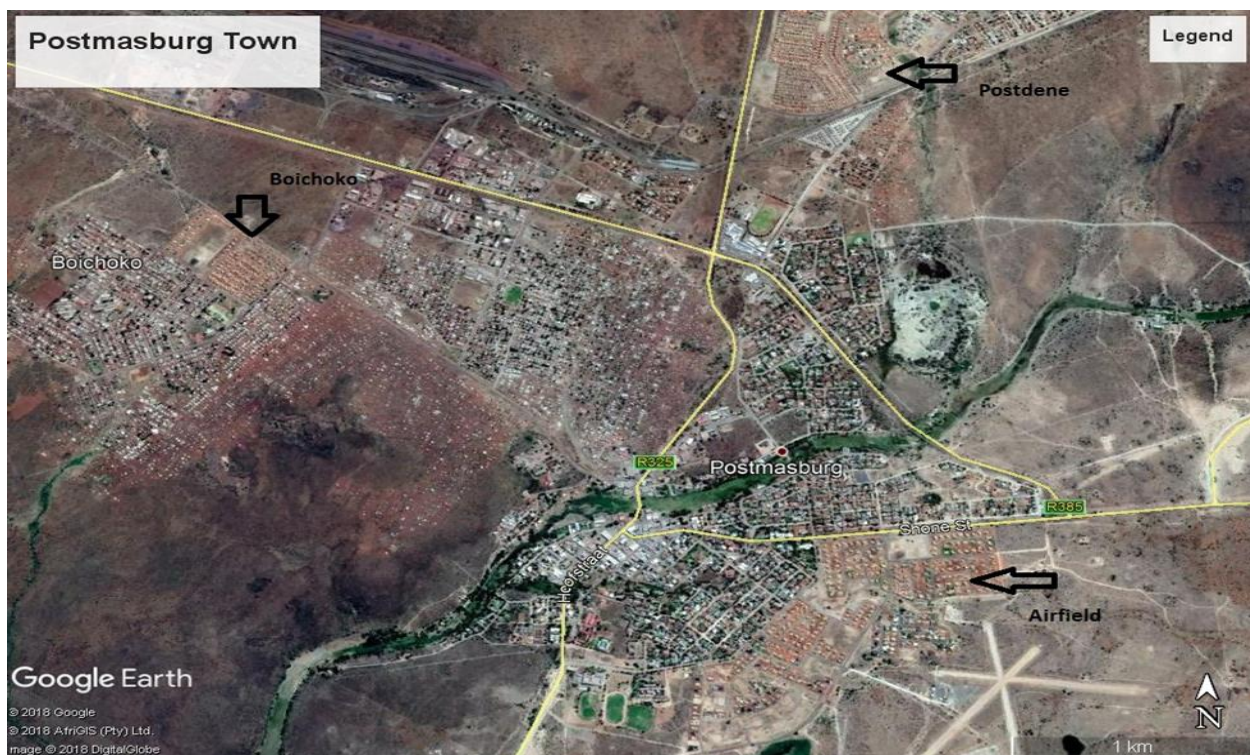


Statistics South Africa national census 2001 and 2011 results.

In addition to the above, Postmasburg population is 2026 less than that of Ogies based on 2011 population census. Furthermore, 70% of the population lives in formal dwellings while 45.5% and 87.6% have access to piped water inside dwelling and electricity for lighting respectively (Stats SA, 2011). In absolute terms, the residential settlements follow a radial pattern where within a radius of 3 kilometres from the central business district are low density residential suburbs that include Airfield (predominantly houses built by Kolomela and Beeshoek mines and Postmasburg (comprising of predominantly white owned houses). Residential settlement patterns follow a racial line where places like Boichoko, Newtown, Jean Heaven and Groenwater are dominated by Black Africans (Batswana, Basotho among others) whereas Postdene is for Afrikaans speaking coloureds. Likewise, Postmasburg still resembles apartheid spatial planning of separate development and racial segregation and Tsantsabane local Municipality does acknowledge this in its Spatial Development Framework. The Central Business District (CBD) is surrounded by predominantly by a low-density White suburb with a few Black Africans and Coloureds with an exception of the Airfield suburb where Kolomela and Beeshoek houses are located. Townships like Postdene (Coloured) on the east, Boichoko and Newtown (Black African Tswana speakers) north and north-west of the CBD. The spatial design of the town in relation to residential suburbs especially those in predominantly Black Africans depicts imprints of racial segregation and hence less integration (Tsantsabane SDF, 2016). However, this logic seems to have changed with the

introduction of new mine workers houses built by Kolomela mine in Boichoko, Postdene and Airfield (see fig 1.7). The inhabitants of these houses do not necessarily follow the older spatial racial composition. In a subtle way, relationally, some suburbs are still regarded as reserved for racial and class group and this was evident through ordinary conversations with random Postmasburg residents. This is in stark contrast to Ogies, which does not have a lot of these low-density residential suburbs.

Figure 1.7. Aerial view of Postmasburg and location of houses built by Kolomela mine in Postdene, Boichoko and Airfield.



Google Earth, 2018.

In addition to the above, there are few spaces of consumption in Postmasburg and these include a small shopping precinct, Shoprite, Spar and Saverite. In terms of designer retail outlets, they can only be found in Kimberley or Upington. Kathu, another mining town 60 kilometre away by road from Postmasburg does have two big shopping malls but the retail outlets are regarded as expensive, typical of mining towns. Postmasburg does not have a wide range of recreational facilities for instance, cinema and theatre houses, and amusement parks among other things. This is a similar situation to that of Ogies and as result workers and other Postmasburg residents who

have disposal income have to travel to fulfil their desires and fantasies in bigger towns. In terms of administrative functions, Postmasburg has more government related departments as compared to Ogies whose residents have to travel to Witbank to access public services. Such departments include, the Home Affairs, Labour, and Social Development among others. Furthermore, mining companies have built new parks or renovated old ones within surrounding residential settlements.

Also, the town hosts more than 10 schools (primary and secondary) and a skills training college run by Kolomela mine. There is a massive shortage of housing within the low and high-density band. Also, the ability of mining companies to pay high rental charges for housing from private owner has led to; exorbitant rental rates and unwillingness to sell property. The situation is further compounded by the fact that Northern Cape is extremely hot, and lack of social life and economic boom seem not to attract permanent residence of skilled to highly skilled labour force. The presence of mines and subsequent influx of mineworkers and potential job hunters has created serious shortage of housing. Low income residents have established new informal settlements that were jettisoned just before local government elections of 2016. Table 1.1 below shows comparative census data on types of dwellings between Ogies and Postmasburg in 2001 and 2011.

Table 1.1. A comparison between Postmasburg and Ogies based on 2001 and 2011 census data from Stats SA on respective residents' types of dwellings.

Type of dwelling	Postmasburg		Ogies	
	Census 2001	Census 2011	Census 2001	Census 2011
Formal dwelling	2544	5679	4013	6729
Traditional dwelling	35	26	130	113
Informal dwelling	506	2286	1945	2373
Other	76	123	27	50

Similarly, Phola residents without residential properties invaded some farming land, formed an informal settlement called Iraq. The comparative table above shows the number of households in both Ogies and Postmasburg and their type of dwellings. Census data in the table above shows a

decline in traditional dwellings i.e. mud and thatch in both towns and an increase in formal dwellings i.e. in Postmasburg from 2544 in 2001 to 5679 in 2011 and in Ogies from 4013 in 2001 to 6729 in 2011. However, of significance is the increase in the number of households residing in informal dwellings which are a common feature in mining towns (SALGA, 2015; see also Chinguno, 2015). Census data in the table above shows that households dwelling in informal structures rose four times in Postmasburg from 506 in 2001 to 2286 in 2011 while in Ogies rose from 1945 in 2001 to 2373 in 2011. These increases can be linked to increased population by prospective job seekers at the mines and failure by local municipalities to provide residential land and accommodation. Thus, parallels can be drawn between Ogies and Postmasburg though the latter is a fully-fledged town with a stand-alone municipality as opposed to Ogies that is more of a dormitory/satellite town of Witbank and Emalahleni local municipality.

5.3.2. Economic activities in Ogies and Postmasburg

Ogies, the small town that hosts Zibulo colliery, does not have significant economic activities except for retail outlets that include, financial services providers (banks and cash loan outlets), furniture and clothing, fruit and vegetable, other agriculture related activities and minor engineering activities. There are three significant economic landscapes in and around the town besides mining i.e. grain silos and milling, railway line passing through Ogies (Phola processing plant) to Richards bay coal terminal and Eskom power generation operations. Transnet is the only significant commercial technical company and Phola processing plant jointly owned by Anglo Coal Inyosi (Zibulo) and South 32 formerly BHP Billiton (Anglo American, 2012²⁴). As mentioned earlier, Ogies is surrounded by various sizes of coal mines within a radius of 100km. The main town, spatially, has less than four streets and a significant number of old buildings. Prospects of expansion are slim as the town is surrounded by Klipspruit (South 32) and Zibulo open cast mines on the western side and Goedgevonden open pit 7 km south of the town. Given that Ogies is a small mining town, one would expect several support services companies to the surrounding mines, however, that is not the case. Some of the mine houses operating small-medium and large-scale collieries include South 32 formerly BHP Billiton, Anglo Coal, African Rainbow Minerals, Exxaro, Wescoal, Shanduka and Khanyisa Coal. The mining methods used to

²⁴ Anglo American. 2012. Anglo American opens R4.2billion coal mine. www.angloamerican.com/media/press-releases/2012/zibulo_opening

extract coal are either open pit or underground methods. The small town's proximity to Emalahleni town seems to have stifled its economic growth, hence unequal development in terms of goods, services and infrastructure in comparison to Emalahleni. On the other hand, open pit mining operations have limited the expansion of the town on the west and south of Ogies as shown below (see fig 1.8).

Fig 1.8 Aerial view of Ogies and surrounding economic activities.



*Note the mining activities getting closer to the south-west exit of the town. Google Earth 2018.

Postmasburg as the host town to Kolomela and other three mines fall under Tsantsabane local municipality, a category B²⁵ municipality. The increased need for iron ore by China's domestic consumption among other uses witnessed high iron ore prices and hence economic boom of towns where this commodity was being mined. Postmasburg, a once quiet and average town has witnessed rapid transformation of its political economy through mining of iron ore and manganese

²⁵ Category B Municipality according to the Local Government: Municipal Structures Act 117 of 1998 is a sub-division of District Municipality which is a category C (second layer after provincial government). S9 (d) It has a mayoral executive system combined with a ward participatory system.

in the past seven years. Postmasburg local economy is dominated by mining and quarrying which contributes 50.8% of the town's economy followed by transport, storage and communication at 13.7% (Tsantsabane Local Municipality, 2015: 39). Furthermore, General government contributes 11% and finance, insurance, real estate and business on 8.2% among other sectors (Tsantsabane LM, 2015). In addition to the above, the town is surrounded by small to medium scale commercial farms. Recently, new solar energy thermal power plants Redstone (Jasper and Lesedi) has been constructed and will be producing 100 megawatts and providing 200 000 households with power during peak hours.

Transnet remains the major economic actor after mining and quarry and power generation actors. There are a few manufacturing companies whose products service iron ore and manganese mines in and around Postmasburg. Postmasburg has a medium scale mall, Sibilo shopping centre that houses retail outlets like Shoprite, Capitec, Nedbank, clothing ware outlets and fast food restaurants. The shopping centre, as a space of consumption is located just outside the main town's centre and at four-way crossing. The new shopping centre was constructed soon after the start of operations at Kolomela mine. The significant physical changes that have taken place in Postmasburg that include, upgrading of sewerage works, building of new mineworkers' houses and improvement of public infrastructure (roads, rail and schools) are linked to Kolomela mine as will be shown in Chapter 6. Comparatively, Postmasburg is geographically bigger in size than Ogies in that it is a stand-alone local municipality whereas Ogies falls under Emalahleni local municipality.

Ogies is managed as a local municipality's satellite town and hence dependant on the trickle effect syndrome from Witbank (where Emalahleni's offices are located) whereas Postmasburg has a full town status and has its own Category B municipality (Tsantsabane LM). In relative terms, Ogies is closer to major administrative and economic centres i.e. Witbank, Pretoria and Johannesburg (less 120km). This distance allows labour to move freely on daily basis from one point to the other without feeling out of place. In relational terms, both labour and residents can travel a short distance to spaces of consumption i.e. Highveld shopping mall in Witbank, Menlyn shopping mall in Pretoria among other amusement places. There is not much that has changed in Ogies in terms of landscapes created by capital linked to mining except for a few road upgrades on stretch in front of Zibulo open pit mine operations and renovations of a health and school facilities by Zibulo

colliery. For those who stay in Witbank, Johannesburg or Pretoria among other places, they can afford to drive to and from work daily given the short distance and efficient highway freeways. On the other hand, Postmasburg in relative terms is further away from major administrative and financial towns i.e. Kimberley and Upington.

5.4. Zibulo and Kolomela mines

Zibulo Colliery is a multi-product open cast and underground mine (Anglo American Inyosi Coal, 2016) and started operating in 2009. Focus is placed on the underground mine, where the study was conducted. ‘Zibulo’ in Zulu means first born. In relational terms, it is the first empowerment coal project between Anglo American and Inyosi Coal. It is jointly owned by Anglo American Plc. (73% and Inyosi coal (27%) (AAIC, 2016). Inyosi, an empowerment group is led by Lithemba consortium and Pamodzi coal (AAIC, 2016). Zibulo mine is 26 and 31 kilometres from Ogies and Phola respectively by road. Furthermore, Zibulo is 60 and 118 kilometres from Witbank and Pretoria respectively. Furthermore, depending with the route one uses, Zibulo colliery is between 40 to 45km to Kriel and 25 to 30km to Leandra by road as shown on the map above. These are some of the distances that Zibulo employees drive to and from home to work daily. Zibulo is an underground colliery (150m deep approximately). The colliery is located on a farm and has nine sections underground.

As an absolute space geologically, Zibulo colliery is located within the “Witbank coalfields which are usually comprised of five seams numbered (from the base upwards) No. 1 to No. 5 seam” (Segopolo, 2015: 285). ‘The colliery extracts seam number two extracting coal through the board and pillar method’ (Segopolo, 2015: 285 see Alexander, 2004, 2008 on coal geology in South Africa). At the time of this study, the colliery utilised a four-shift system and as of from March 2016, now use a two-shift system (12 hours per shift) to mine and haul coal from underground. At the time of the study, eight sections were being mined by Zibulo employees whereas section nine was underdevelopment and operated by contract workers. A typical shift in each of the eight sections would have a staff complement of ten members that include: Miner (shift supervisor), three shuttle car/battery hauler operators, two roof bottle operators, single fitter (mechanical), an electrician and two continuous miner operators (see also Segopolo, 2015). A typical section is

characterised by the mining area (coal face), waiting area (a furnished container), parking areas, madala site²⁶, feeder breaker and the electrical station.

In addition to the above, each section is characterised by a network of pillars and through roads before the coal face (Segopolo, 2015 see also Alexander, 2004). Green flickering small devices (rotary tell-tale) attached on the roof is a common site. Everyone underground has got an obligation to constantly check for possible colour changes on the device. The rotary tell-tale is an early warning mechanism for roof failure/collapse. The coal face is separated from the rest of the section with dividers called brattices. Brattices are also used to create inward and outward-bound ventilation system. At the coal face, coal is extracted following a prescribed cutting sequence per shift by a continuous miner that is remotely operated by a Continuous Miner (CM) operator. It cuts the coal and loads it into shuttle cars that follow tramming routes hauling the coal to the feeder breaker. A conveyor belt is located at the feeder breaker and once offloaded, the coal is hauled to the surface through an inclined conveyor CV001 and discharged into a 6 000 tonnes silo (see fig 1.9 drawn from google earth) (Hancock, 2010). After going through crushing, it is hauled through a 16 km long overland conveyor to Phola processing plant for washing, storage and transportation (Hancock, 2010).

²⁶ Madala site refers to an area in underground where mineral ore has been mined/extracted and usually unsafe.

Figure 1.9 Aerial view of Zibulo colliery surface set up just outside Ogies, Mpumalanga



Miners, material and equipment are transported underground through one big cage that can carry close to 100 persons at a time or one of the shuttle cars. The bigger cage lift is used during shift change or when transporting bigger equipment. On the other hand, a smaller cage carries 12 persons and operates at all times. However, it is only operated by some licensed personnel like first line supervisors in production, safety and engineering (electrical and mechanical). Underground is a fascinating maze for a first timer. Spatially, it signifies human's mastery over nature in the extraction of minerals within the earth in many ways. As mentioned, there are different sections scattered in different directions. The older a section, the further it is from the shaft. Mineworkers once underground are ferried to different sections with Toyota Dyna lorries converted into buses. Shift Bosses, Safety Officers, Mine Overseers, among others, make use of pick-up trucks when they visit different sections.

On the other hand, Postmasburg is bigger than Ogies/Phola in terms of economic, social and spatial development. Kolomela mine is a Kumba Iron Ore's operation that was officially opened in 2012. The mine is a subsidiary of Sishen Iron Ore Company (Pty) Ltd (SIOC) that is owned by Kumba Iron Ore, a subsidiary of Anglo-American Plc. (Kolomela Mine SEAT report, 2014). Kumba holds 73.9% share in SIOC while 26.1% is held by Black Economic Empowerment groups namely Exxaro (19.98%), SIOC Community Development Trust (3.0%) and SIOC Employee Share

Scheme [Envision] 3.1% (Kumba Iron Ore Integrated Report, 2014). Kolomela is a Tswana word that means “to dig deeper or to persevere.” The mine is involved in the extraction of iron ore across three open pits (Leeuwfontein, Klipbankfontein and Kapstevel), beneficiation and trade of iron ore in South Africa and beyond. In total, the mine has seven open pits and only three are in operation now. Two of the three open pits are mined by Kolomela while Aveng Moolmans at the time of the study was developing Klipbankfontein. Kolomela mine is spread across eight farms and located in relative terms 22 km South East of Postmasburg and 80 km south of Sishen mine in Kathu by road. SIOC holds the surface and mining rights on the eight farms. Kolomela mine is based next to a small airfield jointly owned by Kolomela and Beeshoek mines on the North eastern side and Beeshoek south and north open pit mines on the eastern side.

Kolomela mine employs open pit/open cast method in extracting iron ore from the earth. It is a highly mechanised mine and a direct shipping iron ore operation together with its sister mine, Sishen mine. Kolomela is a direct shipping ore operation that utilises “...open pit drilling and blasting; shovel-and-truck loading and hauling mining processes are applied to generate plant feed” (Kumba Iron Ore, 2017: 25). The iron ore mined at Kolomela mine belongs to the chemical and clastic sediments of Proterozoic Griqualand West super group and define the western margin of Kapvaal craton (Kumba Iron Ore, 2017). The iron ore mined at Kolomela mine is composed of classic textured (28.8% of total), laminated (52.9% of total), collapse breccia (9.8% of total) and conglomeratic (8.6% of total) ores (Kumba Iron Ore, 2017: 19). Just like Zibulo, Kolomela mine is highly mechanised but different in terms of beneficiation. Zibulos’s coal is beneficiated at Phola coal washing plant 16 km away from the mine whereas Kolomela extracts, beneficiates and loads iron ore within the mine premises. Kolomela beneficiates its iron ore through use of a crusher and screening plant and a reclaimer that blends different grades of processed ore. The final product is then loaded into goods train wagons and transported through the Orex Iron-ore export ore line to Saldanha bay for shipment to various customer destinations. Kolomela is linked by a direct railway line that links the mine and Sishen with Saldanha bay.

Figure 1.10 Aerial view of Kolomela mine, Postmasburg, Northern Cape.



Kolomela mine has three functioning pits (see map above), three dumping sites, medium to large scale loading and hauling trucks, blasting equipment, medium to large scale loading and hauling engineering workshop, small pick-ups and equipment workshops, iron ore processing plant, iron ore loading siding and stock piles, administration blocks, fatigue and training centres among other things. The production related sites are integrated in a way that is believed to enable efficient, effective and safe production. Kolomela mine runs on a two-shift system (12 hours) both day and night within mining and plant divisions while support services operate on a normal day shift system (7am to 5pm). The mining operations side is comprised of four shifts namely A, B, C and D. A typical hierarchy for instance in the mining section is comprised of a Mining Manager who is followed by a Production Manager who leads a team of three Mining Overseers (MOs). The three MOs are each responsible for drilling and blasting, construction development, load and haul waste and load and haul ore. Below the MOs are Foremen who are assisted by Production Controllers to lead in the above-mentioned broad categories and their subordinates include Operators of Shovels, Drilling, Hauling equipment and trucks, water bowzers and transport vehicles. In a typical shift within a division for instance after blasting is complete, the load and haul waste team will remove the set tonnage of waste from blasting to a dumping site. At the dumping site, there is an

operator who levels the dumped waste ensuring that the place is safe to work on and for the trucks. On the other hand, the team responsible for loading and hauling ore, load ore into the CAT or Komatsu trucks (777) and operators offload the ore either at the primary crusher or at the stock piles site based on the type of iron ore. It is a repetitive process that alienates Operators from other human beings and bond them with the trucks (mobile space).

The open pits depict a dense network of burrowing and winding roads ascending to the surface, deep wide holes and mountains of earth. The roads are constructed with smooth gravel, wide and either declining or ascending. An observer hardly finds a person walking on foot in the pits except for the drilling teams, Foremen, MOs or Production Controllers. The bellowing huge trucks and intermittent radio communications become solace for the operators. On the other hand, in the expanse plant, technicians, technologists among others are glued to machinery as they ensure that the precious ore goes through the set beneficiation processes adhering to quality control procedures. The machines and laboratory equipment and milling sound of the plant become human companions as the ore is beneficiated until loaded into train wagons.

5.5. Spatial fix and reconfiguration of space: bringing everything together

Herod (2012a: 336) comments that, "...economic landscape-that is to say, the ways in which the economic relations of capitalism or any other mode of production are constituted geographically and play out spatially-must be constructed in certain ways." For capitalism i.e., businesses to carry out its activities and accumulate surplus, it must organise space in particular ways. Herod (2001a; 2012a) among others calls such structures as economic and social landscapes and the complete project of such is a spatial fix as epitomised by Ogies and Postmasburg. The success of capital like mines for instance, has been its ability to organise space i.e. absolute and relative and relational as an outcome (Harvey, 2006) in ways that enable production, realisation of surplus value and accumulation and consequently overcome its own crisis and contradictions daily and on generational basis (Herod, 2001: 2). This has been demonstrated in the descriptions above on Ogies and Postmasburg. Kolomela and Zibulo mines followed different spatial strategies in their respective host towns which was among other things informed by economic development, geographical location of the towns and consequence attractiveness of the places to skilled and specialised labour in creating respective spatial fixes.

The establishment of Kolomela mine and effect on Postmasburg town demonstrates the transformation of surplus capital into investment that had been generated at Sishen mine into a new venture known as South Sishen. The same logic also led to the establishment of Zibulo formerly Zondagsfontein, within a dense network of Anglo coal related mines (Anglo Coal, 2008) as part of capital expansion reproduction and geographic restructuring was necessary for long term development of ‘fixed, immobile capital’ (Harvey, 2001; Jessop, 2006). Findings from a study conducted by Buhlungu et al., (2013) reveal that Kolomela mine was a project was born out of Sishen mine about 60km from Postmasburg in Kathu. The establishment of these two mines in different circumstances and geographical locations demonstrate capital’s ability to overcome internal and external constraints and contradictions for a while (Herod, 2012a; Harvey, 2001; 1982; Jessop, 2006).

Given the fact that capitalism is geographically structured, Kolomela mine took on an all-out strategy to geographically reshape and reconfigure Postmasburg town in consultation with Tsantsabane local municipality. They reshaped ‘absolute space’ (Harvey, 2006) for instance, built new houses for its employees at strategic locations on the edge of existing suburbs (Boichoko, Airfield and Postdene) and near main roads. The Airfield is on the edge of the town and near the main roads for instance Shone street that goes into the CBD and R385 that links Postmasburg and Kimberley; Postdene closer to Plein street that links up with R325 from Kathu into the town and ultimately into R385 to Kolomela mine. The same can be said for the physical and strategic location of Boichoko which is the closest of the three housing developments to the mine. These strategic locations are meant to easily link labour with transport routes to and from work thus less travelling time and labour arriving at work on time thus remodelling relative space (time-space compression). Kolomela mine also constructed and improved infrastructure i.e. transport infrastructure that includes railway and road hence ‘annihilating space through by time’ (Jessop, 2006: 147) as for instance as a direct export mine, iron ore is loaded into locomotive wagons and directly transported to Saldanha bay for shipping through an 861km railway line daily. It is these linkages that enable capital to thrive, accumulate and at the same time enable circulation of other capitals for instance, other businesses like service providers of mining equipment, retail services (shopping malls) and banking and finance to service existing and new consumers. Furthermore, in Postmasburg, Kolomela assisted in the upgrading of bulk infrastructure given the rapid population increase linked to the mine in partnership with the mine (these issues are further discussed in

chapter six). The construction of these economic and social landscapes created particular economic and social relations that in turn reacted upon the same very landscapes as capital is not the only actor in shaping space. Social actors like workers, residents, and prospective job seekers, among others, actively shape and reshape landscapes created by capital and create their own geographies to meet their own interests (Herod, 2001a; 2012), for example, informal settlements in response to housing shortages. Kolomela's actions in Postmasburg were noble but also had unintended consequences as will be discussed in chapter six.

On the other hand, Zibulo took a different approach and did not get too involved with the Ogies town daily operations. The mine did not build any houses for its employees, but rather opted for the living out and transport allowances. The logic behind this strategy is informed by the size of Ogies, geographic location and land use management constraints. Instead mineworkers in different smaller townships and towns near the mine and commute daily. Like Postmasburg, social actors in Ogies i.e. prospective homeless jobseekers invaded farm land and started an informal settlement known as Iraq as the municipality could not provide them with residential stands. This spatial strategy depicts capital's vision of not directly reconfiguring local geography since other mine companies had not invested in the satellite town but in Witbank. This speaks to capitalism's role in perpetuating uneven development. Instead, Zibulo reconfigured absolute space within the mine such as constructing a conveyor belt that hauls coal from mine site to Phola coal washing plant 50/50 joint owned venture with South 32 (formerly BHP Billiton). The Phola coal washing plant is strategically located closer to South 32's open pits and the railway line hub where processed coal is loaded into rail freight wagons and freighted through to Richards Bay Coal Terminal port 580km away for export. Capital utilised existing Transnet²⁷ rail infrastructure as in the case of Zibulo and South 32. In comparison to Kolomela, Zibulo is more withdrawn in terms of its involvement and engagement in the creation or upgrading of economic and social landscapes in Ogies. These different spatial strategies are explained by differences on internal contradictions and constraints on the two different geographically located mining companies; how they deal with capital crisis and the history and trajectory of economic development in Postmasburg and Ogies.

In the case of Ogies, informal conversations with mine and municipal officials revealed that the town sits on top of large deposits of coal and most farmers are holding onto the land to sell it to

²⁷ Transnet is a large state owned South African rail, port and pipeline company.

the highest mining bidder as opposed to the municipality to develop residential and other economic related infrastructure (see Chapter 6). This is evidenced in the earlier map that shows how Goedgevonden (GGV) owned by African Rainbow Minerals new pits are less than 500 metres from the edge of the town; Zibulo and South 32's Klipspruit open pits proximity to Phola Township and Ogies CBD. Furthermore, Ogies proximity to Witbank/Emalahleni has resulted in most economic development taking place in the latter as it is the gateway into Maputo Development Corridor underpinned by the N4²⁸ toll road that stretches from Lobatse boarder between South Africa and Botswana through Pretoria, Emalahleni to Maputo, Mozambique. The Maputo Development Corridor is regarded as a South African government's Spatial Development Initiative process that was meant to promote international trade and local economic development through creation of transport and trade infrastructure to enable flow of transnational capital, goods and people (see Mitchell, 2008; Soderbaum and Taylor, 2001). Therefore, given the central role and location of Emalahleni on the Maputo Development Corridor, investment, social and economic development has been channelled towards the town along the N4 at the expense of satellite towns like Ogies investors and mining companies. This reinforces the lack of development of social and economic landscapes 'economic infrastructures' in Ogies to enhance labour's way of life, "...regulate contracts, exchange, money and credit, as well as inter-capitalist competition, the centralization of capital, conditions of labour..." (Harvey, 2006: 398) as capital views the town as a place of resource or mineral extraction. This geographic differentiation is a result of history for instance most and older coal mines and industry related entities like the now defunct Highveld integrated steelworks were in Witbank thus capital continues to follow that trajectory thus reinforcing uneven development (see Chapter 6).

5.6. Conclusion

Capitalists arrange landscapes in particular ways that enable profit to be realised and accumulation to happen (Harvey, 1982; Herod 2001a). Differential creation of geography of capitalism in different places ensures capitalism and other actors to survive. Through the spatial fix i.e. Ogies and Postmasburg, capitalists with various actors ensure that mining companies remain functional, have access to efficient transportation routes, raw materials and goods and services critical to

²⁸ N4 toll road is an important trade and economic route for South Africa, Botswana and Mozambique. The N4 strategically passes just outside Emalahleni/Witbank hence making the town an economic hub.

production. Also, mining companies, together with responsible authorities, have to ensure that workers arrive to work in time. In this section, it has been shown how Ogies and Postmasburg are spatially structured and how geography of capitalism has shaped the two towns. Harvey's concepts of absolute, relative and relational space have been applied in providing geographical description of the towns. Ogies and Postmasburg are in different geographical locations, which have different minerals, economy and complicated social relations based on each of the town's histories. The population of these towns are almost similar i.e. Ogies and Phola (31 885) and Postmasburg (30 089). I further showed how capital's activities have been collectively challenged by social actors in pursuing their own spatial visions through social praxis.

This section has shown how capitalism develops or enhances spatial fixes and create economic and social landscapes in creating geography of capitalism to aid production, generate profits and accumulation and create capital flows. Also, I have shown the differences on economic conditions of these two towns i.e. Ogies (mining and maize farming) and its proximity to Witbank and Maputo Development Corridor has caused uneven economic development. Ogies is home to and surrounded by many coal mines of varying scales while as Postmasburg is a rural town in the Karoo and geographically dispersed from bigger towns. It is home to less than five mining companies and hence its economic development is narrow due to over reliance to mining. In doing so, I showed the different spatial strategies adopted by the two mines in terms of development of economic and social landscapes Therefore, this shows that the "...ability to make geography of capitalism in some ways and not in others that capitalists as individuals and as a class, together with capitalism as a social system, are able to ensure their survival" (Herod, 2001a: 13 citing Lefebvre, 1976). By the same token, both Kolomela and Zibulo's construction of railway lines and conveyor cutting time to freight coal and iron ore to respective destinations shows time-space compression of relative space. Efficient transport infrastructure like conveyor belts and railway lines linking with Saldanha bay in the case of Kolomela and Richards bay for Zibulo, demonstrates capital's attempts to overcome space and its own internal contradictions. Nonetheless, capitalism does not make and control space alone, it competes with social actors like labour, communities and trade unions who can resist, transform or develop new landscapes as they both have vested interests (Herod, 2001, 2012). The next chapter introduces the two sites of research and offer socio-spatial comparative analysis.

Chapter 6: Community responses to mining landscapes: the case of Ogies (Phola) and Postmasburg

6.1. Introduction

This section shows how social actors respond to landscapes created, altered and reconstructed geographically by capital. Economic and social landscapes create socio-spatial relationships which conversely reacts and shapes the same landscapes. Soja (1980: 210) observes that “...space and the political organization of space express social relationships but also react back upon them.” Thus, this chapter seeks how social actors actively respond through resistance, modification or make new geographies to the spatial configured by geography of capitalism. Furthermore, this is done comparatively between two towns Ogies (Phola) and Postmasburg specifically looking at migrant labour, housing, transport, procurement, socio-economic life, politics of belonging and local government crisis as part of the struggle between capital and labour. In other words, this section shows how social relations “...shape how the geography of capitalism is made, and that the same very geography recursively shapes how social relations develop.” (Herod, 2012: 341). This section is therefore a response to geographies created by capital as shown in the previous chapter five through the establishment of spatial fixes. Through the deployment of sanitised residential spaces in the case of Postmasburg, the chapter demonstrates how sanitisation of absolute space and time-space compression of relative space results in social exclusion of relational space. Importantly, the chapter mirrors the complexities that underpin relations with mining companies, mining communities and local government in a post-apartheid setting.

6.2. Unintended and intended consequences of mine interventions at Kolomela and Zibulo: Social actors and capital

6.2.1. Kolomela and Zibulo employee housing schemes

Kolomela and Zibulo mines have different housing and transport policies. At Zibulo, the mine does not directly provide housing for its employees but provides housing allowances for every permanent employee that is no less than R3000, 00 per month and increases depending on the occupational levels. However, Anglo American Coal Inyosi has a regional housing scheme for all

qualifying Anglo-American employees that promotes house ownership in Spring Valley, Duvha Witbank (Anglo American, 2015). At Kolomela, the mine has its own houses that it rents to its permanent employees in Postdene, Boichoko, and Airfield. These houses vary in size, number of rooms and total area hence variations in terms of rentals per month. When Kolomela mine started i.e. during the construction phase, Postmasburg as a town was quiet and had one mine, Beeshoek, owned by African Rainbow Minerals. Personnel involved in the project phase (construction) were contractors. Most of these contractors came with their own workers based on their expertise. This caused massive pressure on accommodation and consequently led to a spike in residential property rental and buying rates. Postmasburg is not close enough to any large town except for Kimberley (300km) and Upington (300km) away. This is captured in the interview extract below from a Kolomela mine official responsible for infrastructure:

“...taking the geographical situation into account around Kolomela mine, there is no big centre infrastructure like in Johannesburg, Pretoria etc. so obviously all of a sudden there was a huge demand for housing in Postmasburg. Contractors came in with a lot of people from outside and there were no houses available to buy...”

The above raises questions on the readiness of local municipalities in terms of infrastructure capacity, development and management through Spatial Development Framework and Independent Development Plans. Kolomela mine completed the construction of 718 housing units in different phases in line with Social Labour Plans that guarantees the mining operating licence. The houses were built in three different locations mainly, Postdene, a predominantly coloured area; Airfield, just outside Postmasburg central business district connecting into R385 to Kimberley and Boichoko, mainly dominated by Black Africans. Kolomela employs close to 1100 employees and in terms of housing allocation, there is a deficit of 382 houses. The mine is renting 160 houses out of the shortfall of 382 that do not have houses leaving a deficit of 222 houses (see Fig 1.11). Kolomela mines provides housing allowance to 222 workers affected by housing shortage. A closer look at the houses that Kolomela mine has built for its workers shows some level of commitment by the mine to ensure that mineworkers have access to quality housing in comparison for instance to the platinum and gold sector. A case in point is that of Lonmin Platinum in Rustenburg, the mine that came under fire during the Farlam Commission²⁹ for its lack of

²⁹Farlam Commission also known as Marikana Commission of Enquiry was established by President Jacob Zuma in terms of section 84 (2)(F) of the South African Constitution after 34 striking mineworkers had been shot and killed

commitment to build affordable and quality housing for its employees as stated in its Social Labour Plans (Lewis, 2017).

Fig 1.11 showing aerial view of some houses built by Kolomela mine in Boichoko, Postmasburg



www.tsantsabane.gov.za 2018.

To understand the housing question at Zibulo, a comprehension of Anglo American's mining operations within the Highveld region i.e. Witbank and surrounding areas is necessary. Anglo American Coal business joined Spring Valley Housing Project, funded by International Housing Solutions into the South African Workforce Housing Fund (Commercial Property News, 2013). The project developed 2951 low to middle income residential stands and Anglo-American coal thermal division then invested R2 billion, bought 414 houses, and sold at 'affordable' rates to qualifying employees through bank-financed loans (Anglo American, 2015). Consequently, Zibulo did not build houses for its employees but rather provides housing allowances as indicated earlier and provides financial support to qualifying employees who want to buy a house within the above-mentioned housing scheme. Most employees at Zibulo are drawn from within a radius of 200km from Witbank. Few employees reside in Phola, the official community for Zibulo, while

by officers of South African Police Services. The massacre happened on 16 August 2016 as striking mineworkers were demanding a wage increase of R12 500 per month during a wildcat strike.

the majority own or rent houses in Witbank's suburbs. There is a reason behind why most Zibulo employees do not want to reside in Phola a predominantly Black African high-density township. Findings show that, Zibulo employees do not feel safe in the townships especially during community protests that are frequent; there is shortage of land for residential housing development as the township is surrounded by privately owned farm and mining land (see Fig 1.12) and poor service delivery. As a result, some workers have moved to Witbank and others to Middleburg. Witbank is a well-developed economic hub and consumers have access to diverse quality goods and affordable services in comparison to Ogies. The Emalahleni satellite municipality does not own most of the land in Ogies. Most of the land (farming) is in the hands of farmers. Residential expansion is difficult as most farmers are unwilling to sell land for residential property development because their farms sit on top of coal seams and would rather sell it to prospecting mining companies. Therefore, chances of residential property development are limited, if not non-existent.

Fig 1.12 Aerial map of Ogies town surrounded by mining operations and farms

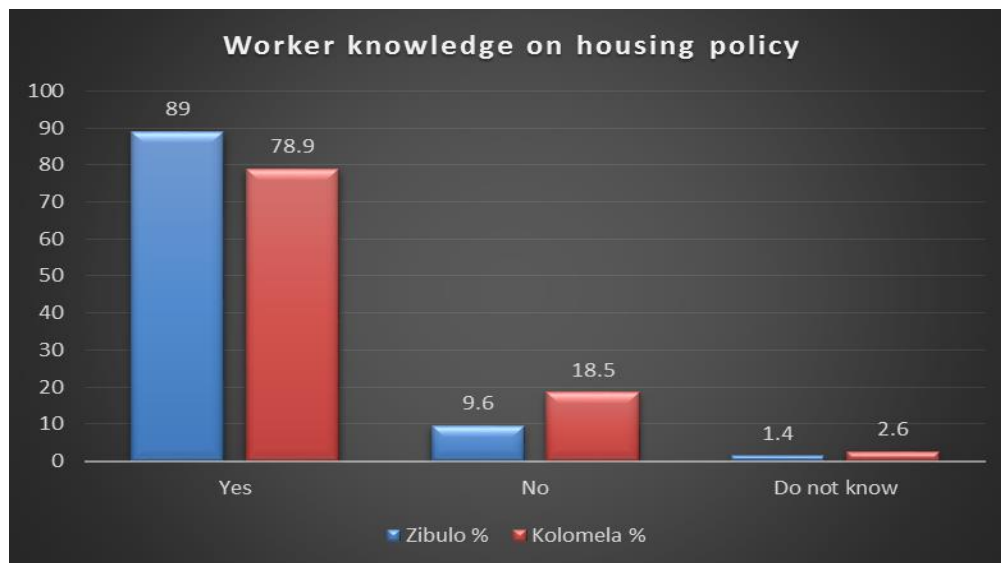


Google Earth, 2018.

It can be observed that the two mining companies have different housing policies for their employees that are mainly influenced by the geography and history of each of the mines. The

following survey results show how survey participants responded to the questions asked on the housing policies of each of the mines. When the survey participants were asked if both Zibulo and Kolomela had a housing policy or allowances (Q28), their responses are reflected in the graph below in (fig 1.13). At Zibulo, 89.1 % of the respondents indicated that the mine had a housing policy/allowance for all permanent employees while as 79.8% indicate the same at Kolomela mine. 9.6% and 19.6% indicated that they were not aware whether Zibulo and Kolomela respectively had a housing policy/allowance.

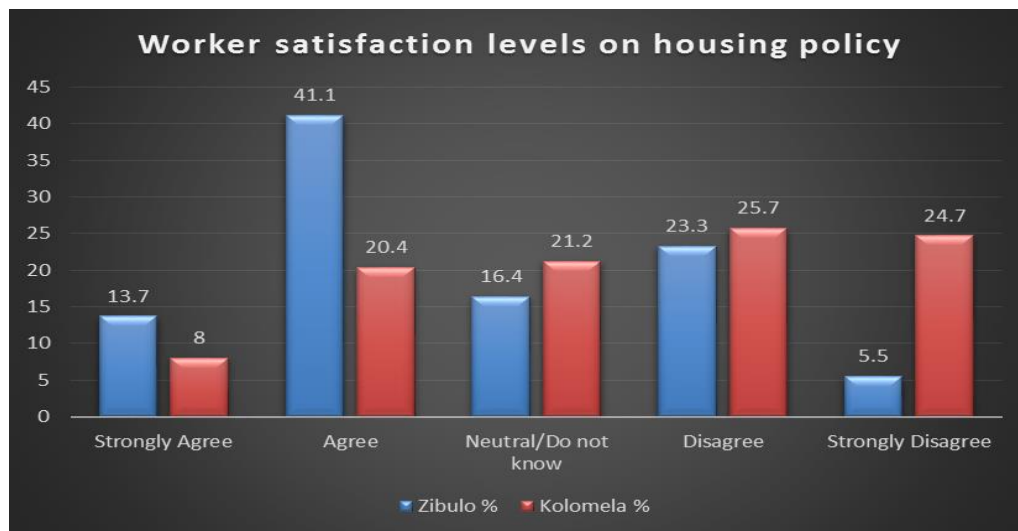
Fig 1.13 Survey participants' knowledge of existence on housing policy at their respective workplaces.



Furthermore, when the participants were asked on their levels of satisfaction in terms of the housing policy/allowance (Q29), survey results in the graph below (Fig 1.14) reveal that 41.1% at Zibulo, in comparison to 20.4% at Kolomela, indicated they agreed that their current housing policy/allowance satisfied their housing needs. At the two mines, 23.3% and 25.7% indicated they disagreed that the housing policy/allowance met their needs at Zibulo and Kolomela respectively while 24.8% at Kolomela strongly disagreed in comparison to Zibulo's (5.5%). The survey results on the above-mentioned questions reveal that at Zibulo, workers are generally satisfied with the housing allowance while Kolomela mine's participants are not satisfied at all. At Zibulo, qualitative interview responses reveal that some want the housing allowance to be equal across board regardless of occupational levels while others want it to be increased. At Kolomela, many

are not happy with the housing scheme, as it does not promote property ownership, is expensive to maintain (high water and electricity tariffs) and fringe benefit tax is deducted from their monthly remuneration.

Fig 1.14 Levels of satisfaction on existing housing policy at each mine



6.2.2. Housing and transport policies

Findings from qualitative interviews with selected workers from Zibulo indicate that those within the bargaining category levels are not happy with the differential amount of housing allowance based on occupational levels. Interview participants argued that housing is a basic human right and so is a housing allowance. They noted that housing allowance was a substitute for actual housing which is a basic human right. Evidence from qualitative interviews reveal that workers within the collective bargaining category and a few that are in the upper bands support the notion of equal housing allowances across board because housing is a human right. They underscored that differences in housing allowances perpetuate class differences and inequalities among workers. One interview participant noted the following:

“So, what I am saying is this, in the Constitution [of the Republic of South Africa], the Constitution says in the Bill of Rights, everyone has got the right to a decent home. So, housing is a fundamental right. Now if housing is a fundamental right, don’t you think or

believe that the money in which we are given to buy or rent a house should be equal across the board since it is a fundamental right and not a privilege? I believe it should be the same across the board. Whatever the GM (General Manager) is getting, the guy on the floor should be able to get it...when I talk of a fundamental right, we are talking of something that is the basic to all. So that should be that..." (Engineering Official, Zibulo)

The above interview extract reveals how an occupational category seem to perpetuate class differences among workers through the differences on housing allowances. Most of the Zibulo officials who participated in the qualitative interviews indicated that they were satisfied with the housing allowance and that it gave freedom to do what they want with it without any monitoring. On the other hand, participants within the collective bargaining category expressed unhappiness because they thought the housing allowance was too low. In terms of the broader Zibulo housing policy on housing ownership, survey interview participants indicated high levels of satisfaction because many of them drive from their homes daily and the mine pays the travel costs through housing allowance. The rate paid for the one-way travel is lucrative for some while others also expressed dissatisfaction. They argued that Zibulo must pay the return trip, a position mine management does not agree with it. The mine's management noted that the company cannot pay workers to come to work and still remunerate them at the end of the month. Furthermore, the rate workers paid per kilometre they drive is higher than what other mining companies offer.

Contrastingly, Kolomela mine has had mixed fortunes in terms of worker responses to the houses they have built for them. Some of the workers in the lower bands of Kumba grading system (refer to the appendix) complain that the houses are expensive to maintain (because they are for high income earners) for instance garden and property maintenance; water and electricity is too expensive for them and that they want to own the houses as opposed to renting them. Qualitative interviews reveal that some of the Kolomela employees, especially those within the collective bargaining unit, are unhappy with electricity and water billing. They allege that the local municipality (Tsantsabane) overcharges them and do not come through to take meter reading but rely on estimates. One Production Controller noted the following on water bills:

"It's a challenge...we're only earning so much and understand where people are coming from...the demand is for us Kolomela people to pay water is like we are the only people living in this town because the town existed a long time ago, but we are the ones that got

these metres (prepaid) in our houses why? I stay alone in this house and my wife is at Kathu, but my monthly water bill is between R1400-1500, the bill is too much.”

Some Kolomela employees feel singled out by the local municipality to pay utility bills on the basis that they work at Kolomela and yet their earnings are not high as perceived by the community. Kolomela employees noted that there are instances where a monthly water bill for a person who stays alone is like that of a family of five. This discrepancy for them created discomfort and feeling of unfairness and hence led to some not settling monthly utility bills. For the record, Tsantsabane local municipality has a policy that makes provision for subsidised and free portable water and electricity of certain amounts for unemployed and older local indigenes per month (Tsantsabane Municipality free basic services policy, 2016). Furthermore, a culture of non-payment of utility bills by residents brings another dynamic. In addition to the above, Kolomela employees do not want to pay outstanding water bill debts of which some owe close to R50 000 since 2012 and the current bills. They argue that the mine at some point assisted the Tsantsabane municipality to settle its bulk water debt with Sedibeng Water³⁰ and demanded the mine to settle Kolomela employees’ water debts because they are part of the company as shareholders and employees as noted below:

“We as employees then asked, as you have paid that bill (debt paid by Kolomela to Sedibeng water) can’t you write off our bills... because we are part and parcel of the company. We are contributing there, we are shareholders there. Can’t we at least write off our debts at least we start clean? The mine didn’t agree” (Production Controller, Kolomela)

Disagreements and contestation in terms of the water meter readings and failure by some Kolomela employees to settle individual water bill to Tsantsabane municipality led to accruing of huge water bill debts. The impasse also led the mine to reach into an agreement with Tsantsabane municipality with the installation of electricity and water prepaid meters. Prepaid meters were implemented as a solution, granting Kolomela employees the power to control, and monitor water and electricity consumption. At the time of this study, the mine was capturing data or trends in terms of each workers monthly water consumption and try come with an estimate, compare it with figures from

³⁰ Sedibeng Water was established in 1979 is a statutory water utility responsible for bulk water provision and related activities under the Department of Water and Sanitation in South Africa. Sedibeng operates in the Free State, North West and Northern Cape.

Tsantsabane municipality, and come up with a lasting solution to the impasse. The installation of the prepaid water meters brought mixed feelings as some workers stopped garden maintenance within the houses, they rent from Kolomela mine. This has led to degeneration of vegetation like flowers and lawn that used to be plush and green as employees rationalise water usage.

Some Kolomela employees complained about the amount of money deducted from their monthly salary to housing in terms of the taxing of housing allowance and the actual rental. The quote below provides in an illustration that some mine employees have to deal with:

“The problem is housing tax from the government. Because the house I stay in, I pay R1500 to the company (120 square metres) and I am taxed R2500 to make it R4000. I have not included the bills from the municipality in this figure and when you factor my salary, I am left with nothing. It seems like the government does not look at the salary a person is getting but rather the size of the property...taxing our housing allowance basically means we are paying tax for houses we are not going to own...this is not free housing.” (Plant Official, Kolomela)

In addition to the above, the National Union of Mineworkers (NUM) Kolomela branch leadership encouraged their membership not to pay the outstanding water bills to Tsantsabane municipality because their members were not the property owners but Kolomela mine. Kolomela mine NUM further assert that their position is informed by the fact that the bills/rates are exorbitant, and employees are not happy with them plus the intervention offered by Kolomela mine to the impasse was insufficient. In-group interview with NUM Kolomela leadership, one Comrade (Official 1) reiterated the following:

“...so, as landlords (Kolomela mine) of the houses, they did not do enough. So, we have taken a decision as a particular union, we are not going to pay those bills...The mine pumps water (dewatering from the open pits) and sells it to Sedibeng at a very low rate which in turn sells it to Tsantsabane municipality which in turn is selling it to workers at crazy amounts.” (NUM Official 1)

From the above, NUM Kolomela branch leadership resolution on this matter influenced the non-settlement of water bills by some Kolomela employees. Trade unions within the mining sector have power and its membership listens and acts upon instruction from organised labour. NUM Kolomela also expressed its dissatisfaction with housing and the housing model provided by Kolomela mine. In some instances, the houses we labelled as “fancy houses that we can’t even

afford in terms of ownership...” and demanded for a complete relook at the current housing model by Kolomela mine, Tsantsabane municipality and the National Government. Some Kolomela employees want to own the houses but they cannot afford them due to the supposedly dynamic property market regime in Postmasburg. NUM Kolomela (Official 2) commented the following:

“...sometimes we dream owning houses. We even know we are just guarding these houses. Truly, there is no way we will be able to afford such houses...there is no way as long as the minimum wage is at its level now. Postmasburg seems to have its own prices”

Another participant also raised his worry in terms of lack of housing security tenure in the current housing regime provided by Kolomela mine:

“I am happy and not happy...I would have loved to buy it (the house) but they are not selling it. I really don't know this (model). When I started, it was said in five years' time you can buy it. You must remember we are getting old and our years are passing and buying a house is a big milestone. I don't want to buy a house when I am 40. We have a rental contract; the company must rethink and sell us the houses. We have made them our homes...we are paying rent, but we have to maintain a garden and must look after the house...if they can sell, it will be a good thing” (NUM Official 2)

In an interview with an official within the housing section, the Postmasburg property market is described as being expensive and unstable. The mine official acknowledged that the sudden emergence of a market and shortage of housing itself spiked properties prices high in Postmasburg. Property market is expensive (to buy or rent). An official responsible for housing at Kolomela noted the following:

“The thing that is not helping us in Postmasburg is that houses are very expensive. There is not a housing market for the low-income employees. There are no small houses available to purchase and also affordable. There are no houses on sale in the regions of R250 000-R380 000 to R500 000. Most of the houses are overpriced and range from R1.2 million to R3.5 million six or seven times more than their expected price. It's a question of demand and supply. Rental prices are also very high for instance on the 160 houses we are renting from private owners for Kolomela employees, we are paying between R12 000-R24 000 per month. The kind of houses and monthly rental we are paying is five to six times higher than what one would pay in other centres like Kimberley, Upington or in Gauteng” (Kolomela Housing officer)

The above quote depicts the complexities of demand and supply that are impacting on the kind of housing provision Kolomela mine would want to provide its labour force and also how it scuppers Kolomela mines employees' dreams for home ownership. The housing need and tenure of ownership is complicated given the fact that Kolomela is relatively new mine with a lot of migrant labour mainly from within the provinces (declining mining towns) and from other mining provinces like Gauteng and North West. Some of the employees said they would rather build or have already built their houses at their places of origin. The challenge is for employees who are from Postmasburg and surrounding areas who want to settle in Postmasburg and want to buy houses. In the same fashion, many Kolomela employees do not qualify for bank loans and bonds to buy or build a house. This brings into sharp focus the question of minimum wage, mining companies Social Labour Plans and Mining Charter³¹ and the role of agencies responsible for housing finance and development in South Africa like for instance Housing Development Agency³² (HDA). Currently, the South African government has initiated a new project 'Human settlements strategy for labour sending areas that seeks to address housing needs of migrant mineworkers in mining towns and the relevant labour sending areas.'³³ The strategy was initiated in wake of the Marikana massacre in 2012 and a decision was taken not just to develop housing needs of mineworkers in the host mining towns but also to improve housing migrant mineworkers' original homes (HAD, 2018 see also Mining Charter, 2010; 2016; Presidential Framework Agreement for Sustainable mining Industry, 2013³⁴).

Some residents of Postmasburg are of the view that houses in Boichoko, Postdene and Airfield are 'sanitised' and separated from broader communities. Concerned residents are of the view that, this separation and lack of integration has created animosity and distance between Kolomela workers and local residents. Residents feel deprived and excluded from mine-funded housing and are of the view that houses built by Kolomela mine should have been for them. There is a sense of

³¹Mining Charter (2010) is a legal document that gives effect to section 100 (2) (a) of the Minerals and Petroleum Resources Development Act (MPRDA No 49 Act of 2008) and provides framework of the transformation of the mining and minerals of South Africa. There is another amended Mining Charter 2016 that is under review

³²The Housing Development Agency is a national public development agency with a mandate to promote sustainable communities through provision of suitable land and buildings for development of human settlements. HDA.2018. Human settlements strategy for labour sending areas. Riviera: HDA

³³Labour sending area refers to areas within which majority of migrant mineworkers originate from in this instance Eastern Cape, Mpumalanga, KwaZulu-Natal and Limpopo.

³⁴<http://www.thepresidency.gov.za/speeches/framework-agreement-sustainable-mining-industry-entered-organised-labour%2C-organised>

entitlement and loss of opportunity for them to have been residing in some of the three suburbs (Boichoko, Postdene and Airfield) as highlighted below:

“...because you see where those people [mineworkers] live, its enclaves, they live in enclaves of those mining communities. They are on the periphery of the community. If you go into that space [where mine houses are located], it is sanitised spaces because...you do not find a spaza shop...you do not find a church...you do not find a pub. In terms of ...spatial arrangements, they did not plan and develop those spaces to look like the rest of the community. Because where I stay...if I go out, I find a spaza³⁵...a church sometimes a mokhukhu³⁶ (corrugated iron sheet or cheap plastic or wood housing structure), sometimes I find people in open space praying under a tree. But you go into those mine communities, the empty spaces have been fenced off because the mine was afraid people would occupy and invade those spaces. So, they fenced it off and it's not a real community, it's a sanitised environment...and that is the problem that keeps those people not integrated into the rest of the community.” (Pastor, Postmasburg)

The above view displays some ‘local’ Postmasburg residents’ feelings of exclusion and disappointment. They feel excluded because the spatial design is not integrative and misses out elements that constitute what is a community like spaza shops, church buildings and other informal structures to them. Consequently, Kolomela mine workers residing in those ‘enclaves or sanitised spaces’ are not seen as part of the community. Rather, they are in some instances accused of stealing ‘local’ Postmasburg residents’ jobs and houses as was the case around 2012-2014 community protests. However, some community leaders were quick to point out that inasmuch as local communities are disappointed in terms of unfulfilled expectations, they are not violent to Kolomela mine employees. Local aggrieved black business owners often organise these protests and hire unemployed youths to protest against Kolomela mine. A local ward councillor also reiterated that most of the infrastructure development that Kolomela mine has undertaken around Postmasburg is for its own employees as note below:

“So, most of the projects from the Integrated Development Plans (IDPs) to the Social Labour Plans (SLPs) are also problematic because what the mine (Kolomela) did, they built houses and for example if there is a water problem because their employees are affected...they will put that problem on their SLP but then it's not for the broader

³⁵Spaza is a small tuck-shop often found on a residential property in South African townships. Spaza shops break bulk groceries and sell them in smaller quantity.

³⁶Mokhukhu is a corrugated iron sheet/wood structure.

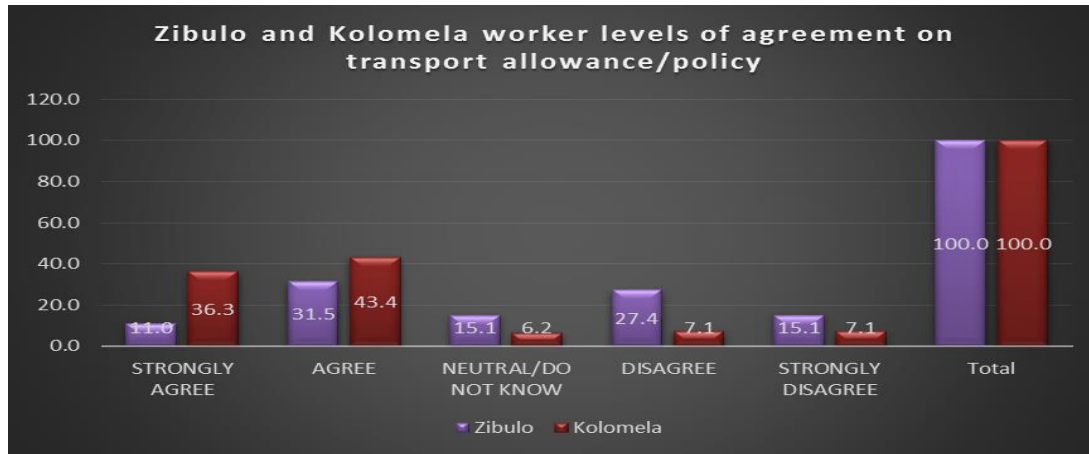
community. It has to serve their own employees. Even with the roads. If you look at the roads, most nice ones are in places where their workers stay...water reservoir in Airfield town but that reservoir they will claim it is a community project, but reservoir was built to serve their employees. So that is the things they do...there is selective development...”
(Ward Councillor, Postmasburg)

On the other hand, Kolomela mine asserts that increased security, closure of open spaces and restriction of informal structures to protect its workers’ property after they complained of increased house burglaries. Furthermore, in a conversation with a senior mine management official, it was revealed that Kolomela mine built houses that were integrative as opposed to starting a completely new settlement like what other mines have done typical of apartheid spatial engineering. The fact that Kolomela houses are on the edges of different suburbs is an outcome of land availed by the municipality. Kolomela mine alleges that absence of informal structures and businesses greatly assists in terms of order and control in times of community protests among other things. On issues concerning service delivery, Kolomela mine is adamant that it is the responsibility of the municipality to execute such.

6.2.3. Transport policy at Kolomela and Zibulo mines

Kolomela mine provides subsidised transport for all qualifying permanent employees through a bus system as opposed to Zibulo colliery that only makes provision of transport allowance calculated on Rand per kilometre from home to work. In the survey, participating workers at Zibulo and Kolomela were asked: Qn.36 Do you agree or disagree with the following statement: The transport/commuting allowance/subsidy meets my transport needs from home to work on a daily basis? The table below reflect survey results of Q36 (Fig. 1.15)

Fig 1.15 Satisfaction levels on transport allowance at Zibulo and Kolomela mines



The survey results shown in the graph above show that at Zibulo, a combined 42.5% of mineworkers who participated in the survey, indicated that they Strongly Agreed and Agree with the fact that Zibulo's transport allowance/policy satisfied their transport needs on a daily basis whereas 79.7% at Kolomela chose similar options. Comparatively, more employees at Kolomela are satisfied with the mine's transport policy as opposed to Zibulo where it is less than half of the population sample. Qualitative interview responses further confirm that most Kolomela employees are satisfied with the bus system where they pay R25 per month for less than 40-kilometre distance. This is a significant shift in terms of the past where new mining companies are making provision for transport for mineworkers to and from home to work through a subsidised bus system or transport allowance. Kolomela survey results show an appreciation of the transport allowance. Findings from qualitative interviews with workers at Zibulo show that some of them opt to drive from their own homes further away from the mine in order to increase the distance and receive more money. Transport allowance calculated per kilometre has opened an opportunity for extra income for Zibulo employees. Few Zibulo employees reside in Phola (30% of the workforce), the nearest labour sending township. Most of the mineworker's travel from suburbs scattered around Witbank, Kriel, Leslie, Johannesburg, Springs, Middleburg and Pretoria on a daily basis.

6.2.4. Migrant labour and the politics of belonging: a comparison between Postmasburg and Ogies

This section seeks to demonstrate how the question of identity is modified and heightened by those who claim to own the space, place and resources in deciding who is included and excluded from accessing certain services and resources in Postmasburg in the Northern Cape. This identity political project follows a particular history in terms of the origins of Coloured and Tswana speaking residents and limited economic opportunities located in the logic of unequal development. These two factors seem to precipitate a sense of entitlement leading to inclusion and exclusion of those deemed as insiders and outsiders. Findings also show that apartheid social-spatial engineering is still embedded in some communities in South Africa as evidenced by inter-black racism and coloured (or racial) hierarchies. Contrastingly, Ogies residents seem to differ with Postmasburg residents. Rather, Ogies residents collectively advocate for equal opportunities in terms of employment of youths and preferential procurement³⁷ opportunities for local entrepreneurs. Phola is within a touching distance from major economic centres for instance Witbank, Pretoria and Johannesburg and surrounded by numerous mines and power generating stations. I explore these issues through descriptions on migrant labour, procurement, socio-economic life and local governance. However, both in Phola/Ogies and Postmasburg, protests are a common feature where tenderpreneurs³⁸ use unemployed youths to voice their unhappiness to Eskom's Kusile and Kolomela mine.

6.2.5. Impact of mining: Socio-economic and environmental life

The presence of a new mining company has a tendency of partially or completely reconfiguring the economic and social activities of a place, in this case Postmasburg. Before the establishment of Kolomela mine, Postmasburg was a relatively quiet semi-rural town with a single iron ore mine (Beeshoek North and South) and a few supporting industries. Goods and services industry dominated the local industry while mining played second fiddle. However, the mining boom driven by Kolomela and Sedibeng mines aided rapid socio-economic transformation with positive and

³⁷ See Preferential Procurement Policy Framework Act, 2000 (Act No.5 of 2000)

³⁸ Tenderpreneurs is a term specific to South Africa that refers to Black South Africans with business operations often politically connected who specialise, bid and acquire government tenders as part of Black Economic Empowerment. Government tenders are used as a quick way to economic enrichment. It has become a quick route to amass wealth and source of corruption and poor workmanship for the politically connected and elite.

negative results. A local Pastor and Manager of a Youth Non-Governmental Organisation noted the following:

“...mining has always been here in Tsantsabane municipal area, it’s not a new thing...but Kolomela came in early 2008. There was a sudden metamorphosis. They really came and changed the face of the community. If Kumba (Holding company of Kolomela) had not come, it would [Postmasburg] still be smaller ‘nnyana’ unknown rural town...They came and changed everything in the community, the face, they kind of gave a face lift ...”
(Pastor/Manager of a Youth NGO, Postmasburg)

The Ward Councillor made a similar observation that:

“...positive is obvious like the economic growth we have seen so far but can’t quantify it as we have not done any studies to see these things...we didn’t have a shopping complex, we didn’t have the houses (Kolomela mine houses) here...population wise there is an increase in population ...and people are also getting jobs” (Ward Councillor, Postmasburg)

The presence of Kolomela mine and other related economic activities have transformed Postmasburg into a lively but slow town. In terms of the town’s physical appearance, the aesthetics compared to the Kolomela mine and older Postmasburg houses signify a huge difference. The physical difference is glaring when entering the town from Kathu through R325 road on the left-hand side. Beeshoek mine and Transnet have built houses for their employees, and they are dotted in and around different suburbs. This has given a physical uplift to the town. Kolomela mine participates in infrastructure upgrading and development in Postmasburg within the health, education and social services sectors. These visible physical changes in some ways have made some residents suggest that Tsantsabane local municipality is better run by Kolomela mine as opposed to the elected Councillors and officials due to the mine’s visibility on infrastructure development projects. I find this problematic and worrying for reasons to be discussed in the analysis section. In addition, in the past two years, the town has witnessed the setting up of massive solar power harvesting plants Jasper and Lesedi just outside Postmasburg.

However, the increased mining activities in Postmasburg has resulted in unintended consequences in terms of social ills like alcohol and substance abuse, prostitution, rise in petty crime and gangs. It has also put pressure on service delivery leading to shortage of housing and strain on water and

sewerage reticulation, land invasions leading to informal settlements and general youth unemployment. Furthermore, most residents are experiencing increased cost of living and for those unemployed or earning meagre wages; food prices have become unbearable for them. Increased standards of living have generated unhappiness and mixed feelings in terms of economic activities (Kolomela mine in particular) in Postmasburg as explained by one participant:

“You will need to remember now if a mine comes the living standard increases and the prices (food, rent and everything) go up but you must remember that it becomes an expensive place to live...if you are a pensioner, you are affected by this. So indirectly life becomes tougher for unemployed people...for pensioners because now the Shoprites’ they price according to the area...restaurants...Guesthouses according to the area, jumping castles for our children...are priced according to the local economy of the town not knowing it’s a few that live at that level and as a result the majority are excluded but they feel the brunt of the unintended consequences...and when you speak to people, these are the things causing unhappiness...” (Pastor and Youth NGO manager, Postmasburg)

Local residents attribute spikes in social ills to increased cash circulation economy and unemployment. Qualitative interview data reveals that Postmasburg residents are of the view that the economic boom, coupled with increased population is promoting alcohol and substance abuse and prostitution. Research participants note that before the arrival of Kolomela mine and its related economic activities, there was little, or no substance abuse and prostitution was non-existent. However, the arrival of single migrant labour in terms of those employed by the mines and related industries including truck drivers with cash to spend opened up a conducive environment for prostitution to flourish. Young local girls and older women have joined the trade of prostitution to make quick income. During the data collection stage, as I was doing some observation one month-end night, was shocked to find the hive of activity at one shopping centre and in the Central Business District. During normal days, prostitutes would be found at four ways stop involving R325 and R385 roads where most truck drivers pass through either from Kathu or Kimberley to the mines or on their way back. It is a strategic location for the prostitutes because they get picked, conduct transactional sex in the nearby bushes while at same time interested local residents from the townships or town suburbs can easily access them. However, on month-ends, as is what I was told and observed, the number of female prostitutes increases with some coming from the Free State province, joining forces with local women, spreading themselves as far as into the CBD. I saw them line up in the streets at first thinking they were waiting for transport to take them home.

Some stood a few meters from the banks Automated Teller Machines (ATMs). ‘Locals’ accuse the mining companies, single migrant men and increased cash circulation flaws as causes for increased prostitution.

In addition to the above, in an interview with a participant from South African National Council on Alcoholism and Drug Dependence (SANCA) Postmasburg noted the following:

“...but has (mining) contributed to a lot of social ills like substance abuse, issues of domestic violence...I think like they say there is no recreational facilities in Postmasburg. When they come here (migrant workers), they start drinking (alcohol) and home is far...there is nothing else except to go to taverns...Taverns are the only places to socialise. They used to say when the mines opened, many people got a lot of money and they did not know what to do with the money. So, they ended up spending on anything and ended up getting involved into substances... [mining and economic boom] you know when there are opportunities everything develops...it brought all these things because now they were like, ‘here there is life’, and everybody wanted to be here. Drug dealers wanted to be here to market their drugs and get customers. Prostitution started at that time...there was no prostitution before...” (SANCA Manager, Postmasburg)

Also, the local Pastor reiterated similar sentiments to those of the above noting that ‘labour imports’ are directly and indirectly associated with some of the social ills in Postmasburg like prostitution, drug and substance abuse. It is the position of Postmasburg residents that many unemployed youths whose jobs have been taken away by ‘labour imports’ resort to gangsterism, robberies and alcohol and substance abuse. The quote below captures such:

“...a lot of gangster activity which is a huge issue among young people as well...as local young people that can’t access local job market and opportunities and are hooked into drugs now they resort and organise into criminal groupings and resort to violent robberies, burglaries...makes Postmasburg unsafe area at night...” (Manager Youth NGO, Postmasburg)

The above qualitative excerpts reveal that the presence of Kolomela mine has had intended and unintended consequences in Postmasburg. Research data seem to point toward more harm than good as consequent of Kolomela operations in the town resulting in disappointment and unfulfilled expectations among the residents.

Contrastingly, Ogies/Phola has a different socio-economic dynamic. Research results do not show anything of significance in terms of social ills due to the impact of mining. Given the fact that Phola is a typical township that grew as a response to mining and power generation activities, change has been steady. The township is experiencing population growth hence pressure on infrastructure and housing as evidenced by development of informal settlements. Just like Postmasburg, Phola residents consume alcohol as evidenced by cleavages of mine workers (based on mining company they work for) who park their fancy cars at specific pubs. Alcohol abuse did not emerge during interviews or conversations with interview participants. Nonetheless, mineworkers still consume a lot of alcohol and this can be linked to absenteeism or their reporting for duty at the mine drunk (use of breathalyser). Mineworkers spend their income at different spaces of consumption like Highveld shopping mall in Witbank and other places in Pretoria or Johannesburg. Evidence from qualitative interviews shows that residents who have resided in Phola for a while acknowledge the changes that have taken place in the township due to increased mining activities. Increased mining activities has attracted new people from different cultures and geographical locations, which is said to have created more problems. They do not however, blame such on residents from outside Phola/Ogies as is the case of Postmasburg but rather, they advocate for improve mechanisms and controls to deal with new challenges from relevant authorities. This therefore, signifies a different approach by Phola residents in comparison to Postmasburg residents on the use of identity politics. An interview participant noted the following:

As the population has been growing, community needs have increased creating more problems and opportunities. As a community, we have experienced negative changes due to the fact that we are from different far and near places and cultures caused by mushrooming of mines (Witbank area has over 50 coal mines) that have not really changed the outlook of this community...security and safety systems have to be improved to address the challenge of crime” (Pastor and Youth advisor, Phola)

The issue of noise and air pollution was audible and visible during my stay in Phola. Witbank coalfields have worst air pollution levels in the world (Bench Marks Foundation, 2014). Coal mining operations, related activities, and thermal power stations produce significant coal dust and dirty air. Early mornings in Phola are characterised by a thick and heavy smell from Kendal power station and when combined with dust from surrounding open cast mines, they form a thick blanket over Phola. This was confirmed by Albers (2011) who found out that “...greatest daily exposure

to toxic dust and smoke in households in Middleburg and Witbank occur between 5:00 and 9:00 am and 16:30 and 21:00” (Bench Marks Foundation, 2014). The odour made breathing difficult and can potentially cause problems such as pneumoconiosis or black lung disease (Goldblatt, 2002). Phola is located next to more than three open cast coal operations across the N12 highway mainly Zibulo (Anglo American Inyosi Coal), Klipspruit (South 32), Khanyisa (Wescoal) and Vlakfontein (African Exploration Mining and Finance Corporation) and Kendal thermal power station. A municipal official from Emalahleni municipality commented that:

“Mines can still do more, plant trees. There is a lot of dust especially around open pits and burning coal. The air quality is messed up. In this regard I don’t think they are doing enough. In a place like this they ought to plant a lot of trees for oxygen and to counter dust and other impurities...” (Emalahleni Municipal Official)

In light of the above there is a concern in terms of environmental management in terms of air quality that is under threat from mining activities. In an area like Ogies/Phola one would have expected to see a dense network of forestry as a mechanism to improve air quality. However, such is none existent. Therefore, mining activities of Zibulo and other operations have negatively impacted on the air quality and the general environment of Ogies/Phola.

6.2.6. Contestations on labour hiring and procurement preferences

Findings reveal general unhappiness among Postmasburg residents in terms of labour hiring practices of Kolomela mine. Postmasburg residents accused the mine of hiring labour from outside, Postmasburg leaving local youths jobless. Formal and informal conversations with selected qualitative interview participants reveal some degree of disappointment and frustration among the unemployed ‘locals’ who feel that ‘labour imports’ are stealing their jobs. They specifically point out their opposition and dislike of the hiring of Coloured mine workers from Namaqualand. The following interview extracts from a local Pastor and a ward Councillor reveal such:

“...local youth are left behind but there is this practice of labour import from mines in the area especially from Namaqualand region from mines that they say have closed down there. The recruitment practice is they are heavily relying on areas where they have closed down to import labour...which leaves young people in the area unemployed and also disgruntled...” (Local Pastor, Postmasburg)

When the participants were asked for their views on the relationship between Kolomela mine and its broader impact in the community, the question of what is deemed as unfair hiring practices dominated their responses. A similar narrative was reiterated by another participant who noted that Kolomela mine's labour hiring practices are not good for Postmasburg. It is alleged that the hiring of people who are not 'locals' has left many local residents unemployed, yet they are supposed to be the direct beneficiaries of the fruits of minerals within Tsantsabane municipal area. He underscored the following:

"...most of the people working at the mine are not originally from this municipal area...and mines abuse the Mining Charter. You will find a situation say someone from Namaqualand which is 800km from here working here because he is local...all people are complaining. So, in terms of employment ...most of these people are from outside, they are not from here. In terms of employment at the mine on a monthly basis they will tell you that they appointed these people in their newsletter*(Digging Deeper³⁹) and if you look at it you see that most of them are not from here. Even with their learnership programs, I told them they took pictures (new learnerships recruits) and put them in the local newspaper that we can't relate with them. The faces we see are not originally from here (Postmasburg)..." (Ward Councillor, Postmasburg)

The idea of 'their jobs' being stolen is seem to be rooted in the idea of entitlement. Qualitative interviews data shows that Postmasburg residents use identity as markers in the boundary making process. This project of belonging is a strategy to defend in this case jobs and resources from individual and groups they think do not belong to Postmasburg. In doing so, they have created an 'us' and 'them' through the idea of who is local and not. During the interviews, participants explained the criteria they use to define local:

"Yeah that is the contested thing here...that's the debate the mine (Kolomela mine) is running away from...because that is what they would ask, 'who is local? For them (mine), local is...between 50 to 100km radius. It is local for them. For the community, who is local is people they know and grew up with and their minds are, 'you are staying in Sibidi street...you are the Morapedi's (family name) etc...I know your grandmother, we grew up together and that is for the family. But corporates and institutions can't think like that because they don't know how you have been growing up and where...the other thing that they have said particularly regarding employment...check the curriculum vitae scrutinise

³⁹ Digging Deeper is Kolomela's monthly magazine produced by the mine. It focuses on production, health and safety, upcoming and past campaign programs and other activities within the mine.

the high schools to see where you matriculated (high school graduated). But that is also flawed because my son spent most of his schooling in Gauteng because I was staying there ...and came the mining boom I said Ok I can return home now...I spent first 17 years of my life here and came back after 20 years, so am I not local? It gets complicated because whenever we are in meetings the debate is ‘who is local?’ (Manager Youth NGO, Postmasburg)

In light of the above, a ward councillor offered a comment that reinforces the idea of an individual’s place of birth being a determinant of whether one is local or not local:

“...local in terms of the mines it’s Northern Cape and localisation is anywhere within a radius of 100km...we reject these definitions (based on Dept. of Labour & Department of Mineral Resources). We do not like these terms, local, localisation, BEE and empowerment. When we talk of local we are talking about original inhabitants of Tsantsabane and this is a very small town. For example, I stay in Postdene and when I walk to Boichoko and see an unfamiliar face, I will immediately know this man is not from around here...in Afrikaans we call him ‘ongewoon’⁴⁰ meaning uncommon...Even if the parents were born here and moved to Gauteng and then come back with their kids...the fact is their kids were not born here and they cannot get jobs in the mines...”
(Ward Councillor, Postmasburg)

Social relations and space are used to construct boundaries around identity and ultimately use such to determine who is ‘us’ and ‘them’. In other words, a person’s place of birth, social relations (who knows you) and school of matriculation are used to determine who qualifies to be considered for employment, access to resources and to be deemed as a Postmasburg resident. As shown in the above quote, the criteria run into difficulties because of the fact that people are forever mobile as they seek opportunities and violates the prescripts of the Constitution of the Republic of South Africa. Kolomela mine through its Socio-Economic Assessment Toolbox report 2015 also points to the problematic nature of Tsantsabane Local Municipality residents’ informal definition of ‘local’. This informal definition by community members contradicts the legal definition in the MPRDA 2008 where local refers to ‘all South African citizens’ (Kumba Iron Ore, 2014). In addition to the above, informal interviews reveal that besides an individual’s place of birth, school and social relations, Postmasburg residents despise Coloureds from Namaqualand (800km) away from Postmasburg because they are close to Western Cape and bring bad habits of the big cities

⁴⁰Ongewoon an Afrikaans shorthand for uncommon.

(Cape Town). It is alleged the increased alcohol and substance abuse (especially drugs) has been caused by people from Namaqualand due to their close proximity to Cape Town in the Western Cape Province yet geographically they are in the Northern Cape. This evidenced by the following interview extract with a Tsantsabane municipality bureaucrat:

“So, I see you (the mine) are appointing more people from Namaqualand...those people are closer to the big city than us here...the social ills are more prevalent there than here. Someone there from Namaqualand and I can’t say everyone or all but some person, you know, was exposed to drugs in some way or the other and coming here teaching a fellow colleague and expose him/her to drugs and it has spread...in the past we never had prostitutes but today, look at them on the street, it’s a mess” (Tsantsabane Municipal official, Postmasburg)

Furthermore, when asked on how Postmasburg residents are able to distinguish local and non-local Coloured individuals, they cited different Afrikaans dialects, complexion and facial appearance. Adding to the above sentiments of the Municipal official and how the identity boundary project is executed, the following was noted by a local NGO Youth Activist:

“A Coloured from here and one from Namaqualand are two different people because the one that lives in Namaqualand is having a Western Cape kind of mind set. That mind-set is there is Black people and Coloured people. So, he comes here, and he finds Coloured people speaking SeTswana and he is not like that and that differentiates them. So, the Coloured people from here... [see those from Namaqualand] as coming to steal their jobs and they also make remarks that people from here (Postmasburg) don’t want to work and...are lazy.”

In terms of the process of the physical identification criteria, the participant highlighted the following:

“Language cannot be a unifier because like I said, the major labour sending area for Anglo American is Namaqualand. Now Namaqualand people in terms of dialect in Afrikaans, the way we speak Afrikaans here is different. In terms of outward appearance, they are lighter in appearance and us the Coloured people from the Northern Cape, when we see them, we know they are from the Namaqualand.” (Manager Youth NGO, Postmasburg).

Besides the idea of ‘us’ and ‘them’ in seeking to influence hiring practices of Kolomela mine, a local organisation known as Tsantsabane Black Business Chamber (TBBC) among others, pushes

an agenda for small businesses to play a prominent role in securing procurement contracts at Kolomela mine. TBBC according to its members seeks to look out for Small Medium Enterprises that are 'local' Black owned to get business with mining companies, broader private sector and government departments in Postmasburg. TBBC complained that mining companies specifically Kolomela mine has not done anything significant in Postmasburg except building houses for its employees. Furthermore, they allege that the mine tends to make bigger donations outside Postmasburg but within the province and cited examples of a big hospital funded and built by Kolomela in Upington and other numerous donations in Kimberley. TBBC feels like these major centres are already developed and more resources should be invested in Postmasburg. They also accuse the mining company of not promoting local small black businesses. They allege that Kolomela mines supply chain in terms of procurement is dominated by white owned small and big companies from outside Postmasburg who get bigger sustainable contracts as noted in the interview extract below:

“The mine [Kolomela mine] only gives business to contracting companies from outside i.e. your Afrilink, Afriline...for us we want to be involved in the entire production process up to the end product...what we now want is sustainability. We want to be inside the value chain of the mine. So we would have to be part of load and haul inside the mine...if you look during the construction phase, iron ore prices dropped and they just dropped some projects but those equipment companies like Barloworld, Liebherr and Komatsu will be forever in the mine because they do work the mine does on a daily basis and those are the kind of projects we looking for the sustainability of the community...there are barriers to getting such projects and if we are honest about this, we should speak about the whites and their relationships with the mines ” (TBBC Executive committee member, Postmasburg)

TBBC further argues that the mine uses technical issues like qualifications, experience etc. to deliberately eliminate them from getting higher paying contracts say from R600 000 and above. It is argued by TBBC they are tired of R100 000 small local projects and want more in order to grow their businesses. However, this claim and complaint is dismissed by other local activists in Postmasburg who argue that TBBC's narrow mandate is to create wealthy black businesses in the Tsantsabane municipal area. An alleged failure by Kolomela mine to heed the call by TBBC to grant their members bigger tenders and integrate them into procurement chain has resulted in rising tensions and protests just out the mine's premises. One of the major contentious issues has been

the question of who is local and not in terms of companies awarded contracts by Kolomela. The interview extracts below reveal the contestations and sticking points on the definition of who is local between Kolomela mine and members of TBBC:

“What is local in the mining field? Local is South Africa. If Komatsu comes from Johannesburg here...it’s local. So, for us here there is nothing we can do because in terms of regulations and the laws of South Africa its local...what we ask is that those groups or companies must prepare us to take over...but these guys are very reluctant” (TBBC Executive committee member, Postmasburg).

An equally unimpressed local ward councillor was adamant that as part of TBBC and Postmasburg residents, they reject such definitions as the immediate affected and host communities of Kolomela. He notes that language like local, localisation (100km radius), Black Economic Empowerment they do not want to hear about but rather want Black businesses rooted in Postmasburg to be given preference when it comes to contracts. TBBC notes that where the mine does well, they complement and where it does wrong, they confront. Thus, Kolomela mine and TBBC specifically relations are said to be both complimentary and confrontational. Confrontations emanate from the contestations on the definitions of who is local and not in terms of labour hiring and company, contracts offered by Kolomela mine. This has resulted in inclusion and exclusionary identity projects in Postmasburg by those who carry power. In response to the question of local businesses not being given opportunities, evidence from interviews with Kolomela employees at the Public Affairs complex in the Small Business Development hub office in Postmasburg town reveal that the mine has come up with various interventions to promote youth and enterprise development among other things. The Kumba Iron Ore Kolomela SEAT report (2014: 74) mentions the challenge of ‘unmet expectations for economic empowerment through mining procurement’ in Tsantsabane Local Municipality. The report points toward the “misalignment between local business owners’ high expectations for rapid economic transformation and instant wealth creation through local procurement” and Kolomela mine’s “...long term view especially through development and capacity building of suppliers as prerequisite for economic transformation” (Kumba Iron Ore, 2014: 74). This misalignment has generated challenges for Kolomela mine because African Black businesses owners have high expectations that have not been met in a space that is dominated by well-established White owned businesses.

Furthermore, “localised businesses generally have difficulty to compete with well-established, regional or national suppliers in terms of quality, price and range of services and goods on offer” (Kumba Iron Ore, 2014: 74). As an intervention to address the problem and compliance to the Mining Charter, Kolomela mine established the Preferential Procurement Plan (PPP) which resulted in increased Black Economic Empowerment (BEE) discretionary spending for instance increased from 11.6% in 2012 to 25% in 2014 (Kumba Iron Ore, 2014). Kolomela mine’s expenditure on localised suppliers was R860 million in 2014 alone (Kumba Iron Ore, 2014). Through the mines Social Management Plan (SMP), Kolomela has streamlined the PPP among other things by for instance Kumba Iron Ore Supplier Development Programme (assignment of specialised mentors who work closely with selected entrepreneurs to unlock their business potential); linking Anglo Zimele Small Business Development Centre (Hub) beneficiaries with Kolomela mine supply chain and Department of Trade and Industry; participate in feasibility studies related to localised SMME’s and participate in engagement meetings with business and Local Economic Development forums (Kumba Iron Ore, 2014). Despite all these interventions, local African Black business owners are not convinced and hence want more.

In Ogies, Zibulo colliery face similar challenges to Kolomela mine. Parallels can be drawn between the towns and host communities in terms of how business owners seek to capitalise on mining related projects and consequently dividing the communities. As mentioned earlier, the Highveld region in Mpumalanga is home to many collieries (small, medium and large scale). It also means increased business and employment opportunities for local residents. The presence of numerous mining related actors in and around Ogies for instance coal mining (Exxaro, African Rainbow Minerals, Anglo Coal Nyosi, South 32 formerly BHP Billiton among others and power generation (Kendal and Kusile both owned by ESKOM) seem to exonerate Zibulo colliery from sustained pressure from local communities. It is within this set up that complains, and protests intersect around power generation utilities and mining operations. The conflicts include issues around alleged non-hiring of farm dwellers near Zibulo colliery, Phola residents and politics of tenderpreneurs who seek for more individual enrichment. On the question of farm dwellers, a Zibulo mine official indicated that the group marched into Zibulo property demanding development on their farm dwellings and jobs. They also alleged that the mine only focused on Phola and ignored them. In response to the demands, a mine official noted the following:

“The issue of the surrounding farms is a tricky one...some farm dwellers at the neighbouring mines have been there for a while. The problem is when they get fired by a farmer, they don’t want to leave, and the farmer cannot evict them because of their constitutional rights. So, they continue staying doing nothing. When Matla (Exxaro) bought land on a farm on the east south of Zibulo, they paid farm dwellers and never moved them...Now these are the people who came and made demands and claims...In response, I told them to follow the set procedures, but they refused and threatened to go to High Court. They did go to High court but lost their case... on developing areas they stay on the farms, I told them it was the responsibility of farm owners as it was private property and if they want help should relocate to local townships. On the question of employment, we told them they can only be hired if they reside in surrounding townships. The mines have a gentlemen’s agreement at the request of surrounding farmers not to hire their labourers. They have to quit work first and vacate from the farm (Zibulo Mine official).

Furthermore, like Postmasburg communities, Ogies community members advocate for sustainable programmes that promote enterprise development. Community activists are worried about the legacy mining operations will leave behind when they have exhausted coal reserves, thus believe in the creation of a business environment that enables the development and sustainability of small businesses that can either be linked to the mine or the broader sector in general. This sentiment was expressed by one of the community activists who commented that:

“We have young people that are unemployed hence we saying we want sustainable development in terms of enterprise development that promotes small businesses and skill development. Mushrooming of mines keeps on attracting people from different places and we now have so much demand for them to be absorbed by mining activities but remember mines cannot employ everyone...we want a sustainable legacy for all Phola and Ogies inhabitants...give contracts to those SME’s and grow the local economy”
(Public Liaison officer, Postmasburg)

On the question of business opportunities, Phola local business owners thrive on tender contracts from government related projects. The Broad Based Black Economic Empowerment policy thrives in these spaces. The Kusile thermal power station construction was seen by many as an opportunity to get involved in Black empowerment while some saw it as quick route to riches. They are often called tenderpreneurers. The process of awarding and payment of tender contracts contested and sometimes violent especially for those who feel aggrieved. This has been the case for some Ogies

based tenderpreneurs with contracts with Eskom's Kusile. Whenever they are not happy with Eskom (for instance late payments, not being awarded a tender or non-hiring of Phola residents) they are accused of hiring unemployed youths to block two main entrance and exit roads of Phola and bar workers working at Kusile going to work as shown below:

“... in terms of hiring, most of the people who are working at the mine both permanent and contract are from Phola. Some are hired by surrounding mines, Power stations (Kendal and Kusile) and supporting contracted companies. We all came from different villages and towns to look for better opportunities and over time Phola has increased in population and size...there was an issue for instance with Eskom in terms of Kusile to balance their recruitment policy. As a host community we also asked to be considered as opposed to them only taking people from Witbank and far...it has been addressed. It's only business tender people who still create problems when not happy...They pay unemployed youths and barricade roads barring people who work at Kusile from going to work” (Phola resident & miner)

Similar to challenges bedevilling Postmasburg, a Zibulo's mine official who works with communities, noted that, Ogies community members want more business opportunities with the mine. However, projects often get stalled by conflicts among tender interested business owners. These tenderpreneurs operate on a winner takes all and hate each other. In instances where for example they are asked to form a consortium and get a contract to carry out work they would rather form alliances with business owners from outside the community i.e. Nelspruit. These divisions further flow into numerous community forums on different aspects that seek dialogue with mining companies and make it difficult for mines to decide, scope and carry out projects. As remedy, Zibulo now engages directly with Emalahleni unit manager for Ogies and local Phola councillors when it comes to projects and community development. The difference between Phola and Postmasburg communities in terms of business opportunities is the absence of the use of politics of belonging in terms of who is local and not in Phola whereas in Postmasburg it is rampant. Nonetheless, small Black business owners who want quick enrichment through projects funded by the mining companies confront mining companies.

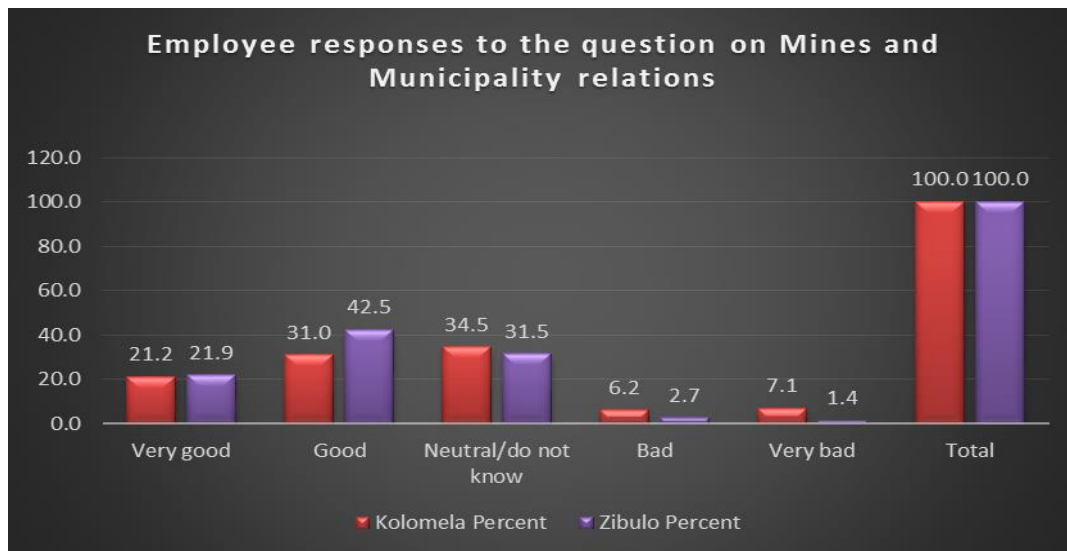
6.2.7. Service delivery and mining companies' responses

The relationship between a local host municipality and mining companies (private sector) is important in order to create an enabling sustainable business environment. Local authorities also

play an important regulatory function on behalf of communities (Postmasburg and Ogies). Likewise, mining companies like Kolomela and Zibulo through various pieces of legislation and policies like Social Labour Plans and Corporate Social Investment attempt to improve local communities in different ways based on Spatial Development Plans and Integrated Development Plans of local municipal area. Anglo American has developed toolkit that all its operations make use of in terms of how it carries out business with different stakeholders. The Socio-Economic Assessment Toolkit (SEAT), "...is a framework that Anglo American operations use to manage mining impacts, socio-economic issues, community relations, stakeholder engagement, and sustainable development" (Kumba Iron Ore, 2014). Therefore, healthy relations can result in realisation of betterment of lives and an enabling business operating environment. In this section in examining relations between local host municipalities and the mine companies understand, reference is made to SEAT, SLPs, SDP, IDP, CSI and other regulatory frameworks like the Mining Charter.

Tsantsabane local municipal area within which Postmasburg is located has a healthy relationship with Kumba's Kolomela mine as evidenced by information from qualitative interviews and survey data results. Likewise, a similar trend was observed with Zibulo and Emalahleni municipality. The bar graph below shows (Fig 1.16) survey interview responses by Kolomela and Zibulo employees who participated in the survey.

Fig 1.16 Frequency results of Q44 on how respondents described the relationship between the mine and the local municipality



The frequency results show that at Kolomela mine, 52.2% of 113 respondents described the relationship between Kolomela mine and Tsantsabane municipality as Good and Very Good while at Zibulo 64.4% of 73 respondents indicated the same with Emalahleni municipality and the colliery. Furthermore, 34.5% and 31.5% at Kolomela and Zibulo indicated that they did not know the status of mines relationships with the concerned municipalities respectively. It can therefore be noted that relationships between Kolomela and Zibulo mines with their respective mines are generally healthy based on the surveyed workers.

In addition to the above, senior Kolomela mine officials responsible for stakeholder engagements further indicated that their relations with the Tsantsabane municipality are good as evidenced by the interview extract below:

“We have a very healthy relationship with Tsantsabane municipality and am not saying there are no challenges. There are challenges and we have heard challenges before...but we always sit down and engage and come up with solutions and interventions. Some challenges include...we were collaborating on a project [Tsantsabane municipality] will want us to put money into their municipal account so that they will pay whoever contractor is executing the job...but then there will always be issues where the contractor will say, ‘I have not been paid this and that...but usually for things like that we have

Service Delivery Agreements (SDAs) whereby roles and responsibilities are clarified. So honestly, our relationship with municipality is healthy” (Enterprise Development: Hub manager, Kolomela Postmasburg)

Fieldwork observations and evidence in official documents shows that Kolomela mine has done significant social and economic investment in Postmasburg through Corporate Social Investment, Social Labour Plans and Enterprise Development initiatives. The Kumba Iron Ore Kolomela SEAT report (2014) shows that the focus areas have been on: municipal infrastructure development; municipal capacity support; education and training; health and social support; enterprise development through Small Business Hub; youth, arts and culture; sports and recreation among other things. The table below shows distribution of investment in infrastructure development by Kolomela mine in Tsantsabane local Municipal area:

The information in the table below shows that Kolomela mine invested more than R31m in Postmasburg infrastructure roads, water and sewerage and electricity network and waste management between 2011 and 2014. The infrastructure projects fell under CSI or SLP of the mine. Ethnographic evidence gathered during data collection shows that Kolomela mine has its presence in Postmasburg evidenced by projects the mine has undertaken and a label that mention its name. Others can see it as marketing strategy, however, given low levels of development in the town, the projects are significant and reduce service delivery load on Tsantsabane Local municipality.

Table 1.2 Investment spent by Kolomela mine on infrastructure development in Tsantsabane Local Municipality.

TABLE 22: Investment in infrastructure development

Project	Beneficiaries: Residents of...	Project type	Total spend	Start	End
Infrastructure Development			R31,638,218		
Repair and Maintain Beeshoek Road	Postmasburg, Beeshoek	CSI	R2,500,787	2012	2014
Fund New Eleven kv Supply from Eskom Traction	Boichoko	CSI	R3,332,830	2012	2013
Phase 1: Costing & Scoping PMG/ Kathu Road	Tsantsabane	CSI	R517,866	2012	2013
Sewer networks for 212 stands	Boichoko	SLP	R1,097,706	2011	2013
Upgrade of Pump Station 3 and 4	Postmasburg	CSI	R92,771	2011	2013
Operation and maintenance of old waste water treatment works	Postmasburg	CSI	R908,937	2012	2013
Upgrade of Motlaeshaba Street	Boichoko	SLP	R2,591,141	2011	2012
Upgrade Plein Street	Postdene	SLP	R13,750,391	2013	2014
EIA for treatment sewerage	Postmasburg	CSI	R826,621	2012	2012
Traffic Impact Study	Tsantsabane	CSI	R178,900	2013	2013
Replace 2 MV cables to provide ring feed in town	Postmasburg	CSI	R263,648	2011	2012
Electrical street lamps Stasie Street	Newtown	SLP	R738,950	2012	2012
Cleaning of all blocked main sewer lines	Postmasburg	CSI	R477,628	2012	2012
Refurbishment and upgrade of all sewer pump stations	Postmasburg	CSI	R3,361,204	2012	2012
Feasibility study - domestic waste landfill site	Postmasburg	CSI	R998,838	2011	2012

Source: Kumba Iron Ore Kolomela Mine SEAT report, 2014.

In addition to the above, Kolomela mine, through its municipal capacity building initiative, invested over R28m through Kumba Municipal Capacity and Support Programme (KMCSP). Kumba Iron Ore company notes that local municipalities in areas the company operates have “...insufficient expertise and capacity to maintain and deliver quality services...” (Kumba Iron ore, 2014). Tsantsabane Local Municipality had been struggling in terms of ‘revenue management, revenue loss through poor collection of electricity and water and poor operations and maintenance of municipal infrastructure adversely impacting service delivery’ (Kumba Iron Ore, 2014: 31). To address the identified challenges given the fact that many of them are as consequent of mining activities, Kolomela mine for instance fully funded the secondment of a financial controller to the municipal Chief Financial Controller (Kumba Iron Ore, 2014).

Also, the mine, through the water support programme, injected more than R10 million to clear the municipality's account with Sedibeng Water that was outstanding (Kumba Iron Ore, 2014) and this did not sit well with Kolomela employees as highlighted in earlier section. This was in light of the alleged high water bills the employees were owing the municipality and, in their thinking, Kolomela mine was supposed to extend the same gesture and clear their water debts. The table below shows the amount of money injected into municipal capacity building:

Table 1.3 Breakdown of investment in municipal capacity building by Kolomela mine in Tsantsabane Local Municipality.

TABLE 23: Investment in municipal capacity building

Project	Beneficiaries: Residents of...	Project type	Total spend	Start	End
Municipal Capacity Support			R28,304,844		
Secondment of a financial controller to the municipal chief financial officer	Tsantsabane	CSI	R2,608,248	2012	2014
Assessment of municipal fleet	Tsantsabane	SLP	R3,082,740	2012	2013
Operational and Maintenance Support to Tsantsabane Local Municipality	Tsantsabane	CSI	R9,008,558	2012	2014
Tsantsabane Town Clean-Up Job Creation	Tsantsabane	CSI	R617,032	2013	2013
Support to District Municipality	Upington	CSI	R2,500,000	2014	2014
Water Support Programme	Tsantsabane	SLP	R10,194,505	2014	2015
Improvements at current WWTW	Tsantsabane	SLP	R293,761	2014	2015

Source: Kumba Iron Ore Kolomela SEAT report, 2014.

In addition to the above, Kolomela mine employees are generally not satisfied with the amount of money the mine has invested into Tsantsabane LM. Qualitative responses from open-ended questions in the worker survey reveal that, Kolomela mine seems to care a lot for the community and neglecting its own employees. They argue that money donated by the mine to the municipality is mismanaged due to absence of strict monitoring controls:

“Municipality is struggling. The mines are coming up especially Kolomela. Kolomela is paying for consultant more than a million rand per year. There is a municipal Chief

Finance Officer and a consultant that assists the CFO... They (mine) have also a municipal support programme where they give direct technical services support through a consultant. Kolomela are just putting money on the table but there is no monitoring and evaluation from the mine side to pressure on the municipality. The consultants are just there to make a lot of money with no improvements. I hope now things will improve after Kolomela mine realised that there was need for institutional capacity support to the municipality..." (TBBC member and Ward Councillor, Postmasburg)

Empirical data shows that Tsantsabane Local Municipality is struggling in terms of providing some basic services housing, water and sewerage reticulation and collection of revenue. The municipality is struggling to cope with the rising demands of an increasing population stimulated by the mining boom. A noticeably high percentage of the population of the town does not pay rates for different reasons and lack of active community participation on civic issues like attending municipal council meetings at various levels and this has placed the municipality in a difficult situation. Lack of effective residents' participation leaves councillors with room to do things the way they want and, in some instances, not adhering to procedures. The non-participation of residents especially those in the townships in municipal consultation processes result in decisions undertaken on their behalf. In the 2015/2016 municipal budget, Tsantsabane LM proposed to increase tariffs on water and electricity. Most residents from Postdene, Boichoko, and Newtown among other places did not hear or read of the proposed increases. The price of water, electricity and refuse collection went up and majority of the residents who refused to pay the new tariffs found themselves with high bills including the case of Kolomela employees mentioned in the earlier section. A Tsantsabane municipal ward councillor underscored the following:

"Here in Postdene...two years ago my mother was paying R500 every month (the whole account). Last month, it was R1400...it's not only Kolomela employees whose utility bills went up. So, what happened here, people did not oppose (proposed tariff increases because they don't participate). You know 'mose' (slang for that) every year rates are increased for water electricity etc. So, our rates increased by about 300% and that is the problem...we are going to fight the municipality because they cannot just increase rates without approval..." (Ward Councillor, Postmasburg)

The allegations of non-credible Integrated Development Plans for the last five years and lack of municipal regulation in terms of land use management and revenue collection raises serious questions around the municipality's ability to manage its own affairs and execute efficient quality

service delivery within its jurisdiction. Failure of regulation and enforcement of municipal bylaws pointing towards institutional capacity has resulted for instance in the sprouting of informal settlements on open municipal land. Reports indicate that in mid-year 2000, Tsantsabane Local Municipality had put a moratorium on sale of land for different until a land audit has been completed. Unfortunately, the land audit was never completed and just before the 2014 municipal elections, landless Postmasburg residents illegally occupied land in Maranteng adjacent to Newtown. Houseless residents allocated themselves residential stands and erected corrugated iron sheets on residential land that had not been serviced in terms of water, sewer and electricity. Location of some of the residential structures is too close to the main road; located on unstable and uneven land and on inaccessible places. The invasion of Tsantsabane Local municipality land was allegedly politically motivated as it was the election season and the municipality could not protect the land due institutional incapacity. Rather, these settlements have put pressure on the municipality to service the land with water, electricity and sewerage infrastructure as noted below:

“The readiness of the municipality was affected by non-filling of strategic positions...there is no leadership. There is no guidance, and this is a problem. If you don’t have leadership in vacant positions to make proper decisions in terms of proper transition and planning taking place, you will find loose ends and those loose ends will come back to haunt you like now. You see as you are coming into the town, there is informal settlements. No one is doing anything...everyone is just looking at each other...there are stray animals in town...but the municipality is not in a position to execute something as its mandate. Everything turns back to cash-flow...in this municipality there is no sustainability program on cash-flow. Even if the mine gives then assets, it’s a burden for the municipality. They cannot manage that asset...it’s a burden the municipality can’t carry, they don’t have institutional capacity to carry out such...” (Tsantsabane Local Municipality official, Postmasburg)

In light of the above quote, one can observe that Tsantsabane local municipality faces a number of challenges linked to increased mining activities in and around Postmasburg. These challenges are not peculiar to Postmasburg town but also other mining towns like Rustenburg, Mokopane and Burgersfort where the development of informal settlements is linked to population increase in response to mining activities and inability of local authorities to deal with housing and accommodation pressures (SALGA, 2015). Institutional incapacity due to unfilled strategic posts in the past and poor management systems have put the municipality in a vulnerable position where

it does not have sustainable cash flow systems; lack effective revenue collection strategies and asset management and enforcement of municipal bylaws. The illegal occupation of land stems from rapid population increase intersecting with land sale moratorium and political bickering placed the municipality in a difficult position. Reconfiguration of land use without municipal approval defeats the purpose of having Spatial Development Framework in place. Residents' invaded land that had not been scoped and serviced in terms of water, electricity, sewerage provision. Tsantsabane local municipality in many ways is not ready to deal with challenges that confront new mining towns. The unplanned settlement has created a huge burden on Tsantsabane municipality to provide basic services whose cost they had not budgeted for. Municipality bureaucrats indicated that most of the local residents do not want to pay for basic services and has serious impact on the municipality's revenue inflow.

Unlike Postmasburg, Ogies/Phola finds itself as an extension of Emalahleni local municipality 35km away from Witbank where municipal chambers are located. This spatial separation in terms of distance renders the town secondary to other residential settlements within Witbank precincts. For instance, water is pumped from Witbank to Ogies. During my 3 months stay in Phola, water was available twice a week. Residents have to fill up containers with water for the rest of the week. Emalahleni local municipality as one of the most resourced local municipality in the country due to numerous collieries operating on the Witbank coalfields. However, the municipality went under administration in 2013/2014 due to financial mismanagement. Local residents accused the municipality of poor service delivery and allegations of high levels of corruption by officials (Mbuli, 2014). In 2016, the Democratic Alliance requested the municipality to be put under administration due underperformance of its leadership which saw for instance municipality's Eskom debt skyrocket from R185m in March 2013 to R1 billion in 2016 (Witbank news, 2016). In addition to the above, the smooth functioning of municipalities with specific reference to Emalahleni local municipality's Ogies/Phola community is affected by challenges that related to lack of infrastructure development, delivery, and non-payment of rates by residents. None payment of rates culture has its own history informed by South African politics especially in local government. Likewise, parallels can be drawn between Postmasburg and Ogies/Phola in terms of the culture of non-payment of municipal rates. This weakens the ability of municipalities to enforce payments. This makes it difficult for the municipality to provide adequate service delivery to its residents especially in Ogies. In the 2015/16 financial year, the municipality was struggling to

pave identified streets, install speed humps, water and sewerage pipes in Iraq and storm water drainage as set out in the IDP in wards 28, 30 and 31 (Emalahleni, IDP 2015/16) that constitute Ogies. An Emalahleni municipal official noted:

Our challenges are currently informed by less enforcement measures that have been taken because you know, South African communities politicize everything. We politicize service delivery, we politicize rates and services payments etc...but we are presently trying to push people...payment level rate is below 30% in Phola/Ogies, yet the population is increasing putting pressure on the infrastructure. We are lagging behind on what we receive as income. It does not match up with the demand... (Emalahleni Unit Manager, Ogies/Phola)

In addition to the above, Emalahleni local municipality does not own much land in Ogies/Phola, hence cannot cope with the housing demands given population increase driven by mining activities. Having started as a farming town, most of the land is owned by farmers whose interests lie in agriculture related developments. It has therefore left Emalahleni local municipality in a precarious position in terms of housing provision. Furthermore, Ogies is surrounded by mining operations that diminish plans for residential expansion among other things. This quandary opened land invasions. This is similar to what transpired in Postmasburg. In Phola, thousands of property-less residents invaded a portion of privately-owned farmland on the edge of the township and demarcated themselves residential stands. The new settlement is known as Iraq (see Fig 1.18). The government is said to be in talks to compensate the farmer. In this instance, similarities can be drawn between Postmasburg and Ogies in terms of the mushrooming of informal settlements directly or indirectly linked to mining activities. This is also a familiar feature in other mining towns in South Africa and this questions the nexus between role of local municipalities and mining companies to provide residential infrastructure and related services.

Emalahleni local municipality is of the view that satisfactory work has been done of mining companies' in terms of community development. However, the municipal representative is of the view that more can be done collectively as opposed to individual work by mining companies. The municipal official who is responsible for Ogies argued that mining companies seem to be in competition with each other and chasing publicity. Rather, they should collectively work together towards service delivery, for instance, proportionally contribute funds towards infrastructure maintenance and development on roads, water and sewer provision. This suggestion is similar to

the set up in Postmasburg where mining companies including Kolomela collectively contribute funds for infrastructure development among other things.

Fig 1.18 Physical location of Iraq informal settlement in Phola, Ogies.



Google Earth, 2018.

However, Zibulo mine official responsible for community engagement is of the view that Emalahleni local municipality does not have capacity in terms of qualified personnel, resources and enforcement. They point towards politicization of the municipality in terms of appointments among other things which affects relations with business. Similar cases have been reported elsewhere such as, the Public Affairs Research Institute (PARI) (2017) showed that Mogalakwena Local Municipality in the Waterberg District Limpopo party-state conflicts troubles were linked to broader contests in the African National Congress (ANC). The subsequent factions handicapped the local municipality's ability to provide service delivery in Mokopane, mining town. Further, the mine official noted that service delivery e.g. is the responsibility of Emalahleni local municipality and will not undertake projects related to such. In a qualitative interview, the following was noted:

"That is not my job (fixing roads etc.) and that is not my responsibility. I will not take over a municipality service delivery thing that is needed. It does not benefit anyone...I am not going to fix roads...when there are kids in Phola who go to school without proper

uniforms and jerseys or shoes...if someone fixes the roads and people tell me people are speeding or being killed etc., I will come put speed humps and street lights... (Zibulo Community engagement officer)

Despite the abovementioned challenges, Zibulo colliery maintains a healthy relationship with the municipality especially with the Ogies unit manager and local ward councillors. For instance, the colliery upgraded Phola's sewerage network and doubled its capacity and introduced waste management project that cleared over 20 illegal dumpsites, donated refuse collection trucks and refuse skips costing the mine R48 million (Anglo America, 2013). Several mines have undertaken several projects under their SLP and CSI plans for instance BHP now South32 built Phola multipurpose hall; Glencore built a R75m multipurpose school (primary and secondary); relocated families and built them houses worth R70m (Mavuso, 2015) among other things. For Zibulo, it has been involved in the building of new classroom blocks, renovation of Phola clinic among other things. Zibulo's SLP for 2015-2019 shows that the mine has budgeted R25m for Local Economic Development (LED) which includes among other things (see appendix); construction of a taxi rank in Phola; upgrade of Phola fire station, infrastructure upgrades at selected schools and clinics in Phola and Leandra (Anglo American Inyosi Coal, 2015).

6.3. Analysis: sanitised residential space, politics of belonging and incapacitated municipalities

6.3.1. Revitalised housing control

Capitalism and in this instance mining, is a 'geographically embedded system' whose survival is premised on the production of space (Herod, 2001a). Social actors and capital contest the configuration and reconfiguration of space (absolute, relative and relational). In light of the above observations, active and conscious social actors confront new mining companies operating in South African towns in this case Ogies and Postmasburg. They seek to have influence in terms of how space is organised in absolute and relational terms. In doing so, contestations emerge in terms of control, resistance and remaking of geographies. Social actors seek to control access to resources like housing and business opportunities. Social actors like labour and ordinary residents use different strategies to contest capital over space through various political projects that include identity politics, 'boundary drawing' process, solidarity based on class (homelessness) and protest action. In addition, there are contestations between social actors and local municipalities as

residents call for social justice in terms of service delivery in towns. This happens because human beings are place based (Agnew, 1987) and have attachments with space. Furthermore, social actors engage with capitalism and its agents in terms of shaping economic and social landscapes in the process making and remaking social relations and creating new landscapes to fulfil their biological and reproductive visions.

Post-apartheid mines in South Africa (new mines established after 1994) find themselves having to deal with legacy of apartheid. This process of undoing evils of the past in the workplace, host community and broader society has not been an easy one, given the need to make profit and plough back into the society. In the cases of Kolomela and Zibulo mines just like other mines operating in South Africa, they have to abide by the Mining Charter, SLP and CSI. The revised Mining Charter has not come into effect because of court application by the Chamber of Mines of South Africa (reference is made to the Mining Charter for the purposes of this discussion). In compliance with the Mining Charter in tandem with the Mineral and Petroleum Development Act 28 of 2002, both Kolomela and Zibulo mines have made significant attempts to meet some of the set targets. For instance, in this section focus is on the following elements; mine community development; procurement, supplier and enterprise development and housing and living conditions. When a mining company complies with the Mining Charter, the Department of Minerals Resources grants a social licence for the concerned mine to operate. Section 2.7 of the Mining Charter raises the importance of the provision of improved housing and living standards of mineworkers given the history of the mining industry (DMR, 2015). Mining companies are required to come up with housing and living conditions policies that seek to promote human dignity, housing ownership, secure tenure and housing schemes that integrate with the broader society (DMR, 2015).

In light of the above, Kolomela mine built more than 700 houses as indicated in the previous chapter while Zibulo opted for the living out allowance. However, for Zibulo, the broader holding company, Anglo Coal has a housing ownership scheme in Duvha, Witbank for all Anglo Coal workers across its operations depending on preferences per operation. In this case, new mines have made strides to transform the mining industry in terms of provision of decent housing and living conditions. In the past, mineworkers resided in barrack style hostels/compounds where there was no privacy but exploitation and control (Crush and James, 1991; Allen, 1992; Moodie, 1994; Bezuidenhout and Buhlungu, 2010). The decent houses that Kolomela has built and reasonable

above-agreed industry-wide living out allowance by Zibulo signify a positive shift from the past in the eradication of poor living conditions within the mining sector. The houses that Kolomela mine built are in line with the Housing and Living Conditions Standards for the Minerals Industry (2009)⁴¹, Guideline for the Development of a Social Labour Plan 2010⁴² and the Mining Charter. However, the two different models adopted by Kolomela and Zibulo have become sites of contest between mineworkers and employers. As shown earlier, mineworkers have agency (Herod, 2001a; 2012) and thus challenge, for instance, equal housing or living out allowance across all occupational categories in the case of Zibulo. Mineworkers argued that housing is a basic human right and therefore, it should be equally applicable to everyone and hence there should be no differences in terms of rates based on occupational levels. Whereas Zibulo colliery uses transport allowance provision as a way to ensure that mineworkers come to work on time and reduce absenteeism, the very mineworkers use the provision of transport allowance to their favour by opting to reside further from the mine to get more money. This demonstrates that labour has agency to influence and or control mobile space i.e. relative space (Harvey, 2006) (transport circulation flows) to their advantage. The more distance they drive to and from work, the higher the transport allowance they get. The act of opting to reside further from the mine to get a higher transport allowance is innovation mineworkers that turns such acts into a form of resistance that results in monetary benefits.

In the case of Kolomela, mineworkers within the collective bargaining category complain about the cost of maintaining mine houses, paying double taxes for houses they do not own and supposed ‘exorbitant’ utility bills. For Kolomela mineworkers, they do not see mine houses as a place they can call home. Kolomela mineworkers do not view houses built by the mine as a place they can call home because the mine owns the houses. They do not have title deeds of the houses and therefore do not see the houses as a ‘locus of identity’ where “...personal and collective loyalty, affect and commitment can develop” (Herod, 2012: 339, Agnew, 1987). In absolute terms, Kolomela mine houses are just a locale where everyday activities unfold and provide decent shelter for the workers. Relationally, there is no attachment to the houses because of the non-availability

⁴¹ Housing and Living Conditions Standard for the Mining Industry found in the Mineral and Petroleum Resources Development Act 28 of 2002 in the Codes of Good Practice for the South African Minerals 2009 section 2.8. Pretoria: Department of Minerals Resources

⁴² Guidelines for the Development of Social Labour Plans 2010. Regulation 46 in the Minerals and Petroleum Resources and Development Act 28, 2002. Pretoria: Department of Mineral Resources.

of ownership of the houses. Some mineworkers see themselves as temporary guards, taking care of the houses for the mine knowing that occupancy can end anytime upon dismissal or if they quit work. The mineworkers exercise their individual agency for instance by resisting to settle outstanding utility bills because the property is in the mine's name and others have stopped garden maintenance like watering the flowers and lawn as expression of discontentment and a sign of resistance. On the other hand, provision of housing by Kolomela mine is a positive move toward addressing ills of the past and some form of control and monitoring of the mineworkers. Historically, provision of housing to mine workers sought to control mineworkers' social spaces and to maximise production in terms of punctuality and an efficient mobilizer of labour (James, 1990; Macmillan, 2012).

In the same vein, housing provision is a revitalised form of control and monitoring of workers by new mines like Kolomela. This is achieved through rules and regulations in the housing contracts and the mine's knowledge of every workers residential address. In cases of absence without official leave, the mine can track the employee back to her/his place of residence. In addition, given the fact that access to housing attached to employment tenure, contract arrangements act as mode of control of labour by capital (Rainnie, McGrath-Champ and Herod, 2010). Labour is regulated and controlled geographically through provision of housing in strategic locations that the company provided transport system can easily and efficiently access labour and arrive at work on time and produce. This demonstrates time-space compression of relative space to monitor and control labour and at the same time ensure that workers arrive at work on time. In Australia, Ellem (2003, 2006, 2010) has shown how mining companies in the Pilbara iron ore region implemented 'fly-in-fly-out' work arrangements to 'dis-embed and de-localize to control workers after they had grown alliances with community members of communities, they resided in (Rainnie et al., 2010: 302). Workers that reside thousands of kilometres in Perth and Sydney and are flow fortnightly to and from the mines in Pilbara. Furthermore, the revitalised housing regime signifies a shift from colonial and apartheid period barrack style and hostel accommodation. In light of the above, the contestations that unfold between social actors i.e. labour and capital characterise spatial orders of post-apartheid mines in South Africa. It is through these contestations that the meaning of 'home' as a place and space is negotiated and renegotiated.

In addition to the above, Kolomela and Zibulo have to deal with the unintended consequences of their actions within their operations. In Postmasburg, interview data shows that residents and the mine have a ‘complimentary and confrontational’ relationship. Residents are grateful for how the mining boom has transformed the town. However, residents feel excluded from the spin-offs associated with the mining boom that include access to infrastructure (housing), employment and procurement opportunities with Kolomela mine. To address this supposed disappointment, some residents engage in political projects of boundary drawing to include and exclude who gets access to employment, procurement tenders and housing from the mine. In other words, some Postmasburg residents use belonging and politics of belonging to determine who is local and not local in order to access jobs, tender projects and housing. In absolute terms, Postmasburg (Land, Kolomela mine and other resources) is a physical space they are entitled to by virtue of them having been born and residing in that space. Identity is constructed through various grids (complexion and race, place of birth and school) to determine belonging (Yuval-Davis, 2011) ‘us’ and ‘them’. Politics of belonging is used to include and exclude who is ‘cut in’ and ‘cut out’ to access resources. Those who possess power through their social locations are spearheading this project leading to a fall out with for instance mineworkers often labelled as labour imports from outside Postmasburg. They accuse ‘labour imports’ of stealing ‘locals’ jobs, tender procurement contracts and houses. Postmasburg residents’ topophilia (love of place) stems from the fact that it belongs to them and are entitled to benefits associated with the place. Thus, *sanitisation of absolute space* conversely results in social exclusion of relational space. That is to say, the housing regime deployed by Kolomela mines has left some Postmasburg residents feeling relationally and physically excluded. In return, using the *sanitised absolute spaces* engage in boundary drawing exercise to relationally exclude those deemed as not local from accessing work and business opportunities. I further explore this in the next section.

6.3.2. Sanitised residential spaces and belonging

Findings in Postmasburg on the intended and unintended outcomes of Kolomela’s housing project with its employees and broader community requires some analysis to understand these dynamics as they play out spatially. As an outcome of sanitised workplace order (which is explored in the next chapter), *sanitised residential spaces* result in socio-spatial relations and reconfiguring social organisation in Postmasburg. The housing regime by Kolomela mine demonstrates attempts to

delink with colonial/apartheid period working class accommodation into a middle-class project. Absence of spaza, shops, fruit stalls, church gatherings around open spaces and or under the trees and empty spaces typical to a township set-up depicts sanitised residential spaces (absolute, relative and relational), position shared some Postmasburg residents. *Sanitised residential space* depicts a shift from squalid compounds, upgraded hostels to family units and cleansed/delinked from old housing practices. It also provides a sense of exclusion of local residents as is demonstrated in the preceding sections. The sanitised residential space is an expression of capital's spatial vision of a clean, modern housing project that is physically and relatively integrative but relationally exclusive.

The Kolomela mine's housing regime depicts attempts to provide decent accommodation, comply with legislation and are able to 'regulate and control labour' (Herod, 2012). Also, given the unattractive nature of Postmasburg due to Karoo conditions and uneven development, the houses were built to retain skilled labour that often prefers to reside in urban spaces with family (Kumba Iron Ore, 2010⁴³). The physical location of the houses in in Boichoko, Postdene and Airfield as absolute spaces is deemed to be 'integrative' because the mine did not start a new mining town but rather added its properties in Postmasburg on designated land from the Tsantsabane municipality. Furthermore, the strategic location of the housing units near main roads in relative terms enables easy access to the main truck roads and to the mine hence less time spent going to work. Easy access to the houses annihilates distance (as shown in Chapter 5) i.e. *time-space compression of relative space* and this perfectly works for the mine in that mineworkers arrive at the mine on time and continue with the production process. However, the whole physical environment does not sit well with some Postmasburg residents in relational terms. Local residents view the *sanitised residential space* exclusionary due to the fact that the absolute space is sanitised and insulated from outsiders.

In relational terms, Postmasburg residents have developed an emotional attachment to this 'place' called Postmasburg as a 'locus of identity' (Herod, 2012), based on them being Coloured or Tswana and speak a particular Afrikaans and Tswana dialect. This is because social actors are embedded in space. Space is society and society are people and hence the relationship with

⁴³ Kumba Iron Ore. 2010. *Memorandum for human resources, remuneration and nomination committee. Kumba housing strategy*. Centurion: Kumba Iron Ore. (confidential)

Postmasburg. Social identities are intertwined with space and deployed as markers and rallying points when defending space and other interests. Consequently, some Postmasburg residents are of the view that Kolomela employees do not deserve to live in the mine houses. Through the *sanitisation of absolute space*, the spatial location of Boichoko, Postdene and Airfield seems separated from older locations and the absence of spaza shops, churches and shebeens/taverns; denotes *sanitised residential space*. The suburbs are *sanitised residential spaces* because they subtly portray some local residents not employed by Kolomela mine as undesirables and that spaza shops and taverns contaminate and render such spaces less secure. Labelling the three suburbs as ‘sanitised residential spaces’ suggests that local residents are dirty and do not belong into such spaces whereas the ‘locals’ feel entitled to access and own such spaces. These spaces have proper services (water, electricity and refuse collection) and paved road network. Relational space (Harvey, 2006) enables social actors to produce fantasies, frustration, memories, desires they have over absolute space like Postmasburg and the houses. Absence of familiar physical elements that characterise townships geography renders Kolomela housing controversial, unacceptable to local residents hence absence of a sense of belonging. Thus, *sanitisation of absolute space* by Kolomela mine has resulted in collective response by some local residents against the mine. Through protests against Kolomela, pelting buses and vehicles ferrying Kolomela mines workers, aggrieved Postmasburg residents utilise ‘coalitional and associational power’ to express their discontent and unmet expectations (Brookes, 2013; Webster et al., 2008). This whole exercise depicts community struggles for social justice in urban spaces. This resonates with Agar and Bohm’s (2018: 1232) notion of grassroots agency (collective form of socio-spatially constrained class-struggle), by social actors against capital’s actions on public commons. When these desires and expectations, among other things, are not met or feel threatened, social actors who have access to power engage in the boundary making process to include and exclude ‘others’ as in the case of Postmasburg residents.

Furthermore, the project of belonging in determining who is local and not local further unfolds itself on how ‘local’ Postmasburg Coloureds categorise Coloureds from Namaqualand region as not part of them. They use skin hue, length of nose and the Afrikaans dialect to exclude them from accessing resources or benefits in Postmasburg. This ‘common sense’ classification of Coloured individuals from Namaqualand by Postmasburg residents follows a similar observation and problematization by Erasmus (2010: 246) on how “...young South Africans name someone a

‘coconut’ when they experience a disjuncture between appearance and social habits...” A coconut cannot be a Black person because of his/her habits and cannot be White because of the complexion(see also Walker, 1983 on colourism⁴⁴). Mineworkers from Namaqualand’s skin hue and long nose are associated with crime i.e. drug abuse and prostitution because of the region’s proximity to the Western Cape. Postmasburg disown them and hence label them as a threat to their resources. This kind of classification evokes apartheid’s pencil tests⁴⁵ in South Africa. Therefore, the *sanitisation of absolute space* (Kolomela housing) has resulted in the *social exclusion of relational space* by some Postmasburg residents through boundary drawing against those informally classified as not belonging.

Following the above, what emerges relationally is a continuation of colonial and apartheid legacies in the present. Black racism exerted on Namaqualand Coloureds by Postmasburg residents (Coloured) denotes reincarnation of racial hierarchy. This reinforces observations by Omi and Winant (1994: 53) that “...racial legacies of the past...continue to shape the present.” The process of developing racial categories is socially constructed, contested, negotiated and changes over time. In this case, Black on Black racism causes disunity based on common sense racial classification categories. Fanon (1963: 148) writing on the *Pitfalls of National Consciousness*, observes, “...the nation is passed over for the race, and the tribe is preferred to the state. These are the cracks in the edifice which show the process of retrogression that is so harmful and prejudicial to national effort and national unity.” In absolute space (Harvey, 2006), Namaqualand is part of the Northern Cape Province just like Postmasburg and 800km relatively away from Postmasburg. Relationally (Harvey, 2006), Namaqualand Coloureds are viewed as not being part of Postmasburg, yet they belong to the same province and are South Africans. Their proximity to Western Cape, associates them with social ills of big cities like crime, drug abuse and prostitution. Thus, the objectives of the state through the Mining Charter and that of the mines to transform mining communities through efforts such as decent housing and community development have resulted in unintended consequences i.e. politics of belonging hence creating disunity and

⁴⁴ Colourism is a term coined by Alice Walker 1982 in ‘If the present looks like the past, what does the future look like? In Search of our mother’s garden: womanist prose. It refers to racial discrimination based on social meanings attributed to skin colour.

⁴⁵ Pencil test was a method of assessing racial identity in South Africa by apartheid government for racial classification. Apartheid officials would insert a pencil through a person’s hair whose hair texture was difficult to determine a racial category. If the pencil fell on the floor, would have passed and classified as white whereas if it got stuck was considered coloured (mixed racial).

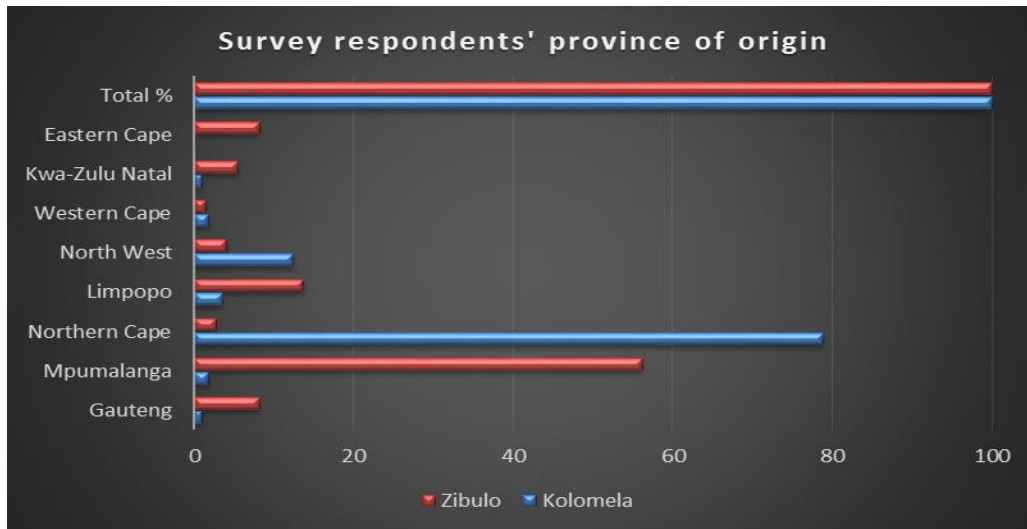
retrogression. This is in contrast to Phola residents who acknowledge difference but do not exclude each other from opportunities. Level of economic development and relative distance of Ogies from major centres (Witbank, Pretoria, Johannesburg) and the Maputo corridor. Nonetheless, the actions of Postmasburg residents constitute their social praxis in an attempt to reconfigure altered space by capital in order to fulfil their social and biological needs.

Equally, migrant labour is still in existence in South African mines as depicted in the cases of Kolomela and Zibulo. However, it is no longer cheap migrant labour, but rather South African skilled labour that moves from one town or village to a municipality that hosts mining activities as in the cases of Kolomela and Zibulo. During the colonial and apartheid periods, cheap migrant labour was systemically developed to create cheap and docile black African labour for the mines and related industries (Wolpe, 1972; Moodie, 1994; Bendix, 2015). Findings from this study shows that 50% and 41% of survey respondents from Kolomela and Zibulo respectively indicated that they were migrant labourers while 50% and 59% indicated that they were not migrant labourers. In a National Union Safety Audit⁴⁶ study of 2015 on mining, energy and construction sectors carried across 6 regions⁴⁷ that the union organises, found that 32.7% from a sample of 474 indicated that they had homes elsewhere (Bezuidenhout, Stewart and Bischoff, 2015). The findings show that migrant labour in this instance based on not just movement from rural to urban areas but from any geographical location to municipalities that host mining activities is still intact (Xulu, 2012) but has taken different forms.

⁴⁶ National Union of Mineworkers Safety. 2015. Safety Audit. Findings presented to NUM leadership in 2015 at NUM head office Johannesburg, South Africa

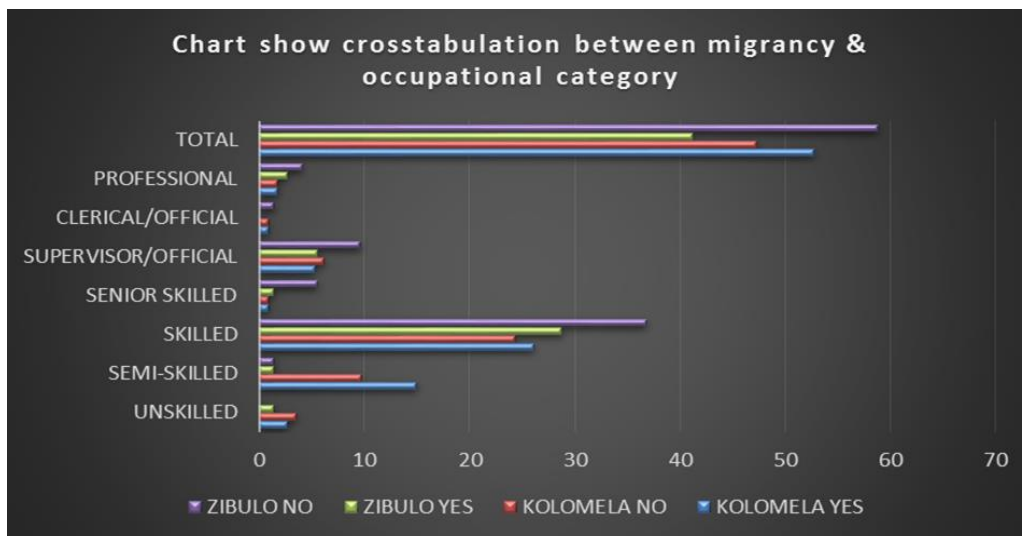
⁴⁷ 6 Regions include Rustenburg, PWV, Highveld, Matlosana, North West and the Free State.

Fig 1.19 Workers' Province of Origin



The graph (Fig 1.19) above shows that more than 78% of the respondents at Kolomela are from Northern Cape, the home province of the mine, while 56.2% at Zibulo indicated that they were from Mpumalanga province. In addition, 12.4% of respondents at Kolomela indicated they were from the North West while 13.7% at Zibulo indicated that they originate from Limpopo province. Considering the assertions by some sections of Postmasburg residents that Kolomela mine is overlooking Postmasburg residents and hiring labour force from elsewhere, the survey results show something rather different. Furthermore, findings reveal a change in terms of skills level (occupational category) and migrant labour. In the past, migrant labour was characterised by cheap, docile and unskilled workforce (Bendix, 2015) but survey results presented in the graph below depict a major shift in terms of skills levels. Survey respondents profile reveals that at Kolomela and Zibulo, most of the mineworkers occupy the semi-skilled to senior skilled categories as shown in Fig 1.20 below.

Fig 1.20 Cross-tabulation results from questions 14 on occupational category and 20 that asked on migrancy of survey participants.



The graph above reveals several issues that require some attention. Firstly, at Kolomela mine, low figures of respondents of 2.7% and 3.5% indicated that they were unskilled based on those indicated they were migrants and not respectively. Comparatively, at Zibulo 1.4% of those who described themselves as migrant labourers classified themselves as unskilled. Therefore, this seems to suggest that the two mining companies have skilled mineworkers and that those who are migrant labourers' have become more educated and skilled thus reversing the colonial and apartheid of unskilled, cheap migrant labourers. Secondly, the greater portion of respondents of the survey classified themselves between semi-skilled to supervisor/official categories. For instance, at Kolomela 26.1% and 24.3% classified themselves as skilled and as migrant labourers and not respectively while at Zibulo 28.8% of those who classified themselves as migrant labourers said they were skilled while 37% of those who said they were not migrant labourers classified themselves as skilled. Thirdly, survey results reveal that there are more respondents who classified themselves as migrant labourers under skilled and other higher occupational categories than those who claimed not be migrant labour at Kolomela. However, Zibulo's survey results reveal that there are more survey respondents that are not migrant labourers that are skilled and other higher

occupational categories as compared to those who classified themselves as constituting migrant labour. Lastly, the above observations reveal that migrant labour can no longer be classified as cheap and unskilled in the context of these two mines as shown by the survey results. This is reinforced by the fact that the survey results show that at Kolomela mine, 46.9% of those who classified themselves as migrant labour possessed a National Senior Certificate and or with other higher or professional qualifications like diplomas and degrees while 42.1% of those who are not migrant labour had similar qualifications. Contrastingly, at Zibulo, 58.9% of those who classified themselves as not migrant labourers had NSC and/or other higher qualifications while 41.1% of those who categorised themselves as migrant labour has NSC and/or other higher qualifications.

In light of the above, migrant labours continued existence cannot be framed with the same logic of the colonial and apartheid periods as it is no longer cheap, unskilled and some extent not limited to rural places. Rather, democratic South Africa affords every inhabitant freedom of movement, from any geographical location and it is not just about uneven economic development but choice to be mobile while at the same locations of mines is fixed. Minerals naturally occur, and capital develops its logics through spatial fix to extract, process and transfer where they are required. In the same vein skilled and professional labour is attracted to these spaces due to several factors. Mining companies (Zibulo and Kolomela) attract mineworkers of different skills set (not as cheap, docile migrant labour) to work in their highly mechanised mines by offering competitive rates and benefits i.e. housing. The two mines pursue different spatial visions i.e. Zibulo provides housing allowance while Kolomela built houses rent them out to its employees. It is in these different contexts that different categories of mineworkers (migrant and no-migrant labour) pursue their social reproduction, altering and reconfiguring social and economic landscapes that have been created by capital.

6.3.3. Relations between mining companies and local government authorities

Local municipalities play an important role in stimulating sustainable social and local economic development, provision of service delivery and integration of communities in addressing legacies of the past (Madumo, 2015). Mkentane (2013) underscores that local municipalities in South Africa are expected to be in the forefront of service delivery and closer to people and address daily challenges and demands of local communities (Sithole and Mathonsi, 2015). Research data shows

that Kolomela and Zibulo mines have a good working relationship with Tsantsabane and Emalahleni local municipalities respectively. However, the impact the two mines have made in their host communities in terms of community development varies significantly. Findings reveal that, Kolomela mine has contributed significantly to health, education, bulk infrastructure, vehicles and institutional capacity building of the Tsantsabane municipality (Kumba Iron Ore, 2014) in comparison with Zibulo. The presence of the mine has stimulated a facelift of the town and increased economic activities. However, Tsantsabane local municipality still has capacity issues, narrow revenue streams and political bickering among politicians (councillors). Conversely, Zibulo mine has not been more involved in terms of its dealings with Emalahleni local municipality's Ogies office except for the sewerage treatment plant, electricity transformer upgrade and donation of refuse collection trucks. The withdrawn role of Zibulo is viewed in two ways; firstly, there are more than 40 coal operations within Emalahleni local municipality and hence the work mining companies do, is shared across different mining operations. This in some ways overshadows the significance of the projects that Zibulo undertakes toward community development in its host communities. Secondly, due to municipal boundary demarcation, Ogies is an extension of Witbank that lies 30 km west of the Emalahleni local municipality. The spatial distance is problematic in terms of social and economic development. Suburbs and locations near the urban are more likely to benefit in terms of basic services provision as opposed to Ogies. Therefore, the way the two mines interact with their respective municipalities and the kind of impact the projects they undertake may vary.

The presence of mining companies in local municipalities has created challenges for local municipal authorities. Rapidly increasing population has created challenges on existing infrastructure i.e. water, sewer systems, housing backlogs and increased social ills and this is typical to most mining towns in South Africa (SALGA⁴⁸, 2015). Postmasburg and Ogies towns are not integrated. The towns still resemble apartheid's social and spatial engineering. For instance, in Ogies town the population is very low but has strong and reliable bulk infrastructure because it was a former White residential area. In comparison, Phola is spatially excluded from Ogies by 15 km and connected by R545 that crosses over N12. The bulk infrastructure in Phola is old and of low capacity because the township was established for low population of Black Africans and hence

⁴⁸SALGA-South African Local Government Association

less investment in the area. Increased mining activities and human population stretched the infrastructure and requires revamp. Funds to carry out such projects are not available due to non-payment of utility bills by residents', institutional incapacity and 'broader financial challenges facing local government in South Africa' (Madumo, 2015).

A similar trend is evident in Postmasburg where residential locations are still not completely integrated due to apartheid spatial engineering (racial-based land zoning and land access) and the town is failing to cope with rapid population growth driven by mining boom for instance as evidenced by emergence of informal settlements due to land and housing shortage (SALGA, 2015). The presence of informal settlements in Postmasburg and Phola depict agency of social actors due to non-availability of low cost-housing and residential land. The two cases of Postmasburg and Ogies show that Tsantsabane and Emalahleni local municipalities are not coping in dealing with the challenges associated with mining activities. Towns with mining activities should deal with rapidly increasing populations in terms of housing provision and other basic services and the two towns are not coping. This also confirms findings by Bezuidenhout and Buhlungu (2015) on Rustenburg, 'a global platinum mining centre', that its population increased from 400 000 in 2001 to above 550 000 in 2011. Institutional capacity in terms of qualified personnel in key positions, consistent and sustainable revenue flows and capacity to enforce municipal regulations and bylaws frustrates mining companies as they interact with local municipalities. These challenges act as a drawback on the vision of the MPRDA (2008) and the Mining Charter (2010) that seek to create transformed and sustainable mining communities through mining activities in post-apartheid South Africa.

Table 1.4 showing different strategies adopted by Zibulo and Kolomela mines

Kolomela (Postmasburg)	Zibulo (Ogies/Phola)
Transport - Provides transport through a busing system outsourced to a private company (employees pay R25 per month) - Employees refer to survey stats	Transport - Provide transport allowance (calculated per distance one drives from home to work). - The further you stay the more you earn, but rates based on levels (commute from Phola, Witbank, Pretoria, Johannesburg, Middleburg, Leslie, Springs etc.
Employee Housing - Provides housing for over 718 permanent employees & rent 160 from private owners (short fall of +300) - Built 715 houses in Boichoko, Postdene, and Airfield & owned by the mine. Employees do not feel like its home - Rates vary according to size and number of rooms (paid to the mine) - Also taxed contested - Employees pay utility bills i.e. water & electricity & been refusing to settle bills - Want small-income housing i.e. RDP size because current houses too expensive to maintain	Employee Housing - Provide housing allowance and not houses (728) - Allowance based on occupational levels & contested along human rights - Human rights equal hence it should be equal across board - Want housing allowance to be increased - Coal group has a housing ownership scheme in Spring Valley Witbank but not administered by the mine
Hiring Practices - New mines hence need for new skilled experienced workforce - Employ 1122 permanent employees initially drawn from sister mines +400 hired by contract & subcontract workers - Local and non-local - Coloured dynamics Postmasburg vs Namaqualand - Migrant labour still prevalent	Hiring practices - New mines hence need for new skilled experienced workforce - Employ 728 permanent employees initially drawn from sister mines +300 contract & sub contract workers - Mixed workforce local and non-local - Also hire labour with local addresses - Migrant labour still prevalent
Community relations - General good working relations with community & local municipality - Local business groups want more tenders (TBBC) - Use of politics of belonging to exclude and include access to business, employment & resource opportunities	Community relations - Good working relations with community & local municipality - Community activists want more sustainable business opportunities for the youth - Identity politics absent

• Use of violent protests and attacks on those viewed as non-locals • View SLP & CSR projects as too small in terms of investment • View mine houses occupied by mine employees as 'sanitised enclaves'	• Community not happy with environmental pollution • Emalahleni want more from mines while mines do not want to be involved in service delivery
Local municipality • Tsantsabane Municipality facing institutional capacity hence inefficient service delivery, rise of land grabs & informal settlement • Mine has come up with different interventions to capacitate the municipality • Large portion of land still in the hands of the municipality but a moratorium in place and local government politics • Increase in land grabs (informal structures), crime (petty, prostitution and alcohol and drug abuse)	Local municipality • Emalahleni facing mismanagement, corruption and poor service delivery • Municipality want more from mines while mines do not want to be involved in service delivery but rather focus on other aspects like health, education and recreation • Most land in the hands of private players • Deterioration of infrastructure, land grabs for residential settlement • Crime present not alarming rates but alcohol abuse high

6.4. Conclusion

This chapter has shown the different spatial strategies deployed by Kolomela and Zibulo mines and the mixed contradictory outcomes as shown in the comparative table in Table 1.4. Kolomela mine in Postmasburg undertook an all-out approach to reconfigure the town by developing and improving new and existing economic and social landscapes in order to enable production, surplus and accumulation while Zibulo deployed a withdrawn approach based on its geographical location and uneven economic development (as discussed in the previous chapter). Kolomela built and rents houses and provides transport and transport allowance for its employees while Zibulo only provides living out (housing) and transport allowances. Mineworkers at Zibulo are content with arrangement but want the rates to be equal across all occupational categories because housing is a basic human right. On the other hand, Kolomela employees are content with the transport provision but not all are happy with the housing strategy due to the fact that the houses are owned by the mine and have to pay, rental fees, water and electricity. They individually and collectively deploy different 'tactics and strategies' (Castree, 2010) to resist, remake and make new geographies and in the process recalibrating economic and social relations with capital. At Zibulo, mineworkers reside further from the colliery hence increasing their transport allowance and also agitate for equal housing allowance based on the narrative that housing is a basic human right hence it should be

equal. In contrast, mineworkers at Kolomela refuse to settle utility bills (water and electricity) because they are mere guards who do not relate with their houses and cannot call those ‘places’ as home due to absence of title deeds. Some have stopped watering the gardens and adamant that they will not pay for the water they pump out from the pits at the mine. Absence of title deeds can be seen as a strategy to control labour through residential space. Kolomela mine did not anticipate these outcomes and this shows how spatial strategy to create a post-apartheid middle-class mine worker (paying for utilities, tax and bigger quality residential space) through what I term ‘sanitised residential spaces’ has not gone well.

In addition to the above, Kolomela’s presence and full involvement in Postmasburg has created a number of unintended consequences with the broader community and Tsantsabane local municipality. The arrival of Kolomela mine and subsequent physical developments of the town i.e. bulk infrastructure, mine housing, community projects and employment of residents of Postmasburg raise high expectations given uneven economic development and physical isolation of the town. This has led to a sense of entitlement by some residents on the mine’s houses, business and employment opportunities. This is because social actors are place based and have topophilia and defend limited resources through boundary drawing based on identity politics. This has been shown in the case of how they have made attempts to exclude Coloureds from Namaqualand district from accessing work and mine houses from Kolomela mine. Also, frustration of unmet expectations has led to some residents labelling Kolomela housing units as sanitised residential spaces that are detached from the broader communities. As a result, local residents as social actors have deployed various tactics and strategies against the mine and those seen as outsiders through protests and picketing demanding for jobs and opportunities from the mine. In some instances, the protests have been violent i.e. blockading roads heading to the mine and pelting mine vehicles and buses ferrying workers to and from the mine. I have also showed how migrant labour has changed its form i.e. young, educated and skilled at the two mines as opposed to the colonial and apartheid periods. This can be interpreted as a paradox of the spatial strategy taken by Kolomela mine as it has backfired while as Zibulo has not encountered such except very few encounters with Phola community. In light of the above, I have shown how these spatial strategies resulted in mixed outcomes for the two mines but in all depict new strategies of controlling space and labour. Castree (2010: 463) observes that ‘geography is made’, and capital is not the only actor, social actors like community members contest with capital to resist, make and remake social and economic

landscapes, recalibrate economic and social relations because social actors are spatially embedded (Herod, 2003).

This chapter has shown the complicated nature of relations between mining companies and local government authorities in terms of responsibilities and service delivery. Findings show that both mines have good relations with their respective local government authorities however, challenges facing the local governance in South Africa tend to complicate relations. Incapacity, non-payment of services, service delivery, funding, and corruption etc. render local government authorities' ability to deliver goods and services (housing etc.) to residents and investors. The question of housing delivery is further complicated by rapid population increase due to mining activities leading to land invasions (not serviced) and sprouting of informal settlement. Kolomela mine has found itself getting more involved in the affairs of Tsantsabane local municipality through capacitation programs, funding and construction and repair of bulk infrastructure while Zibulo is more withdrawn and strictly confined to Social Labour Plans and CSI projects.

Given the above insights, the different spatial strategies deployed by Kolomela and Zibulo mines depict how new mines attempt to control space and labour in post-apartheid South Africa. The contrasting approaches have yielded different and contradictory outcomes in the case of Kolomela in its creation of *sanitised residential spaces*. From a conceptual level, the workings of capital in the form of Kolomela and Zibulo on space (absolute, relative and relational) in making geography of capitalism (economic and social landscapes) create and recreate social relations which in turn react back upon geography of capitalism (Soja, 1980; Harvey, 1973; Herod, 2012). This is because social actors like labour and community members are spatially embedded (Herod, 2003) and contest for control of landscapes and create new ones as they have their own visions (Herod, 2003, Lier et al., 2018, Hastings and MacKinnon, 2016). *Sanitised residential spaces* through *sanitisation of absolute space* and *time-space compression of relative space* has resulted in (1) increased monitoring and control of Kolomela mine workers and (2) *social exclusion of relational space* by Postmasburg residents through projects of belonging and not belonging creating new controversial socio-spatial relations. The state through different agents like policy, legislation and local authorities intersect within these processes of the workings of capital and labour. The next chapter provides comparative workplace relations between Kolomela and Zibulo mines.

Chapter 7: Post-apartheid mine workplace relations: Zibulo & Kolomela

7.1. Introduction

Zibulo and Kolomela are new mines established relatively during the same period. They are involved in the extraction of coal and iron ore respectively using underground and open pit mine methods. This section comparatively describes the demographics and workplace relations in terms of workers and management perceptions and attitudes towards each other through use survey data results, qualitative interviews and observations. In exploring workplace relations within a context of new mines, findings reveal that there are changes or shifts in terms of workplace demographics and relations given the ‘apartheid workplace regimes’ (Von Holdt, 2003; 2005) that underpinned old mines in South Africa. I will argue that workplace relations at these two mines have changed but remain dynamic and contested by labour and capital. At both mines, the majority of the workforce is young, generally educated and skilled. Workplace relations have improved and are good between workers themselves. At Zibulo, survey results and qualitative interviews reveal that relations among African Black workers are good as is also at Kolomela. However, at both mines, relations between Black African and White workers are not that good and are still characterised by perceived white supremacy and perceptions of favouritism and discrimination. There is a feeling of deliberate purging of Black African workers by Black African middle management. At Kolomela mine, relations among Coloured workers are complex and dynamic due to ideas of inclusion and exclusion based on identity politics. Also, relations between supervisors and subordinates are generally good but characterised by contestations and conflict. There is significant improvement from the ‘apartheid workplace regime’ to a ‘democratic workplace’ in terms of workplace relations and labour rights.

7.2. Zibulo and Kolomela workplace demographics

Zibulo colliery mine at the time of the study employed 728 permanent employees and another ± 300 directly employed by subcontractors taking the total workforce to just above 1000. On the other hand, Kolomela employed 1122 permanent employees while as another ± 400 were directly employed by subcontractors. At Kolomela and Zibulo, mining which is core production constitutes the greatest number of workforce 577 and 358 respectively followed by the engineering division.

Table 1.5 below shows the distribution of workforces at Zibulo and Kolomela across their organisational units.

Table 1.5 showing Kolomela and Zibulo employees' distribution

Employment distribution at the time of the study					
Kolomela mine	Actual	%	Zibulo colliery	Actual	%
Beneficiation Plant	195	17	Asset Optimization	2	0.3
Engineering	196	18	Engineering	307	42.17
Finance & Admin	11	1	Finance & Admin	8	1.1
Human Resources	48	4	Human Resources	15	2.1
Materials Management	32	3	Geosciences	5	0.68
Mining	577	51	Mining	358	49.17
Projects	9	0.8	Metallurgy	2	0.27
Public Affairs	9	0.8	Sus Dev. energy	6	0.82
Safety Management	33	3	Safety Management	9	1.24
Stay in Business	6	0.7	Sustainable Development	1	0.14
Strategy	6	0.7	Technical solutions	15	2.06
Grand Total	1122	100	Grand Total	728	100

In addition to the above, at Zibulo out of 728 permanent employees, female employees constitute close to 16% and as compared to over 83% male colleagues. In comparison, at Kolomela, male employees constitute more than 76% of permanent employees as opposed to 268 to females who constitute more than 23% of the permanent workforce. Comparatively, Kolomela mine employs more female labour and as opposed to Zibulo. Despite significant numbers of female employees at both mines, the numbers are still very low in comparison to male employees. Zibulo and Kolomela mines have a workforce average age of 35 and 34 respectively. The average age in terms of gender at Zibulo was 36 for male and 33 for female employees. At Kolomela, average age for male employees was 35 and 34 for female employees. Both Zibulo and Kolomela mines have a workforce with basic education (for instance National Senior Certificate in education) as an entry level requirement. This is a significant difference from older mines often referred to as brown fields that still have and recruit employees without matriculation certificates. In terms of race, the demographic distribution is heavily influenced by geographic location of the two mines. As would be expected at Kolomela mine which is based in the Northern Cape there are more Coloured employees (418) than Zibulo located in Mpumalanga with two Coloured employees. There are more black African employees at Kolomela (524) and Zibulo (615) than other racial categories.

The table (Table 1.6) below provides further demographic breakdown in terms of racial categories⁴⁹ at the two mines.

Table 1.6 Racial profile breakdown of employees working for Zibulo and Kolomelamines

Kolomela			Zibulo
Gender & Race	Total	Total	Gender & Race
Female	268	114	Female
African	116	98	African
Coloured	103	1	Coloured
Indian	0	2	Indian
White	49	13	White
Male	854	614	Male
African	408	517	African
Coloured	315	1	Coloured
Indian	0	6	Indian
White	131	90	White
Grand Total	1122	728	Grand Total

In the survey, 186 (see Fig. 1.7) questionnaires were administered to Zibulo and Kolomela employees over a period of six months and the table below shows demographics of the survey participants. The questionnaires were personally administered by the researcher at Zibulo (2015-2016) both on the surface and underground and at Kolomela mine during late 2016 in offices and at the training centre.

Table 1.7 Gender distribution of survey participants from Zibulo and Kolomela mine

	African	Coloured	White	Other	Total
Zibulo					
Males	46	0	5	1	52
Females	16	1	3	1	21
Total	62	1	8	2	73
Kolomela Mine					
Males	55	24	2	4	85
Females	16	11	1	0	28
Total	71	35	3	4	113

⁴⁹Black Africa/African, Coloured, White are historically constructed racial categories and reinforced by the Employment Equity Act No 55 of 1998. They are socially constructed categories and I do not necessarily agree with them. In some instances, I interchangeably use Black Africa/Africa.

In addition to the above, survey results in terms of education levels (Q10) shows that very few indicated that they had no formal education from Zibulo and Kolomela. At Kolomela, 68.1% of the total selected survey participants had either grade 11 or 12 and 54.8% who completed the survey at Zibulo. Furthermore, 4.4% and 9.6% of survey participants from Kolomela and Zibulo respectively indicated in Fig. 1.8, that they had a university degree or post college/university certificate or more. These figures show that broadly, new mines are increasingly employing an educated workforce with matriculation certificates that enables them to read and write.

Table 1.8 Educational levels of survey participants

Kolomela mine	Percent	Zibulo Colliery	Percent
No Formal Education	3.5	No Formal Education	1.4
Grades 8-10	0.9	Grades 8-10	4.1
Grades 11-12	68.1	Grades 11-12	54.8
Diploma	19.5	Diploma	21.9
University Degree	4.4	University Degree	9.6
Other Qualifications	3.5	Other Qualifications	8.2
Total	100	Total	100

In terms of marital status (Q6) of survey respondents, at Zibulo 42.5% indicated that they were married, 49.3% single and 1.4% widowed while at Kolomela 8% respondents indicated that they were divorced, 8.8% widowed or widowers, 35.4 married and 46.9% single. There is a higher number of the sample that participated in the survey indicated that they were single. Table 1.9 below shows the results of survey responses of the participants when they were asked to indicate their marital status.

Table 1.9 Marital status of respondents

Zibulo	Percent	Kolomela	Percent
Married	42.5	Married	35.4
Single	49.3	Single	46.9
Divorced	2.7	Divorced	8
Widow(er)	1.4	Widow(er)	8.8
Other	4.1	Other	0.9
Total	100	Total	100

7.3. Workplace relations

7.3.1. General workers

Survey results reveal that workplaces as absolute spaces have changed in post-apartheid South Africa at least with respect to the two mines under study. New mines' physical layout work space depicts significant improvement from old mines often referred to as brown fields to newer, modern buildings, equipment and machines and new technologies. However, the question is, has this change also positively impacted relational space in terms of workers relationships with each other, immediate supervisors, managers and trade unions? In the survey, Question 67.1 asked the respondents to describe general relations of themselves and co-workers on a scale and the results were as follows: at Zibulo, 95.9% described the relations as good and the remaining 4.1% described them as neither good nor bad and as bad. At Kolomela, 80.5% described the relations as good while 19.5% either fell into the neither good nor bad and bad categories. Therefore, it can be observed that worker relations across the two mines are generally good as shown by the survey's respondent's results. However, follow up questions were posed targeting specific worker groups and the cross-tabulation results are shown in the tables below. It is further broken down according to options selected by black Africans. On the tables that follow, 113 and 73 questionnaires were administered at Kolomela and Zibulo mines respectively. Survey respondents at Kolomela mine constituted the following, 70 black Africans, 35 coloureds, 3 white and 5 identified as other. At the Zibulo 62 were black Africans, 1 coloured, 8 white and 2 identified themselves as other. For further information kindly refer to table 1.7.

Table 1.10 Survey results on Black African responses on Question 71 at Kolomela and Zibulo mines

	KOLOMELA				ZIBULO			
Race	NA	Good	Neither good nor bad	Bad	NA	Good	Neither good nor bad	Bad
African	14.3	60	20	5.7	0	82.3	17.7	0
Coloured	5.7	57.1	22.9	14.3	0	100	0	0
White	0	66.7	0	33.3	0	62.5	20	12.5
Other	0	60	20	20	0	100	0	0

At Kolomela mine, 60% of black Africans indicated that relations between black Africans were good while 82.3% at Zibulo indicated the same. Furthermore, 20% at Kolomela indicated that it was neither good nor bad while 17.7% echoed the same at Zibulo. Evidence presented in the table 1.10 also show that 57.6 of coloured respondents at Kolomela indicated that relations between black Africans were good while 14.3% thought relations were bad. Results on the above table show that 68% of the respondents out of 186 are of the view workplace relations among Black Africans at the two mines are good. Only 4.8% of respondents from both mines think relations among Black African mineworkers are poor. A similar question was posed asking specifically on workplace relations among White employees at Zibulo and Kolomela mine and the table below shows the results.

Table 1.11 Results on Question 71 on Relations between White mineworkers at Kolomela and Zibulo

	KOLOMELA				ZIBULO			
Race	NA	Good	Neither good nor bad	Bad	NA	Good	Neither good nor bad	Bad
African	21.4	47.1	22.9	8.6	4.8	72.6	21	1.6
Coloured	5.7	54.3	31.4	8.6	0	100	0	0
White	0	66.7	0	33.3	0	62.5	12.5	25
Other	0	100	0.9	0	0	100	0	0

Evidence from table 1.11 shows that 47.1% black Africans at Kolomela indicated that relations between white workers were good while 72.6 at Zibulo indicated the same. In addition, 66.7% and

62.5% of white respondents at Kolomela and Zibulo indicated that relations were good amongst themselves respectively. At Kolomela mine, 54.3% of coloured respondents indicated that relations were good while 100% at Zibulo amongst white workers. Furthermore, respondents were asked their views on relations between Black African and White employees. The table below shows the results of their responses.

Table 1.12 Results on Question 71 relations between Black Africans and White employees.

	KOLOMELA				ZIBULO			
Race	NA	Good	Neither good nor bad	Bad	NA	Good	Neither good nor bad	Bad
African	21.4	18.6	41.4	18.6	1.6	16.1	54.8	27.4
Coloured	5.7	34.3	48.6	11.4	0	0	100	0
White	0	66.7	0	33.3	0	50	37.5	12.5
Other	0	20	60	20	0	50	50	0

Interview results show that high figures of 41.4% and 54.8% from Kolomela and Zibulo respectively indicated that relations between black Africans were neither good nor bad. In a country coming from a painful past and with the de-racialisation project underway, the neutral option was the preferred choice. It shows some unwillingness to comment on black and white relations in the workplace. In addition, 18.6% and 27.4% black Africans at Kolomela and Zibulo respectively indicated that relations were bad between black Africans and white workers. Perceived unfair promotions and racially biased treatment were cited as the motivating factors for their choices. On the other hand, 33.3% and 12.5% of white respondents at Kolomela and Zibulo mines indicated that relations were bad. However, qualitative results show something different as will be shown in the next chapter.

Table 1.13 Results on Q71 on relations between Coloured and White employees.

	KOLOMELA				ZIBULO			
Race	NA	Good	Neither good nor bad	Bad	NA	Good	Neither good nor bad	Bad
African	13.3	28.3	16.8	3.5	25.8	41.9	30.6	1.6
Coloured	1.8	10.6	15	3.5	0	0	100	0
White	0	1.8	0	0.9	12.5	62.5	12.5	12.5
Other	0	3.5	0	0.9	50	50	0	0

When survey respondents were asked to describe the relations between Coloured and White employees at Kolomela and Zibulo, the following results were obtained as shown by the cross-tabulation table above. At Zibulo more than 50% of the respondents indicated that relations were good and 30.6% were of the view that relations were neither good nor bad between Coloured and White employees. Cross tabulation results from Zibulo may not be of significance since at the time of data collection, the mine had only two-Coloured employees. However, this does not suggest that their treatment in the workplace is insignificant but rather fellow mineworkers interacted less with them and also work in offices as officials. Whereas at Kolomela, Coloured employees represent the second largest category of employees working for the mine. At Kolomela mine, 10.6% of coloured respondents described relations between Coloured and White workers as good followed by 15% who indicated that relations were neither good nor bad and 3.5% of the respondents indicated that existing relations were bad. However, the overall results show that the participants are of the view that relations between Coloured and White employees are good.

In terms of relations between black Africans and coloured workers, 28.6% and 45.2% at Kolomela and Zibulo mines indicated that relations were good between the two groups while 20% and 1.6% at Kolomela and Zibulo respectively were not good. The slightly high figure at Kolomela confirms findings from the qualitative interviews. In the same vein, 17.2% coloured respondents at Kolomela mine indicated that relations were bad between black Africans and coloured workers. Qualitative interview results from selected participants from Kolomela mine reveal uneasiness between Black Africans and Coloured employees. At Kolomela mine for instance, some Black African employees are of the view that Coloured employees ‘double dip’ for example, when they are with Black African colleagues, they look down upon Black Africans based on skin colour yet when it comes to benefits of equity they want to be classified as Historically Disadvantaged South Africans (HDSA). Furthermore, it is alleged that when Coloured employees are with White employees, they side with them at the expense of Black Africans and receive perceived favours. In some ways there are allegations of racism but when one requests for concrete examples nothing was provided.

Table 1.14 Results on Question 71 on work relations between Black Africans and Coloureds at the two mines

	KOLOMELA				ZIBULO			
Race	NA	Good	Neither good nor bad	Bad	NA	Good	Neither good nor bad	Bad
African	20	28.6	31.4	20	19	45.2	28.8	1.6
Coloured	5.7	45.7	31.4	17.2	0	100	0	0
White	0	66.7	0	33.3	25	50	12.5	12.5
Other	40	40	0	20	0	50	0	50

Table 1.15 Results on Question 71 of workplace relations among Coloured employees at the two mines

	KOLOMELA				ZIBULO			
Race	NA	Good	Neither good nor bad	Bad	NA	Good	Neither good nor bad	Bad
African	21.4	41.4	28.6	8.6	27.4	62.9	9.7	0
Coloured	5.7	54.3	28.6	11.4	0	100	0	0
White	0	66.7	0	33.3	12.5	62.5	12.5	12.5
Other	0	100	0	0	50	50	0	0

The table above shows the results on respondents' responses on their views on workplace relations among Kolomela and Zibulo coloured employees. Of interest are response from Kolomela where 54.3% coloured respondents indicated that relations were good amongst themselves. Also, 11.4% indicated that relations were bad amongst themselves and is consistent with findings from qualitative data.

In light of the survey results reflected in the tables above, a number of issues can be reflected on. At both Kolomela and Zibulo mines, survey results reveal that workplace relations are overall good as evidenced by the above descriptive statistics. These results are consistent with similar findings in a study conducted for the Mine Health and Safety Council (2017) on Culture Transformation Framework that was looking at leadership programs and efforts to eliminate racial and gender discrimination in mining workplaces. Results showed that mineworkers who participated the large-scale study were of the view workplace relations had improved especially

between Black Africans and Whites. This is further confirmed by findings from qualitative interviews where for instance workers emphasise respect and taking care of each other. This is illustrated in the interview except below:

“...we respect each other but there is still room from improvement and actually understanding each other’s rules...we are a family. We do respect each other, and we really look after each other...” (Mary: Black African Female (32) Official, Zibulo)

At Zibulo general relations based on observations and close interactions during fieldwork are mutual and good among employees. Elements of friendship were visible through greetings, jokes and laughs both on surface and underground. For instance, the moment the mineworkers were in the cage (carrying a maximum of 80 people) lowering them underground to their sections, it was just laughter and jokes. The big cage as mobile space geared to transport labour to various points of production also serves as an arena of production of social relations. Once underground, employees would bundle into different trucks converted into underground buses to be taken to nine different sections. Everything seemed normal underground (150m approx.). It is in the section where unity and closeness were glaring. A typical section would have between 8 and 10 team members including the Face Boss or the miner. Before the start of a shift, the whole team would converge in the waiting area and go through a level one meeting (caucus). In this meeting (safety talk), work of the day, task allocation, cutting sequence and expected targets would be done. It is during this period that the crew check on each other through ‘joys and sorrows.’ It is when crew members are asked how they are feeling, their families among other things. I observed a sense of oneness and family character of a crew in a section. For instance, in one of the shifts I attended, one of the crew members was celebrating his birthday. There was a cake, meat and cold drinks and the food was shared equally and happily as they celebrated. All these things happen while the Miner or Face boss is outlining the shift’s targets, safety issues and task allocations.

Considering the above, it was observed that underground, with specific reference to the section I worked for two months, there is unity and respect. The crew members behaved as if they were a family as evidenced by sharing of food, checking on each other’s health among other things. Such acts depict the production of social relations in spatial structures meant for economic production. Life for the workers working underground seems normal and it is a place that they spend most of their time as opposed to being at home. This makes mutual relations fundamental for team work

and watching each other given the hazards underground. One of the participants stated the following in terms of how crew members need each other:

“Mostly we don’t have problems because we become like friends because we spend a lot of hours at work together...we try to sort out differences and get into good books. It has a bearing on safety in that we may find ourselves working underground together for the rest of our lives.” (Eugene: Black African Male (36), Roof Bolt Operator, Zibulo)

In light of the above, a mining section underground as absolute space (Harvey, 2006) is a site of production and at the same time relational space where social relations are produced, negotiated and reproduced. This evidenced by the need for mine workers to have mutual friendship, team work and unity to meet production targets and be each other’s watcher in terms of safety underground. Eugene’s comments reveal the importance healthy worker relations in the workplace especially underground given the risks and hazards that exist. This does not suggest that on surface for instance at Zibulo there are no hazards, but rather, underground shafts pose a great threat because of existence of methane, possible fall of ground, outbreak of fire among other things.

On the other hand, at Kolomela mine where 80.5% of 113 respondents that participated in the survey indicated that relations among co-workers are good, qualitative interviews confirm this finding. Kolomela mine is a relatively new mine with a young workforce and most of the participants indicated that relations between themselves at Kolomela were good. Interview participants are of the view that they could only comment relations with their teams/crew in a section and based on that relations are good as noted below:

“Relations between workers are great though here and there one may pick up some unhappiness and disgruntlement and change in attitude...due to some restructuring that recently happened...” (Themba: black African Male (29) Plant, Kolomela)

Themba’s comments are further corroborated by another female who participated in the interviews who noted the following below:

“In our shift, our relationship is like we are brothers and sisters...in our group we always together at training and after training shift we have like a gathering bring and braai or whatever. We drink together, talk to each other etc. and we end up talking about personal issues and how to assist each other” (Georgina: Coloured Female (30) Drilling Operator, Kolomela)

The above sentiments echo the notion that workplace relations are located within the arena they unfold. The mutual relations that workers have developed are bound by workplace policies and procedures underpinned by company values and broader legislation. The workers relationships at work in terms of production teams do not just end at the mine but extend into their social lives as elucidated Georgina's comments. Workplace teams seem to be fostering long life friendships where employees are able to share their personal lives together and offer each other advice when needed. Of course, such kind of friendship and unity does not permeate across all shifts as indicated by one interview participant that some shifts are difficult to work in because of divisions and lack of respect for each. Also, in some instances generational gaps and cultural differences play a pivotal role in shaping workplace relations and at times create cleavages.

Just like at Zibulo, at Kolomela, any shift begins with a pre-shift meeting (caucus) that can last but not exceed 20 minutes. A typical caucus meeting at the mining operations for instance Load and Haul (Ore and Waste) can have a team of 40 to 53 operators. The caucus will start with a word of prayer, recitation of the safety creed, work outline and plan, task allocation, safety talk, joys and sorrows, among other things, are outlined. Pre-shift meetings play a fundamental role in fostering togetherness in a section and a team. For instance, joys and sorrows is a platform for co-workers to share anything that happened and has brought joy in their lives and at the same time things or incidents that have brought sorrow in their lives. Sharing of such stories in some ways promotes solidarity and at the same time focusing workers on the task to be completed in the shift in an environment that is risky and dangerous. During one of the pre-shifts meetings chaired by the Foreman and his deputy, a production controller complained that he did not have water in his house after he had paid at the vending machines. He used the joys and sorrows platform to express his frustration and anger and got sympathy from some co-workers while others brought laughter into it. From an observer's point of view, the platform enables workers to clear their minds for those with sorrow while those with good news inspire others and bring happiness to the team.

On the other hand, the pre-shift meeting serves as platform for workers to bring queries to their supervisors on work related matters such as training or bonuses. In the same vein, the platform enables the incoming shift to be briefed on the previous shift's achieved production targets and what they seek to accomplish. It is a communication platform from below and above for either party hence the foreman plays an important linking role between workers and management. All

this helps team members to focus and have a sense of belonging before boarding their individual trucks and machines that are highly alienating. In light of the findings from both Kolomela and Zibulo, broadly speaking, workplace relations among workers at the two mines are good as reflected by Q67.1 survey results and qualitative findings. However, it will be myopic to see workers as a homogenous body and ignore the differences in terms of gender, race and other categories and the dynamics they bring into the workplace.

7.3.2. Black African versus White employees and Coloured versus Coloured employees

A closer look at these results in terms of racial categories allow a number of issues to be flagged. These include, at both mines, relations between black African and White employees, Coloured and black African employees especially at Kolomela and relations among coloured employees at Kolomela as well. The question of racial relations within post-apartheid workplaces remains pertinent given the history of South Africa. This is aptly captured by Von Holdt's (2005) apartheid workplace regimes. It is more than 22 years since South Africa attained democracy and one would think workplaces and attitudes toward each other in terms of race and gender have changed for the better especially between black Africans and White workers. This is in the context of where racist and discriminative pieces of legislation have been repealed and enacted democratic labour laws (Bezuidenhout, 2005). Survey and interview results at Kolomela and Zibulo mines suggest that poor relations between White and black African employees still exist as evidenced by 'perceived racial discrimination.' When participants were asked to describe relations between black Africans and White employees, at Kolomela 19.5% participants described them as bad while at Zibulo 24.7% of 73 echoed the same sentiment. These results are also confirmed by qualitative responses elicited from in-depth interviews.

Participants from Zibulo indicated that relations have greatly improved in comparison to the apartheid period though there are still some pockets resisting change. Relations between black African and White employees are said to be based on mistrust and white supremacy hence undermining of black African counterparts. Evidence from the qualitative responses from Zibulo show that relations among all workers including White employees are good as all employees relate to each other as colleagues and it ends there. Black African workers are of the view some pockets of racism are still existent in a subtle way for instance as shown below:

“...the way in which we interact with these racists there is still elements of supremacy to show that a white person is better than a black person...relationships are good, they are good. People relate very well as colleagues. There is obvious some pockets you know. There is room for improvement ...” (Bruce: black African male (31) Engineering, Zibulo)

The same sentiments were echoed at Kolomela, where one participant noted that relations between black Africans and White employees are no longer based on trust, but just as colleagues. The participant comments that one cannot directly label White employees as racist but rather they do not trust a black African with responsibilities for instance Themba explains:

“...there is no confidence in Black people especially from White employees. When my boss who is White sends me to a meeting because she has confidence in me. When I attend such meetings on her behalf someone can just say after the meeting, don’t forget to inform your boss...yet am there on her behalf. To me it’s just a reminder of that, that perception is still there...and before you have arrived back and made a report, somebody has already called updating your White boss...there young black Africans (in the company) that are hurt with it...”

Findings point toward high levels of lack of trust by White employees of some Black African colleagues in the workplace. This can result in prejudice and creates unfavourable working conditions. It generates negative perceptions within the workplace and consequently, strained workplace relations. Other participants at Kolomela further noted that this lack of belief and trust in black African colleagues by White employees generate tensions as those seen inferior feel undermined in terms of their ability to execute tasks. Themba noted the following:

“My thing is I don’t like somebody who insults my intelligence, you understand. So, when they send emails and carbon copy her (supervisor) I respond in a firm way (I don’t insult people) to bring back the person in line...I know what am doing and best at what I do.”

At Zibulo, participants noted that relations between White and black Africans are not that good because the former avoid mixing with the latter. For instance, at the mine, a larger population of White employees are found in the engineering section and they occupy various levels. There are no White employees who work full-time underground in the mining section except for a few shift bosses. One participant observed the following:

“Aaah race issue is always there. Here separation is still there...you got a feeling that they (some White employees) say, we want to have our own office, corner...across all levels.

From my shift, the Out-bye Shift bosses have their own office at the corner...its Whites. We have got Black African Out-bye Shift Bosses, they are not there (at that office) but here...they sit here (where majority of Shift Bosses sit according to their sections and shifts). That's how it feels. If you going to be in a place that you feel uncomfortable with people, then there is a problem..." (Lerato: black African Female (27) Mining, Zibulo)

Findings at both mines show that workplace relations have significantly changed aided by new labour laws and companies redefining and branding themselves with democratic values. However, interview participants confirmed that, subtle exclusionary practices by some White employees on black Africans still exist. These exclusionary practices make black Africans feel uncomfortable hence potentially straining workplace relations. One can comment that there is change in terms of racial domination and discrimination that Von Holdt (2005) observed at Highveld Steel except for few remnants highlighted in the interviews. However, these issues are not only confined to White and black Africans. There are issues between Coloured and black Africans and among Coloured employees themselves especially at Kolomela mine. Findings from both survey results and interviews reveal that relations between Coloured and black Africans in some pockets are not that great due to the former's alleged absenteeism tendencies and also siding with White employees and management. Coloured employees are accused of frequent absenteeism from work whenever they get bonuses or their salaries. Absenteeism in a section increases the workload of the present crew members and this does not sit well with black Africans. Furthermore, absenteeism has negative implications on a shift and sections attendance score when it gets to KOPEX. KOPEX is an abbreviation for Kolomela Operational Excellence and it is an operating model that Kumba Iron devised for business execution system (more of KOPEX to be discussed later). Also, Coloured employees are accused in some instances by black African employees for siding with White workers and getting favours instead of being in solidarity with black Africans, yet when it comes to benefits, they still want to enjoy the category of Historically Disadvantaged South Africans.

At Kolomela, there are sentiments of divisions amongst the Coloured employees. These divisions are embedded on the question of belonging. Just like black South Africans who come from different groupings either based on ethnicity, tribes or other categories, the Coloured community seem to experience a similar predicament. There are Coloured workers at Kolomela who claim to be the original inhabitants of Postmasburg and contend that the mine must not hire prospective employees from other places outside Postmasburg. Coloured workers from other regions

especially Namaqualand live and work in fear because of accusations of stealing local jobs, frequently absent from work and that they bring drug and alcohol abuse habits due to proximity to the Western Cape province (this further elaborated in the coming chapter). Such accusations have led to some Coloured workers living in fear both at the mine and community. At the mine it is different in that company policies do not condone such conduct. Below is an account provided by a recognised organised labour representative at Kolomela:

“It’s more of the locals against non-locals like for example, this is mostly a coloured thing. So, it’s the Coloureds against others which is a bit of a concern as well because they feel they own the mine... There is a lot of tension regarding this from the community and some internally (mine). I don’t agree with that and I think the company does a lot to empower locals. When asked about how the victims feel, its different, they are scared...because they (local Coloured employees) am going to catch you after work. Things like that especially the guys living in Postdene. For some other reasons, that’s (Postdene) where the biggest arguments are because it’s mostly Coloureds who live there. So, you know its Namaqualand Coloureds and Postmasburg Coloureds, yet they are the same, we are the same working for the same company. But Postmasburg Coloureds don’t see it like that...” (Rosemary: White female (30) trade union rep, Kolomela)

The question of belonging raises serious issues especially when seen in the context of one group claiming entitlement to opportunities and resources. Politics of belonging (Yuval-Davis, 2011) is a complicated and messy political project that results in heightened identities that promote exclusion of certain group(s) from accessing and another preferred group to have access to such resources or opportunities. It is therefore unfortunate to find such politics playing out in the workplace. On the other hand, it shows that space is a contested terrain as different groups seek to gain control of such. In terms of Harvey’s (2006) notion of relational space, the mine (absolute space) is an arena that enables some workers like Coloureds to pursue their visions, dreams and frustrations through entitlement project that seeks to exclude fellow workmates. The post-apartheid order seems to be in constant shift into new terrains of contestations but without having improved the past (apartheid workplace regime).

7.3.3. Trade union relations with workers and management

One cannot ignore the role that Black trade unions played in quest for workplace democratisation and a democratic organizational culture (Buhlungu, 2009) within and in part dismantling toxic and

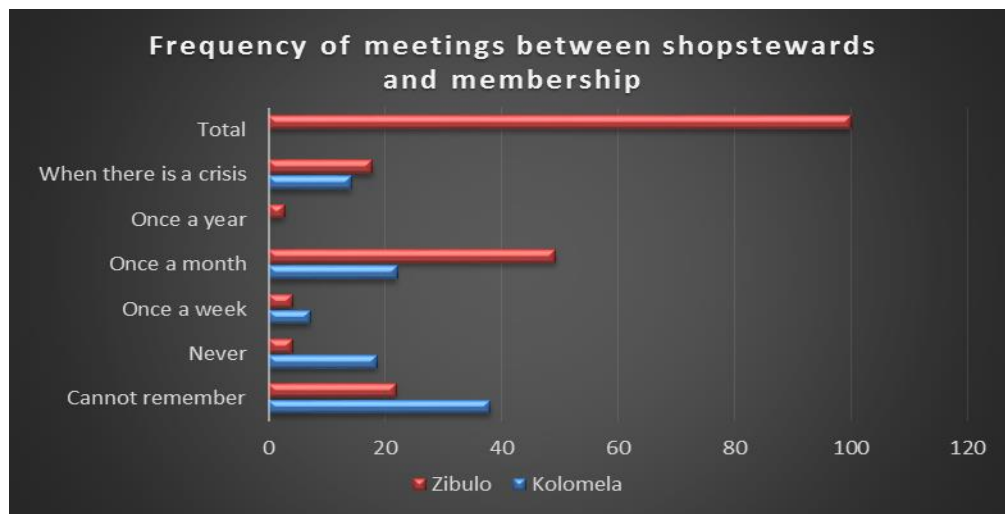
abusive apartheid workplace order. The current labour relations regime in South Africa can be described as having been born through collective efforts of the shop floor workers, trade unions and the broader civil society (Von Holdt, 2003; Bendix, 2015). It is therefore imperative to reflect on workplace relations between trade unions and members and also with management as they articulate and defend workers' rights and mutual interests. In the survey questionnaire, respondents were asked whether their respective trade union association carried out mandates from the workers, the following results below were observed. At Kolomela, more than 35% of the respondents agreed and strongly agreed that their respective trade unions executed mandates accordingly while more than 61% at Zibulo indicated the same. Furthermore, more than 16% of the respondents at Kolomela did not agree or strongly disagreed that the union was carrying mandates as instructed by membership as compared to Zibulo's 8%. Results seem to suggest that mineworkers at Zibulo believe more in their trade union leadership as compared to that of Kolomela where 30% decided to be neutral. This could be based on the achievements of the trade union leadership. However, at Kolomela mine, there are four trade unions (National Union of Mineworkers, Solidarity, AMCU and UASA⁵⁰) as compared to Zibulo's three (NUM, Solidarity and UASA). Of significance is the presence of Association of Mineworkers and Construction Union at Kolomela and this could have an impact on how participants responded to the question. In addition, survey respondents were asked if they had shop stewards that represented their interests in the workplace (Q73); 72.6% and 90% at Kolomela and Zibulo respectively indicated that they had shop stewards. While 10.6% and 8.4% indicated that they did not have shop stewards who represented their interests at Kolomela and Zibulo respectively. The results show that mineworkers who participated in the study are generally happy with their respective trade unions and are executing mandates they assign to them.

In addition to the above, the participating mineworkers were asked on the frequency of meetings with shop stewards that are held beside the general mass meetings (Q78), 38.1% at Kolomela indicated that they could not remember while 21.9% at Zibulo were of the same view. An overwhelming 49.3% at Zibulo as compared to Kolomela's 22% indicated that meetings with shop stewards are held on a monthly basis as indicated by the graph below. Also, 14.2% and 17.8% of the respondents from Kolomela and Zibulo respectively indicated that meetings with shop stewards are held when there is a crisis. Ability of shop stewards both full-time and part-time to

⁵⁰UASA Union formerly, United Association of South Africa
AMCU Association of Mineworkers and Construction Union

frequently meet and service the needs of the membership is important as fulfils trade union roles on protecting and defending worker rights and mutual interest. At the two mines, there is a sharp distinction between the locations of the trade unions with recognition rights. National Union Mineworkers branch offices at Zibulo where full-time and part-time officials sit are located at the edge of and outside of the main building that houses mining production officials like Mine captains, Engineers, Shift Bosses and HR officials. Their offices are close to the main cage that lowers and hoists mineworkers underground whereas at Kolomela, NUM offices are in the main administration building and share same passage with the mine's management. At face value it raises eyebrows as some labour scholars have argued that NUM has been accused by its membership for being in bed with management (Moodie, 2010) and as a result losing touch with its rank and file (Buhlungu, 2010).

Fig 1.21 Frequency of meetings called by shop stewards



Buhlungu (2009) comments that shop stewards formed the bulwark of black African trade unions in the apartheid through transition period into the democratic era. At the two mining companies, based on survey and interview responses, unionised workers from NUM were satisfied with the performance of elected and full-time union officials in terms up holding democratic organisational culture underpinned by worker control (Buhlungu, 2009) principles as opposed to anti-democratic nature that characterises unions in the post-apartheid period (Buhlungu, 2010).

Furthermore, workers were asked their views on the relationship that exists between trade unions and the management in their respective workplaces. More than 26% from both mines described the trade union relations with their respective management as good while 36.3% at Kolomela in comparison to 34.2% at Zibulo indicated they were neutral. A combined 26.5% at Kolomela and 34.3% at Zibulo indicated that relations between trade unions and management ranged from bad to very bad. The almost equal responses in terms of the category of responses from the survey seem to suggest an equalising effect on organised labour and mine management relations. Informal conversations with mineworkers reveal that they believe the unions consult with them, get mandates and have been executing them accordingly. Findings show that mineworkers believe that trade unions possess the power to protect and defend their interests as highlighted in the interview extract below:

“I think unions have power and employees believe unions have more power than the company itself. This perception is more like a reality in the way they (members) so believe that if union says this isn’t this person’s job description and the company will say fine but remember workplace rules says for instance as a Supervisor, I can also give you reasonable work besides your job description...they will say, let me go and consult with my union. (Lab Analyst, Kolomela)

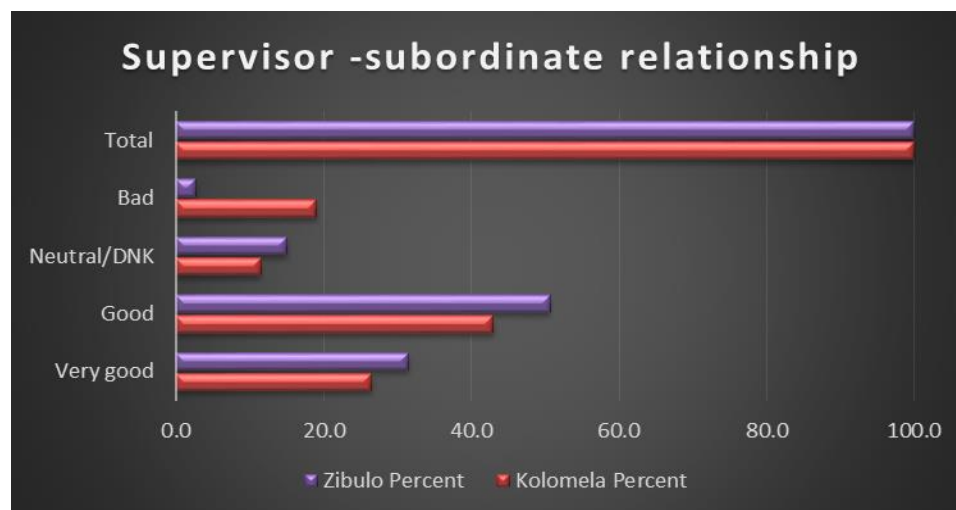
The extract above depicts daily contestations that exist between mineworkers, their immediate supervisors and concerned trade unions as battle for control of labour and space. Of significance, is the continued faith that the rank and file have in trade unions in terms of their individual and workplace rights and solidify relations with organised labour. The quote shows that trade unions through elected officials continue to play a significant role in everyday lives of mineworkers in the workplace through servicing worker needs. Thus, the two new mines understudy have created a dynamic workplace that allows contestation between labour and capital but at the same time being able to find common grounds that enable both capital and labour to achieve their vision.

7.3.4. Supervisor–worker relations

Supervisors play a fundamental role in terms of workplace relations between workers at various levels and management. They act as a daily interface between the company and workers. They ensure that work is done accordingly; supervisors explain tasks to subordinates, provide guidance, listen to the teams they lead among other things. Unity of mineworkers, for instance, in any work group hinges on the abilities of first line managers to relate with their teams and relay such to their

superiors. As has been shown in the literature review, supervisor -subordinate relations during the apartheid period were characterised by violence and racial discrimination by better paid white supervisors on Black African migrant workers (Moodie, 1994; Bendix, 2015; Von Holdt, 2003, 2005). Given the democratic changes that have taken place since 1994, participants in this study from the two new mines under study we asked to describe the relationship they have with their immediate supervisors and the chart and box (Fig 1.22 and 1.23) below illustrate the responses.

Fig 1.22 Survey responses to Q 49 that asked participants to describe relations with their immediate supervisor



The table above reveals that at Kolomela mine, over 69% of 113 respondents described their relationships in the workplace with their supervisors as good while at Zibulo it was 82.2% of 73 respondents. Only 2.7% at Zibulo described relationships with their supervisors as bad while at Kolomela a significant 19.0% said it was bad. At Kolomela and Zibulo, 11.5% and 15.1% said they were neutral/refused to answer the question or simply did not know respectively. These survey results show that at least based on the participants responses, relationships between workers and supervisors are good to very good which is quite positive as in some ways show that there is a shift from old strained workplace relations of the past. Below are some of the qualitative responses rendered by respondents when they were asked a follow up question:

Fig 1.23 Positive and negative comments about supervisors

Positive • He cares of our needs-help us wherever he can. He respects us and explain when we don't understand; we work well together. He understands his people and works hard • He listens when I tell him my problems, always available and helping on my daily tasks if there is something I don't understand and encourages me to come with any new ideas& gives leave • There was a time he disciplined me but there were no hard feelings, we talk, and he advises me • We have a common understanding on most of the times due to our technical background and makes relationship to be good. We talk the same technical language about work • The way he addresses us is always on point and on time. We do good of what he expects us of • because he has never taken me down for misconduct or as complain • Opportunities are given to explore; He is a very good mentor; he has been in the same programme that I am currently in; He is a good listener and there is trust and mutual understanding • We understand each other, and he is always happy. The supervisor leads by example • I respect him/her, follow his/her instructions. So far, I haven't seen a complaint form filed against me; Professional i.e. I know my place and he knows his too. We have an understanding • Communication between the supervisor and I is neutral as he understands me, and he makes me enjoy the work that I am doing and advises us a lot if we seem to be lacking with our job • He is approachable, willing to help. he has knowledge Negative • He doesn't encourage me. He always sees wrong things on me but good things none is taken into consideration; he has his favourite coloureds of his race. He gossips, he is also a liar • He does not develop us. He only develops his homeboys or friends • My supervisor evaluates me as new employee. He treats me like somebody without human feelings, emotions. The way he approaches me, it is really out of order. He is very rude. He doesn't know how to talk to subordinates • There is a form of discrimination based on skin pigment. The foreman/supervisor favours those who are lighter in complexion with shiny hair or those who are darker and able to speak native language (Afrikaans) • The title of being a supervisor is all in his head. His way or no way. Know nothing about managing people, let alone developing us; Seems like he does not care for us and only for production • He doesn't take advises, he is very arrogant& practices nepotism
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Given the above responses on respondents' views of their supervisors at Kolomela and Zibulo, the same questions were asked during qualitative in-depth interviews with ordinary workers and in some instance supervisors like Mine Overseer, Shift Bosses, Face Boss, Foremen, Production Controllers and some middle managers. The findings from these interviews reveal that relationships between workers and supervisors are complex, vary from operation to operation and also has to do with the supervisor's personality, leadership and management skills. At Kolomela, labour union officials pointed out this fact and noted that supervisor-subordinate relations intersect with a number of factors and in some instances creating tensions as highlighted below:

“...there are times when there are tensions...let’s make an example, in a section you have a Coloured supervisor and you would have your other races the Blacks and the likes feeling small favouritism learning towards Coloureds. Likewise, if you are having a Black supervisor you will have Coloureds or Whites feeling he/she is favouring Blacks and so is with White supervisors...in terms of this, there are tensions sometimes in terms of race but what aggravates it its issues of access to opportunities...courses, development. It’s about promotions. So once regardless of merit a White man promotes a White man, Black to Black...it’s always seen in a racial interpretation...” (Official 1: Recognised trade union official)

The above quote shows the complexity of dealing with different workers in a team who may have different projects that may be based on identity among other things. Perceptions become a vehicle that fuels tensions in the workplace as it erases reason and facts just like how the race card be used conveniently when it suits either group as in the case above. Nonetheless, one cannot ignore workforce dissatisfaction when certain things are perceived as unfair.

On the other hand, the life of a supervisor is not easy as they must meet production targets in safe way and at the same time be able to handle different worker personalities. To put supervisor and work team relations into context, it is worthwhile to provide how the life of the former unravels on shift. At Zibulo and Kolomela, the researcher for quite some time was accompanying Foremen (Kolomela) and Face Boss (underground Zibulo) observing what they do in a shift, listening to things they mention to subordinates and to their superiors. Information that I had heard and seen was then interrogated through informal conversations and formal interviews. For instance, at Zibulo during the period of data collection, the colliery operated on a number of shift systems but in terms of mining it was a three-shift system which I have been changed now to a two-shift system. On the surface, officials and others on permanent day shift worked from 7am to 4pm and others on 6am to 6pm. For those who worked underground it was 7am to 3pm, 4pm to 12 midnight and 12 midnight to 7am. For underground supervisors and managers, their day starts 2-3 hours before start of the actual shift. Once on the mine, they attend a level one meeting with Section Shift bosses, artisans, electricians. In this meeting, Face Bosses/Miners get updates on what has been happening in the section, what needs to be done, issues of safety, cutting sequence and target, availability of machinery and equipment and other general communication from superiors. In addition, before a Face boss boards the cage that takes all workers underground, he/she has to ensure that gloves, dust masks and other necessities required in a section are with them otherwise production will be

delayed. Once in the section, that is where the caucus takes place and completion of the fireman's report and followed by a safety inspection into the coal face checking GDI levels (methane) roof support, water level and the panel that the previous shift has cut. During the shift, the Face Boss constantly monitors work in the entire section, coming to the waiting area and updating the cutting the cutting sequence and constant calls to the production control to provide metres that have been cut. It is in these kinds of spaces and circumstances that the researcher conducted observations and informal conversations.

At Kolomela mine, specifically within mining operations, the Foreman working on day shift has to be at the bus stop by 4:30 am in the morning where the mine's bus will take them to Kolomela mine. Upon arrival at the mine, the foreman works on paper work and filing and conducts a pre-shift inspection in the pits with the previous shift's foreman on the work that has been done and work that is still outstanding. The update also entails information of identified or potential hazards and how they have been controlled or managed and any other incidents. At half past 6 in the morning, all foremen, Mining Overseers, Surveyors, geologists, planning personnel, production manager and the mining manager, when available, meet for a shift change meeting. Production related matters are discussed in terms of targets, hazards, availability of machinery and equipment, safety and above activities of the day in terms of drilling, blasting, loading and hauling and construction. Informal conversations reveal that most foremen prefer working at night and not day shift because there many disturbances in terms of visitations by superiors, intermittent meetings among other things. After restructuring, Production Controllers have been introduced to assist foremen in terms of transporting operators to different work points in the pits and help in making production related decisions in consultation with foremen. The description above shows some aspects of the first line managers' work life in specific sections and importantly providing their location in the labour process. Given the positive and negative remarks about supervisors, what are the responses and reflections of supervisors on their work and interactions with subordinates?

Findings emerging from formal interviews and informal conversations with different first line managers seem to suggest that their work is frustrating given that they have to satisfy two masters at once. This includes the superiors in terms of ensuring that work and targets are achieved in a safe and efficient way and also motivating workers to come to work on time, work safely and remain positive and alert in the workplace. The nexus of dealing with various levels in the politics

of production and maintenance of workplace relations is complex and draining for some foremen. Evidence from findings reveals that some operators do not take their work and daily assigned tasks seriously and responsibly. Some supervisors argue that they have to constantly monitor operators something an adult can do on his/her own as depicted in the quote below:

“Generally, most operators are just there to make numbers and do not take their work seriously...most operators are not involved. And do not take responsibility of their job...have to be constantly monitoring them...watch them as they keep on repeating the same things...” (Thabo, black African Male Foreman, Kolomela)

In elaborating some the things that operators do, interviewed supervisors point out that issues of safety like SLAM (Stop Look Assess Manage), lockouts and use of other critical controls remain a challenge. Failure to observe such and adhere to for instance safety rules exposes workers to safety risks among other things. Supervisors and the guilty party end up being charged in the event of incidents or fatalities. As a result, supervisors take a tough, fair stance to ensure that subordinates comply with requirements of procedures and policy in their workstation. At Zibulo, there were few cases directly raised against immediate supervisors like Face Bosses/Miners but against emerging young black section managers who are seen as ruthless and unforgiving when workers make mistakes both on the surface and underground. Listening to ordinary workers conversations in one section revealed a gloomy atmosphere where they were counting and identifying fellow workers that had been charged and dismissed by e.g. Safety officers, Mine Captains, Section Engineers among others for various breaches. The repeated phrase was “siyaphela madoda lapha” (we are getting finished here in the mine). Some of the offenses would include coming to work drunk, failing to do a lock out, SLAM, not wearing complete PPE (and other compliance issues) and absenteeism. One official noted the following in terms of young supervisors and managers in terms of handling employee relations:

“Sometimes it becomes a challenge when you have a management that it is too young. Sometimes experience does help because at least you are experienced, and you know how to handle people. You know that there are other ways of solving problems other than discipline (charging a worker and making them complete a charge sheet). So, experience in that sense does count because when I am young, I feel am full of power, I know have got all authority whatever. So, you may mess up complaints but a grown-uppers on, experienced person will know there are other ways one can tackle the situation...these

are the kind of challenges that result in the supervisor –subordinate relation not being good or strained.” (Katlego, black African Male Official (36), Zibulo)

In many instances it is not taken well by subordinates who in some instances are young and have different competing personalities. Relations get strained and hence become complicated. In instances where the supervisor is young, the age factor does not help the situation. It was observed that young supervisors despite being competent, their lack of experience in handling human relations and managing conflict often result in supervisors charging subordinates when they make mistakes, yet an alternative course of action would have been viable as alluded to by Katlego in the above quote. The complex strained first line management and worker relations are further worsened by the fact the young workforce is well aware of its individual rights and in some instances seek to apply such rights unnecessarily. This was cited by various interview participants with the regard to the issuing of leave days (family responsibility and sick leave). The question of supervisors granting or not granting leave days is a contentious one especially within the young workforce. At both mines, findings show that most young mine workers know their workplace rights especially in relation to Basic Conditions of Employment Act No 75 of 1997, Skills Development Act No 97 of 1998, Labour Relations Act No 66 of 1995 and Mine Health and Safety Act No 29 of 1996 among others. The fact that the young workforce is knowledgeable of their rights within the workforce is a positive achievement given the fact that during the colonial and apartheid periods, Black African workers’ rights were trampled upon resulting in abuses, exploitation and discrimination in the workplace (Allen, 1992; 2003a, Bendix 2010). Workers now have rights and they know them and can exercise them when the need arises. Findings seem to reveal that workers, especially the young workforce, tend to exercise their rights where it is not necessary especially when making request for leave days (family responsibility of sick leave) and the supervisor refuses as noted below:

“Young workforce knows their rights but sometimes want to apply those rights in the wrong places where it does not apply. Just because I know my rights and am entitled to this, I expect things to be...This is how clashes emerge between them (workforce) and their supervisors...Just because I know, I have and entitled to family responsibility leave, should my girlfriend fall pregnant, I have 6 days family responsibility leave. So, I can take them, yet the supervisor can advise and say, I have a shortage of staff and not that I am denying you but, can’t you wait or at least make it 3 days instead of the 6 you want? You might need those 3 days in future. Maybe a child will get sick etc. so...and the

employee will say no. I know my rights, the contract I signed says I have 6 days and I want to take them all.” (Katlego, Zibulo)

Request for leave days (sick and family responsibility leave) is a contentious issue that has the potential to ruin workplace relations between supervisors and subordinates especially in mines. The shift system in some ways takes away social lives of mineworkers as the biological clock is constantly shuffled leading to fatigue, among things. This does not suggest that mineworkers do not have days off. At every shift change, depending with the shift cycle in place, mineworkers get a couple of days off before starting a new shift. The quote above shows the kind of challenges both a supervisor and an ordinary worker have to deal with. At one end, supervisors have to imbue in subordinates an understanding of the mine’s business model and ensure the availability of sufficient labour, machines and meeting of targets safely. On the other end, workers are not machines but human beings who are interested in social reproduction (Herod, 2012) thus seek to exploit opportunities for instance get leave days and attend family issues. The need to play a balancing role in terms of ensuring company interest are achieved and keeping workers happy is a daunting exercise. Findings show that supervisors are of the view that workers do not understand the business part of the company and many do not care about the company. This plays out when it gets to the application for leave days that are not approved, and the concerned worker gets frustrated and hence strain supervisor-subordinate relations as highlighted below:

“It’s not always easy to give an operator off (leave). That’s where the Operators don’t understand for instance because someone has already gotten one and not here...they cannot see the bigger picture. They already take it in the negative that the Foreman or Production controller doesn’t want to give leave but only thinking of production. It is end to end and as a Foreman, you must plan your shift for instance you have 6 machines...if someone is already sick and hence shortage of Operators, how can you give the other leave? That is where they get frustrated. They don’t see the bigger picture. Your No is always a bad no.” (Thabo, black African Male Foreman, Kolomela)

When the team is short in terms of labour compliment, it means the present team members have more workload which frustrates them. Therefore, it is in contexts like these that supervisors attempt to manage the teams they lead by regulating the issuing of leave days consequently straining relationships. By denying or approving few days as opposed to those applied for, supervisors exert their control over labour. In order to extract surplus value, capital through leave

days regulation seeks to emasculate labour agency and extract maximum productivity. This resonates with labour geographers' standpoint that capital seeks to control and regulate labour as shown by control of leave days, fatigue breaks among others (Herod, 2012; Coe and Jordhus-Lier, 2010; Coe, 2012). Such attempts to control and regulate labour are met with various forms and levels of resistance as evidenced by workers manipulation of sick leave and sick notes. At Zibulo and Kolomela mines, when supervisors fail to grant family responsibility leave, workers are accused of abusing sick leave in order for them to fulfil social reproduction errands. Supervisors from both mines allege that some workers do not report for duty and will either call or text informing of them of their absence from work. This creates chaos in terms of work plans for the day or shift. Supervisors argue that most of the time workers lie or fake illness and there is nothing that a supervisor can do. The absent worker(s) will then come up with a Doctor's sick note and the supervisor has to accept it. Sick notes phenomenon is not the only challenge that supervisors have to deal with but include absenteeism due to alcohol abuse and different identity-based personalities that result in ill-discipline. The alleged abuse of the leave in various ways breaches Basic Conditions of Employment Act provisions and some supervisors think the mine is failing first line managers by either being too lenient to naughty workers or just not taking appropriate action for workers who commit such acts:

"I will say the mine has failed us because it's very easy to send me a sick letter informing me that, listen here, I am not feeling well...that's that. There is nothing you can do as a supervisor [with emphasis]. Even yourself you know that this guy is not sick...it breaks you. We have our own mine doctors, they must use them to verify these sick notes. Why do we have mine doctors? Why don't they come to work?" (Thabo, Foreman Kolomela)

Considering the above, it can be commented that the supervisor-subordinate relations at the two mines are complicated and often lead to frustration. The above quotes and discussion reveal capital's attempts to control and discipline labour in order to extract surplus value are met with resistance of various forms and levels by workers. Supervisors seek to ensure that work is done on time, safely and with maximum labour compliment while workers have their own vision to shape relations within sites of economic production to realise their own interests as shown by the use of sick notes to justify absenteeism. Supervisors are of the view that mine management, for instance, at Kolomela is letting them down by being too lenient to workers while workers themselves see supervisors as uncaring, difficult and only wanting to push production. The provision of a

democratic space ensures that workers are able to exercise their labour rights within the workplace and sometimes leading to conflict with first line managers as they push production. The new mines depict a significant shift in terms of frontline supervision where in the past, underground mines were characterised by callous management practices. Phakathi (2010: 181) observes that “in the colonial and apartheid years of gold mining, production supervisors were racists, bullies, autocratic and abusive...and day to day running of production process was often characterised by callous management practices and worker resistance.” Mineworkers had no workplace rights at all and got limited ones after recommendations by the Wiehahn commission in 1977 (Bendix, 2015). The post-apartheid workplace which has undergone several changes in terms of workplace relations underpinned by LRA 1995 and BCEA 1997. Various pieces of legislation on paper have shaped workplaces reform in terms of worker rights and how this interacts with production and workplace relations. It is in some ways a democratic space where ordinary workers can exercise their rights as shown earlier and at the same time workplace practices for instance violence among other things have been abolished. It is in this context that competition and the present workplace order calls for reform in supervisory and management practices (Phakathi, 2010) that include clearly set out standard operating procedures, rules, rights and chain of command. This has brought contestation and resistance between both young and old supervisors and workers as management pushes for production while workers pursue their spatial praxis.

Kolomela and Zibulo mines as workplaces as absolute spaces signify a huge change from old mines that existed during the colonial and apartheid periods in terms of demographics and workplace relations. The democratisation of this absolute space (mines) has opened a plethora of opportunities and constraints for both labour and capital. As shown earlier, Kolomela and Zibulo have a relatively young (average age of 34) and educated workforce. A matriculation certificate (National Senior Certificate) is a prerequisite for entry level jobs. This is a significant shift by these two new mines and others as opposed to older mines that still have an older workforce with low levels of numeracy and literacy but with vast amounts of experience. A young workforce brings energy and a particular vibe into the workplace as was mentioned by one Mine Overseer at Zibulo. A young workforce tends to learn fast, open to change but also brings with it competing attitudes and personalities linked to youth culture that in some instances is antagonistic with authority and fellow workers. Kolomela and Zibulo mines as relational spaces (Harvey, 2006) allow workers both young and old to pursue their visions, desires and fantasies in executing their spatial praxis.

Also, some express their frustrations for instance of not getting their leave days approved by engaging in direct confrontations with first line/frontline management as they seek to shape absolute space for their biological and social reproductions. For instance, findings reveal that relations between White and Black African workers are not that good and are veiled with perceptions of racism and discrimination and as such, either group create its own space and personalise it by isolating the other. Thus the status quo at the two mines seem to suggest subtle racialised relations between Black African and White workers and Black Africans and Coloured and Coloured workers themselves at Kolomela. Thus, workplace relations at the Kolomela and Zibulo mines are complex and punctuated by perceived subtle racial undertones.

Supervisors especially those in first line and/or front-line management occupy a complex conflicting role. Company management both top and middle, see them as part and parcel of management and general workers they lead see them as agents of management (Gardener and Whyte, 1945; Child and Partridge, 1982; Phakathi, 2010). Supervisors can be seen as agents of capital, they seek to execute the vision of capitalism through production and disciplining labour to generate surplus value and aid accumulation. They lead workers, who are human beings that a complex and fluid and have their own visions that they seek to execute and shape landscapes of capitalism (Herod, 2001a). ‘Supervisors are supervisors based on the availability of machines and equipment, labour and meeting production targets’ as was noted by a Foreman from Kolomela. They understand the business model of company for instance a mine through management courses they undertake and must be in a position to execute capital’s vision with the workers they lead. Based on this, workers they lead see them as agents of management that seek to exploit them. Supervisors are supposed to be an interface between company and workers for healthy workplace relations.

7.4. Conclusion

This chapter has discussed the changing nature of workplace relations aided by an inclusive industrial relations system (through institutionalisation) (Chinguno, 2015), workplace-based rules and regulations, a young, educated and generally skilled workforce and a new workplace. Through various pieces of labour related legislation and policies, the two new mines have been collectively able to imbue an inclusive culture underpinned by rules and regulations that are applied consistently without fear or favour unlike in the past where racial discrimination permeated across

all workplaces (Von Holdt, 2003; Bendix, 2015; Chinguno, 2015). In the same token, relations between workers themselves have been described as good as workers develop place-based solidarities and relations i.e. underground and surface and in teams and shifts. Safety campaigns in the mining industry have also helped foster improved worker relations. Furthermore, relations between mine management and trade unions were generally described as good given the fact that the current industrial relations system legally recognises and defines roles and rights of trade unions. In the case of Zibulo and Kolomela mines, a workable culture with mine management has established without being ‘co-opted into capital’s agenda’ and lose touch with rank (Chinguno, 2015). Findings show that the trade unions at the two new mines know when to be aggressive and when not to be, thus maintaining working relations with capital. The relevant trade unions still adhere to the worker mandate system a culture that many trade unions in older mines have failed to uphold (Buhlungu, 2009 see also Chinguno, 2015).

However, given the fact that labour is spatially embedded through family, culture, descent, identity ties among other things (Herod, 2003), findings show that different sets of mineworkers exert spatial praxis in contradictory and contestable ways to meet their own needs. This results in conflict between labour itself and capital as in the case of for instance perceptions that relations between White and Black African; among Coloureds and Black African mineworkers and between mineworkers and first line managers i.e. supervisors are bad. This creates friction and affects production for example, a Supervisor’s role becomes complex and frustrating as some are of the view that at one end, workers do not understand the bigger picture of a company’s business model and do not care to be present at work and on time. On the other hand, findings reveal that at Kolomela for instance, first line managers are of the view that the mine is ‘too lenient toward workforce that breaks the rules and procedures in the workplace. Supervisor’s authority and power is constantly challenged and contested by workers they lead as was shown in the case of sick notes and leave days. They feel powerless and many times it is alleged that disciplinary process outcomes always favour workers. At Zibulo, some Miners, Shift Bosses, Mining Overseers and Section management and specifically Black Africans are accused of deliberately charging ordinary workers when alternative routes of recourse are available. Such incidents have affected workplace relations within the workforce. Things have changed as opposed to the past where some Supervisors, especially Whites, would beat and abuse Black African workers (Moodie, 2005) at the point of production while now workplace relations and management practices are bound by

labour legislation and company operating procedure and conduct. Therefore, the relations between workers and supervisors are in constant conflict, negotiated and re-negotiated and contested as both capital and labour seek to execute their vision. The next chapter provides an examination of workplace based innovations on organising work, monitoring and control of labour and also how mineworkers at the two workplaces respond to such actions.

Chapter 8: Management models and workplace innovations

8.1. Introduction

This chapter argues that new mining workplaces are a contested site of control and resistance between labour and capital. Through a comparative analysis of Kolomela and Zibulo, I explore how new operating models, workplace innovations and enhanced health and safety measures have been deployed to improve workplace experience in contrast to apartheid workplace set up. This is being done through the introduction of technology and mechanisation without job losses; employee share schemes; fatigue management and other innovations. In this chapter, I argue that in comparative terms, both Kolomela and Zibulo mines' approaches to work organisation are characterised by workplace innovations aided by a young, educated and diverse workforce as a business/capitalist strategy to increase production, profits, remain competitive, reduce/ eliminate workplace fatalities and control labour power. At face value, these interventions have increased production; improved workplace relations and safety levels. Mineworkers appreciate such interventions but simultaneously view them as measures of controlling labour and thus, they independently subvert or modify processes and innovations to meet their own social reproduction needs and as a form of resistance. Findings show a gradual shift from despotic work relations to 'modern and teamwork-oriented management style.' Also, the geographical set up of the facilitates the 'professionalization and modernization' of labour relations at the two new mines. What seems to be emerging is a contest-complimentary kind of a relationship on the economic landscape that is described as *sanitised workplace order*.

8.2. Management practices and operating models: KOPEX and CMOS

Management practices exhibited by any organisations leadership in a workplace seek to control labour power and resources to realise production. Findings from the two mining companies understudy reveal that management practices at the two workplaces are informed by the changing nature of the labour landscape, business models and the broader society. The idea is to operate a business profitably while at the same time keep labour force mineworkers happy, motivated and under-control without ideally causing resistance informs the methods of management practices. At Zibulo and Kolomela for instance, the general managers are more involved in the daily happenings within their respective operations and have an open-door policy with the general workers. At

Kolomela mine, the mine's organogram is structured in the following: General Manager and managers for Finance, Mining, Human Resources, Safety and Sustainable Development, Public Affairs and Projects. These form Kolomela Leadership Team. At Zibulo, the top management is constituted by four managers that include; General Manager and managers for Finance, Human Resources; Production and Engineering. In terms of race and gender; the top management team at Kolomela constitutes of a single coloured female heading finance; two African black males (Engineering and Safety, Health and Environment); two coloured males (Public Affairs and Human Resources) and three White males (General Manager, Projects and Mining/Production). At Zibulo, the leadership team comprised of four White males (General Manager, Finance, Mining and Engineering) and a Black African (Human Resources).

In comparative terms, Kolomela mine has a bigger top leadership team (seven) in comparison to Zibulo (five). In terms of race and gender; Kolomela mine is more diversified than Zibulo relative terms. Kolomela and Zibulo mines have similar organisational structures at the top management level but different on the number of departmental managers. This can be attributed to the mining method (open cast and underground), business operating model and commodity being extracted. In terms of leadership and management style, the General Manager at Zibulo has an open-door and paternalistic policy in terms of mineworkers' access to his office when they are not happy with certain things. Informal conversations with mineworkers at Zibulo revealed that engagement with their GM is more productive and efficient. For instance, during my fieldwork at Zibulo, a couple of operators working underground came to see the GM when I was in his office. They were unhappy with the way their production bonuses had been calculated and the delay in subsequent payments. Production and safety bonuses are a sensitive issue especially when payment is delayed or miscalculated. The GM sorted their issue instantly in consultation with finance and production/mining personnel. The Operators left his office happy. I followed up on the issue of the GM's open -door policy while underground in a section during a night shift, mineworkers indicated that the approach worked well for them especially where a Miner/Shift Boss was difficult and unhelpful or did not have sufficient information to resolve grievances or queries. It was highlighted that the GM solves problems instantly and does not discriminate in terms of colour, language or gender. For them, they see the GM as an efficient person who is close to them and easily accessible. The GM's actions in some way eliminate the bureaucratic red tape of the system

they have created yet on the other hand it has the potential to undermine the system and individuals responsible for certain roles as underscored below:

“I think I have a good working relationship...between the workforce and management but I don’t think they would 100% agree with each other all the time. I do have an open-door policy where I try to make a point that I listen to people because I believe if we understand what people’s expectations are, then we know which way to take the...we do have challenges on our lower supervisory levels which comes around because of training. At the time we started, we appointed new people, so we still busy developing those individuals...the challenge with First Line Management, supervisors like (Miners/Face Boss and Foreman) is they are not listening to what the workforce is saying. So, its basic management principles that are lacking...” (General Manager, Zibulo)

Considering the above quote, the open-door policy approach by the Zibulo GM seems to suggest that his actions are justified given the challenge of lack or poor communication between the workforce and some supervisors. Unclear communication between supervisors and the workforce has been attributed to lack of training on basic management principles. Therefore, the open-door policy of Zibulo GM is seen as alternative route for Zibulo employees to voice their concerns and queries and if met remain committed and motivated to work. This has been shown in the previous paragraph before the above quote. The open-door policy seems to be working for the short term as they provide training for supervisors in the FLM but has the potential to promote flouting of procedures. The Zibulo colliery GM highlighted that the open-door policy did not undermine the authority of his subordinates but rather enhanced the whole system of leading. He noted that in instances where some dismissed workers appealed for leniency, he often gave them a second chance and most of them managed to turn around their lives and become better employees. The Open-door policy in some ways shows some elements of paternalism, a key characteristic of colonial and apartheid mines in South Africa. At both mines, the open door-policy by the GM has not yet created problems but in some instances, makes lower management level actors uneasy. This management model seems to undermine subordinates to the GM and has potential of causing labour unrest as was the case at Sishen mine in 2012 (Buhlungu et, al. (2013). The open door-policy created by the GM at Sishen mine created a platform for disgruntled mineworkers to disregard and undermine existing structures and went on an unprotected strike.

Contrastingly, the GM does not have an open-door paternalistic policy but listens and adheres to organisational structures that have been set up. General comments from the Kolomela labour force I interacted with during fieldwork reveal that they love the GM and compliment him as a man true to his word. They also pointed out that the GM listens to issues raised by workers through different departmental specific structures, but he is often let down by some managers and individuals within middle to first line management. Thus, the cautious approach by Kolomela GM can be informed from lessons learnt at Sishen Iron Ore, a sister mine 60km away. In 2012 in a report by Buhlungu et, al. (2012), in the wake of a wildcat strike at Sishen, findings show that the then GM's open-door policy approach to Sishen's labour force undermined hierarchical structures at the mine and partly created fertile conditions for the wildcat strike action. Findings in this report could have influenced management practices and interactions with labour force within Kumba Iron Ore group. The GM at Kolomela relies a lot on information from Kolomela Leadership Team (KLT) and that gathered from the war room.

In addition to the above, the two mining operations have come up with various innovations in terms of organising work, production and managing mineworkers. For instance, at Zibulo colliery and Kolomela mine, production (work), labour and resources are organised through Coal Management Operating System (MOS) and Operational Excellence (OE) models respectively. At Kolomela mine, Anglo American's OE has been custom made to Kolomela Operational Excellence (KOPEX). KOPEX encompasses business performance measurement tools across departments and shifts. It focuses on aspects that include; people attendance and development in a shift; safety, health and environment, innovation, partner and team performance, legal expiry and renewal matrix. These aspects are measured and evaluated by charts per shift and department. Walls of each caucus room at the mining operations building is filled with these charts where team members enter relevant data. For instance, in a load and haul team (15), six members are selected to be responsible for the elements mentioned earlier. An example will be on the attendance register, the responsible team member marks the register at the start of the shift and enters the information on the erasable chart.

Moreover, every month, each shift reviews itself in the presence of senior officials from Business Performance Unit, Human Resources, Foreman and Mining Overseer. During this review, the shift presenters interpret the given charts and motivate on how targets were met or not and the entire

team rates itself through colour coded stickers (red, orange and green). Red (lowest), orange (medium) and green (highest). KOPEX from my observations involves mineworkers in their MDWTs to master and understand the business's operating model strategy and contribute to its success and devise strategies on how to collectively deal with obstacles and challenges confronting their set goals and tasks. Furthermore, the decentralisation of performance measurement and evaluation of MDWTs is empowering and disempowering. KOPEX is empowering to the mineworkers because they are involved in the implementation and evaluation of Kolomela's business strategy at the lower levels. The set up enables the mineworkers to engage and take decisions as opposed to decisions being made for them as noted below:

“KOPEX is just a name we gave it but in other places they call it Mission Directed Work Teams. The whole purpose ...is to give people on the ground floor necessary information to empower them to make necessary decisions and secondly to know where they stand. When you drive your car, you constantly look at your speedometer to know your speed because you want to maintain a certain speed to arrive at certain time...The same is for the operators on the ground. If they are in the truck and do not know what must be done on their set targets, how will that inspire them to focus on the job at hand? That's KOPEX. We make sure that they have all the necessary information at their finger-tips as a team which they need to produce what they should produce. Time and attendance, safety, production loads...so that in the end they know what they must do or adjust...and continue to perform.” (General Manager, Kolomela).

In light of the above, employee engagement thus allows mineworkers at Kolomela to either contribute positively or negatively to the mine's success. On the other hand, KOPEX instils self-discipline and control in the MDWTs and hence the work gets done by raising awareness on the downside of not performing to expected levels. This is despotic control by capital through Kolomela mine's management. Market related aspects are used as tools to subtly coerce mineworkers to meet company targets and expectations and if not, the business runs at a loss and they lose employment. Some of the workers comply on KOPEX while others resist say by going absent without official pass (AWOP). This increases workload for other team members who complained about Coloured workmates who go AWOL (absent without official leave) after bonus payments. AWOP can be taken as a form of subtle resistance to capital's attempts to control labour. However, informal conversations with a team in the Load and Haul section, reveal that absence of team members increased workload of those present and often cause work allocation nightmare to

the Foreman and set targets. Trucks and machines have to be optimally utilised and the mine cannot afford to have trucks and machines lie idle due to absence of operators as was mentioned by some foremen.

Others use KOPEX evaluation process to exert pressure on the management in terms of unfulfilled demands like request for staff development; improvement of safety controls, poor supervisor subordinate relations and bonus among other workplace issues. The presence of key people like a Mining Overseer and Business Performance and Human Resources officials provides leverage for mineworkers to articulate outstanding issues. During fieldwork I managed to attend a KOPEX evaluation session for a mining construction⁵¹ shift which I thought was empowering and disempowering. The chosen team members presented on different elements outlined earlier on KOPEX to their team mates and evaluating officials. This feedback and evaluation process was absent at Zibulo. The only times where most workers met were during a safety meeting, when in the cage going underground and before start of each shift in respective sections underground (in the case of underground operations). Therefore, at Zibulo as opposed to Kolomela mine, there is no feedback session for mine workers in terms of business performance of the mine and direct platform to engage with say Shift Bosses, Section Engineers and personnel from human resources department on labour related issues. The only time when such an opportunity is availed is during pre-shift meetings in a section with a Miner/Face boss. Such meetings are mainly about outline on work to be done, safety issues and any communication from above.

In contrast to Kolomela's KOPEX, Zibulo colliery uses coal's CMOS (coal Management Operating System). CMOS is made up of the following elements; planning, assignment, execution, follow-up, review and reporting. It is a custom-made management operating system for thermal coal in South Africa. At Zibulo, the shopfloor is only involved on the implementation part while a layer above frontline supervisors through middle-management to senior management are actively involved. The shopfloor, in this instance, mineworkers in a section underground implement what has been planned on surface through a Faceboss/Miner. CMOS is combined with Operational

⁵¹ Construction is a section within Mining Production at Kolomela that is responsible for construction and maintenance of roads, dumping areas and walls in and around the pits (mining area). For instance, on the road, the teams are responsible for grading and removal of large boulders that accidentally fall off hauling trucks and improving of gravel road conditions to increase tyre traction through resurfacing etc.

Information Delivery (OID) platform and does not involve mineworkers on the shop floor as compared to KOPEX.

Besides MDWTs, the two cases under study have also introduced workplace forums like the war room in the case of Kolomela mine and meetings across 5 levels at Zibulo set at different times during the day. These meetings are meant to enable effective communication and problem solving between different actors from various levels in a single place. At Zibulo for example, in the mining section, before a shift begins, Miners/Face Boss report for duty around 0600hrs for a level 1 meeting with incoming and outgoing Shift Bosses of a section; artisans and foremen to share information. This information ranges from production targets, what has been achieved, situation in the section in terms of the cutting sequence, ventilation, geology, the required material and the number of machines working. Also, information discussed at level 2 meeting (that includes Shift Bosses, Mining Overseers, and Section Heads from different departments, among others) is relayed to front line supervisors who in turn, share it with the shop floor in their workstations during caucus meetings. Likewise, at Kolomela, at the mining operations side there is a shift change meeting that takes place at 6am in the morning. It is attended by incoming and outgoing Mining Overseers, Mining and Production managers, Foremen and safety officers. They discuss production targets, work that has been covered by the outgoing shift, outstanding work, safety issues and hazards and machine utilisation. When these actors leave from this shift change meeting, foremen know exactly what and how work needs to be done in their sections. They convey the information their MDWTs in the caucus meeting.

At Kolomela mine, the KLT has its own meetings but also has a meeting that involves section heads and the KLT known as the war room. In an interview with the GM at Kolomela mine, he reflected the following on the war room:

“War room...that is where we have a lot of people and share very important critical information in short space of time...to a very big group of people quickly and they take it to the people. One, they feel empowered, two know where to focus on...Now if there is a problem with say machine B today, we know that we all support from finance, supply chain, training to get the machine B operating. That happens in the war room and at finger tips. Its short notice and we share information very quickly to a broad group. The importance of the war room is that, it gives you focus and, in our case, we use the theory of constraints only on the bottlenecks. That says do not shoot with a shot gun if a business

like a mine is not functioning properly. You will not get results...shoot with a rifle at the point of the problem.” (General Manager, Kolomela)

The above quote depicts that Kolomela mine has made attempts to reduce bureaucratic layers of the mine’s structures by bringing everyone together in one room within a short space of time. This decentralises decision making and empowers middle and frontline managers and supervisors to take decisions confidently. Collective problem solving based on the mine’s focus on specific problem promotes unity and collective effort hence quicker resolve of problems. However, this can be disempowering to mineworkers in that failure to execute set tasks can result in the management specifically holding individuals or groups accountable. War room is a form of control because it puts pressure on mineworkers to perform within set norms and standards and failure results in negative appraisal.

Comparatively both Kolomela and Zibulo mines use caucus meetings as mineworkers’ engagement within the workplace on production related matters. At Zibulo, a caucus for mining department takes place in a waiting area (container) in a section underground 30 minutes before the conveyor belt is switched on. These caucus meetings are intimate and sometimes very spiritual for instance, the Miner/Faceboss who is the frontline supervisor for a section requests one of the team members (an operator or artisan) to render an opening prayer. An opening prayer starts daily with the GM’s Zibulo News⁵² communique (production targets, health and safety). Face Boss completes the Fire man’s report, outlines the cutting sequence and set shift target and allocates roles. Challenges, constraints and safety concerns are discussed in the caucus meeting. Safety talk through what they term ‘check in’ tends to bind each crew closer together through hegemonic safety messages like ‘you are your brother’s keeper’ and so forth. Similarly, the same can be observed at Kolomela mine. Before a shift starts within mining sections, a foreman for each shift team conducts a caucus meeting. The caucus rooms are within the mining operations complex and not at the mining area as is the case with Zibulo mine. Production targets, work allocation, update on safety levels/hazards and attendance register issues are addressed. Furthermore, operators are

⁵²Zibulo News is a daily communique that provides a summary of previous day’s overall mine performance in terms of production, safety, health and other information deemed necessary to be communicated to every Zibulo employee. It starts with the General Manager’s daily inspirational message punctuated with a bible verse among other things. Zibulo news also puts emphasis on Safety and daily production targets.

afforded an opportunity to raise issues with their respective supervisor before they depart to their individual and alienating workstations.

Like at Zibulo colliery, mineworkers at Kolomela mine especially those in the plant and mining departments conduct what they call ‘joys and sorrows.’ Basically, each operator tells every team member his/her state of mind (happy and sad) information and how it is likely to impact on job performance and safety within workstations. It generates sympathy and solace and hence tends to rally team members together and instil solidarity. Also, important information like advertised posts, communication from the management is communicated in the caucus meeting. From both cases of Zibulo and Kolomela mines, caucus meetings unify mineworkers in their respective teams. At Zibulo, the fact that operators work underground in the face of potential hazards, safety messages glue workers together as they depend upon each other. At Kolomela mine, caucus meetings in the mining department provide companionship for the Operators because once they leave to their workstations (trucks and machines), they will be lonely until lunch and knock-off time.

Considering the above, it can be observed that both mining companies use similar business operating models that generally reflect Anglo American’s way of doing business across its operations. Anglo American’s business model is imbued through its culture with the following values; safety, innovation, accountability, care and respect and integrity and collaboration. At the same time, Zibulo colliery GM employs an open-door policy intermittently hence solidifying his hands-on management approach to the workplace he leads while the Kolomela mine GM sticks to set hierarchical structures. Furthermore, both mining operations have MDWTs that empower workers collectively to take charge of their work situations and take decisions based on the knowledge they possess. However, this decentralisation of decision-making process though it is empowering, has the potential to undermine established chain of command and structures. This can destabilise the confidence of supervisors and create tensions. Both mines have established decentralisation in terms of implementation of company goals through MDWTs and at Kolomela, work teams have the power to evaluate their performance through KOPEX. Caucus meetings show that they unify and create a platform for mineworkers to engage with their supervisors, brainstorm and tackle challenges related to their workstations.

Despite the above, what are the implications of the above-mentioned management models in terms of shaping and influencing workplace design, organisation and how mineworkers respond to such?

8.3. Workplace innovations: mechanisation and technology; production incentives; work restructuring

Kolomela and Zibulo mines are new mines (established in 2008) i.e. green field projects and do not have a history or legacy per se as compared to older mines established in colonial and apartheid South Africa. Therefore, the structure and design of these new mines as shown by findings, reflect intensive innovations in terms of mechanisation and technology; workplace restructuring and health and safety improvements. Mechanical and technological innovation have become a significant feature of a modern mine or capitalism. Furthermore, these innovations on space (relative, relational and absolute) are underpinned by Anglo Americans ideological apparatus, core values (safety, innovation, accountability, care and respect, integrity and collaboration). Conversely, the workforce at these two mines respond in contradictory ways by either subverting/complying with these innovations through different strategies and tactics on space to challenge the employer or meet their own reproduction needs. These reproductive needs include, freedom to control individual labour power, education, rest and salary and bonuses.

8.3.1. Mechanisation and smart technology

Findings from the two mining companies indicate increased use of smart technology i.e. robots and drones on different aspects of mining in organising work. This has become a cause of concern for labour and labour activists in light of potential replacement of human labour by machines. Kolomela and Zibulo are technological and machine intensive mines. That is not to say machines and technology have replaced human labour but rather to say extraction of iron ore and coal is aided by machines and or through use of latest technologies. At Kolomela mine for instance, departments that are directly related to production make use of latest technologies and machinery to extract and process iron ore and also to monitor and improve conditions within the mining areas (in the pits, plant and loading bay). New mines have an advantage that they are designed and developed from scratch and therefore allows integration of new and smart technologies that improve production and safety. Therefore, they are mechanised from the construction phase. Also,

the intensive use of modern machinery and new technology is aided by a young and educated workforce that can read and write. At both mines, majority of the workforce that works in the open pits and underground and directly responsible for the extraction of either iron or coal are operators. Some can operate more than 3 for instances trucks or machines. Kolomela mine's trucks are installed with satellite tracking where production monitors in the control room can remotely switch them off and can also monitor their location and speed. At Zibulo, in a section underground during a shift out of a team of between 8 and 10 mineworkers including the Miner who is the supervisor, eight members are operators who drive or operate for instance the Continuous miner (CM), Shuttle cars, Graders, Loaders, Roof Bolting machine among other things. Work is designed and allocated according to the available machinery aided by smart technology. The same was observed at Kolomela where for instance in the open pits where one hardly finds a person walking on foot or working on the ground except when a foreman is communicating with an operator in a truck or spotter for drillers among other things. The amount of waste for example, that is to be hauled in tonnes from a section that has just been blasted to a dumping site by trucks can easily be calculated through the quantity of waste each truck haul, number of trips and speed of each truck. So, production targets are set in that way. These production targets depend on the availability of machines, trucks, labour and mining conditions.

In addition, at Zibulo for instance, they introduced innovative Operational Information Delivery (OID) "...platform that gives surface personnel a live picture of happenings underground 24/7" (Zibulo News, 2015: 33). Through use of large monitors that are installed in the GMs, Mining Manager, Shift Bosses offices among other key decision-making people, they can extract underground activities per section. The screens provide them with information like movement of the conveyor belt taking cut coal to the silos on surface, quantity of cut coal passing point from underground to surface, distance cut and performance of machinery (Zibulo News, 2015). Other departments like Ventilation and Occupational Hygiene Engineering (VOHE) also have their own live monitoring platform on intake and return ventilation in all sections. These innovations at face value seek to improve production in a safe environment hence creating competition amongst sections. However, the OID platform is a revitalised method of monitoring and control of labour underground by those on surface. When there is an issue underground, surface or those working underground can easily telephonically call the Shift Boss on duty in the office or the call gets automatically transferred to his/her two-way radio communicator device or the control room. The

OID is also connected to the environmental monitoring systems for instance dust control etc. All these innovations are evident at Zibulo and depict a modernised new mine and inform workplace design and organisation.

Also, at Kolomela, the mine invested over R500 million worth on technological improvements mainly on remote controlled robotic machines that drill blast holes, drones for aerial surveying among other things (Brown, 2017). The reasons put forth by the mining company are that technological improvement will eventually lead to lower costs and improved safety due to limited exposure to harsh weather conditions. For instance, it was reported that robotic drills can drill blast holes continuously for 17 to 18 hours as opposed human being's 14 hours per day (Brown, 2017). The mine highlighted the time often lost through transportation of operators to the drilling site. At the time of the study i.e. data collection, most of the workers for instance at drilling section were positive of the plans to utilise robots to remotely drill blast holes after assurance of no job losses. Also, drill Operators expressed their desire to work in air- conditioned control rooms far away from harsh weather and environmental conditions hence their support for robot automated drill rigs. However, other implementers of the project expressed their reservations on the long-term success of robot automated remote drill rigs. Through informal conversations, some mineworkers involved in the project cited variance on rock types as stumbling block to smooth remote drilling of blast holes. It was indicated that human power will be constantly required at the drilling site to evaluate rock type and also conduct repairs where the drill bits break down due to hard rocks.

A significant difference between these two mines under study in terms of workplace organisation is the outsourcing question. Support services directly related to production at both mines which are specialised are outsourced to private companies for instance (at Kolomela, dewatering of mining area; slope monitoring and management; tracking and access control system; radio communication services etc. and Zibulo, conveyor belt repairs and cleaning, roof and wall monitoring; two-way radio communications services). Of particular interest however are the engineering services that encompass mechanical and electrical aspects. At both mines, the servicing of trucks, big machinery like the CM, Drilling machines, Loaders, Dump trucks and Shuttle cars among other things is outsourced to private companies. At Kolomela mine, Barloworld (CAT), Liebherr and Komatsu are responsible for the assembling of new equipment and service of the mine's trucks, machinery and equipment within the mentioned brands. The abovementioned

entities operate within the premises of Kolomela and hires its own workforce. Kolomela mine at the time permanently employed a single artisan (fitter) while the three mentioned companies directly employed the rest (fitters and diesel mechanics). When asked why these key production support services were outsourced, a senior mine official noted that it was a strategic business decision based on the fact that as a new mine they did not have the experience of assembling and maintaining massive equipment and machinery. Furthermore, assembling and servicing of trucks was not part of their core business hence decided to leave it to the experts. Also, the idea to outsource this function was related to shortage of housing. During fieldwork through informal conversation, I picked out that there are constant tensions between the three companies (engineering) and mining operations as shown below:

This day shift team allege that when the Foreman books the PC 988 for breakdown, the maintenance team deliberately wait until end of shift and book trucks or equipment online that they are ready for use. When the next shift comes through some trucks or machines will still have the same problem. The issue is when it gets to utilisation hours, the shift has to account yet the engineering team is said to be responsible for messing up...and fear being hauled to hearing on why machines are not being fully utilised. (Field notes 2016/09/27)

Mining operations accused the engineering (mechanical) department of not availing trucks and equipment on time hence affecting their production targets while as on the other hand the later alleged that the former ‘wants everyone else to jump because they think they are special.’ These kinds of frictions are not in any way related to the fact that the mechanical engineering section is outsourced but rather to pressure on meeting production targets, production bonuses and machine and equipment optimization. A similar trend was observed Zibulo but was structured in a different way. Zibulo mines hires artisans (electricians, fitters and diesel mechanics) who in some instances report to a foreman from the outsourced company i.e. Joy through Komatsu. During observations underground in some section, it was observed that a team in a section work closely with its artisans in order to meet production targets. There were no tensions observed except when the Foreman who usually sits on the surface visits the section when the CM or shuttle car has broken down and has disagreements with Operators. The blame game then unfolds.

At Kolomela mine, operators use trucks, machinery and technology to fulfil their own needs. Contrary to the view that capital uses machines and technology to control labour in absolute terms,

my observations in the mining pits show that mineworkers use the same mobile space in this case cabin of a drill rig to fulfil their personal needs. For instance, in an interview with a female drilling operator, Candice, she revealed how the drilling machine is a place to study, reflect on her life and sometimes weep. The following interview extract captures such:

“...as an operator, you sit in your cab. You listen to music while drilling...I feel comfortable and relaxed in my machine because it’s like my second home because I can study and do other things while working...you know sometimes it’s so nice because sometimes I can just...maybe you are going through a difficult time e.g. at home and when you are sitting in that machine for that long, you can be with your emotions. Give you time to think. Sometimes you just feel like crying and you can because no one will see you. But they put cameras...so what we do is we go into the corner where camera is not visible, and we cry our hearts out. Or you can just turn the chair because the camera won’t be visible...sometimes I study/read especially if I am drilling an area that has hard rock because it takes longer [to drill] (Candice, Coloured female Drill Rig Operator, Kolomela).

The quote above shows how Candice subverts methods of control of labour by capital through the drill rig and cameras installed in the cabin to monitor drill operators on duty. The drill cabin is used as space to deal with emotional challenges, study or even relax while at the same time working. Through the use of improved technology, the operator just programs the drill rig’s computers on the required dimensions and the rig drills the holes in preparation for blasting. Her main task is to monitor the computer screens, move the rig to another place (with support from an assistant) and program the computers again. Furthermore, in hauling trucks, which are massive in size and often alienating as mentioned by operators, these truck operators use them as logistical power to challenge or express disgruntlement to management. During fieldwork, Kolomela mine was in the process of restructuring and some truck operators were not happy in terms of how other truck operators from P7 and P6 according to Anglo grading (P7 being entry level in the mining operations department) were elevated to P5. Based on informal conversations I had with operators in P5 and P4 and operate for instance bigger trucks in terms of tonnes of loads they carry i.e. Komatsu 730Es see fig below, were of the vie that their grading should have been reviewed. They argued that they had more experience and drove bigger trucks while as P7 and P6 operators elevated to P5 operated smaller trucks like CAT 777. Those P4 and P5 operators drove their haulage trucks hauling iron ore and waste slowly and hence reduced the number of trips each truck

is expected undertake in expressing their disgruntlement. The reduction on number of trips per truck was identified and mining operations leadership addressed the issue.

8.3.2. Production and Safety incentives

Both mines have different bonus systems in place and these include production bonus, safety bonus and annual bonus for those not directly involved in production. The bonus system in modern capitalism is used as a form of control of labour and continuation of the past practices (colonial and apartheid periods). The only difference is the rates have increased and mine workers at the point of production now receive improved rates, unlike in the past where Mine Captains/ Overseers got the greater share (Moodie, 1994). At the two mines under comparison, operators are constantly chasing production and safety bonuses to supplement their monthly salaries. The prospect of having extra thousands of Rands on top of their monthly remuneration seem to push mine workers to comply with workplace production demands. During a mass meeting called by NUM Zibulo branch and addressed by a regional official giving feedback on wage negotiation, majority of the mine workers echoed that they were at the mine to make money and not to make friends. The idea of meeting production targets self-motivates the workforce and in some instances to ignore critical controls and procedures. While on a night shift underground at Zibulo, I overheard that in some sections, mine workers chase production targets by ignoring cutting sequence i.e. moving away from what is stated on the cutting plan and in the firemen's book or cutting a panel for more than 12 metres without roof support (roof bolting). This is a serious safety lapse that can result in loss of life and equipment if fall of ground or roof collapse was to take place due to not supporting the roof within a panel or dismissal from work as captured in my field notes below:

...because employees are too complacent sometimes i.e. safety standards etc. or some make planisa⁵³ without following instructions to reach targets. Workers point out that the management selectively dismisses those who do not comply with procedures and safety rules. When a worker is not a target for dismissal, when they break rules say cutting 24 metres instead of 12 metres rule on 2 seam on the set cutting sequence chasing production target is let off the hook...while those who are under monitoring are easily charged and dismissed when they make a slight mistake (Field notes diary, 05/01/2016).

⁵³Planisa is a term that was and still being used in the South African mining environment especially underground gold mines to refer to make a plan...comment on Moodie, 1994)

Sometimes others were accused of cutting coal in unsafe conditions for instance not sorting out ventilation issues by installing brattices according to the set plans or not pumping out water near the coal face or along panels. Also, the issue of production bonuses is rife as in some cases a mineworker can pocket an extra R16 000 in the middle of the month. Zibulo has a production initiative under mining called ‘1 million safe tons’ where underground mining sections (8 plus 1 that was under development at the time) race to reach a target of one million safe tons of coal within a calendar year (Zibulo News, 2015). All sections are given a possible target to be cut for instance 80 metres per shift. This was applicable during the 8/9hr shift system. These targets would be possible when there is enough labour, less breakdowns, geological conditions, ventilation and materials. The section that reaches the one million tonnes milestone is given some days off and the mine management takes them out to a resort place to celebrate the achievement. The ‘millionaires’ as they are called are also given financial and goods incentives for the milestone. Therefore, the ‘one million tonnes’ targets in a calendar year under a 2-seam production incentive drives mine workers to meet their daily targets. Mine workers sometimes use unlawful methods i.e. changing cutting sequence and cutting above the 12-metre rule without installing roof support.

A significant difference in terms of monetary incentives at the two mines under comparison is the question of employee shares. Kolomela mine which is owned by Kumba Iron Ore have an employee share scheme called Envision⁵⁴ while none exists at Zibulo. Envision is a Broad Based Black Economic Empowerment initiative that sort to empower historically disadvantaged employees and afford them an opportunity to ownership of a company (Anglo-American, 2011). Envision was a success in many aspects because it motivated broad Kumba Iron Ore including Kolomela mineworkers to work hard in terms of meeting production targets due to sense of ownership of the company. Qualifying employees received huge amounts of money more than what they had earned in their lives. This had both positive and negative impacts on the mineworkers, mining companies and host communities. Recipients of the pay-outs after tax were

⁵⁴ Kumba Resources split into Sishen Iron Ore Company and Exxaro. SIOC split its shares into; 74% Kumba Iron Ore, 20% Exxaro, 3% SIOC Community Development Trust and 3% Envision Trust. The share scheme borrowed money from SIOC to buy shares on behalf of the qualifying employees who were permanent and from F-role/GBF 6/11 and lower levels. Each of the qualifying employees received in the first and second phase 3375 and 3800 share units respectively and based on when they joined the company. In each phase employees received dividends twice a year based on company performance. In the first phase pay-out (2006-2011), qualifying employees received R 576 045 (R345 627 after marginal tax of 40%) (Anglo-American, 2011; Envision SIOC Employee Share Participation Scheme).

able to spend it on buying property, cars, furniture, clearing debt and bonds among other things (Buhlungu et al., 2013). However, in a report by Buhlungu et al. (2013) at the request of Kumba Iron Ore, there were reported misuse of money by the recipients through conspicuous consumption (expensive high cost maintenance motor vehicles, alcohol abuse etc.).

Also, unintended consequences of the pay-outs resulted in disgruntlement over the amount of tax deducted among the recipients and it partly led to a wild cat strike at Sishen, Kolomela's sister mine (Buhlungu et al., 2013; Mashayamombe, 2014). Nonetheless, the employee share scheme shows a significant shift from older mining company culture. Some mines have tried to establish employee share schemes without success but at Kolomela they succeeded. The second phase of Envision (2012-2016) was not that successful, primarily due to poor iron ore prices. This left many workers, especially those who joined the company in 2012, disappointed as they did not receive a final pay-out as was the case of the first phase in 2011.

8.3.3. Workplace restructuring without job losses

My fieldwork visit coincided with restructuring at the two mines under study. Towards the end of 2015 at Zibulo colliery, upon my arrival of my three months stay, the mine was in the process of restructuring in terms of changing from an eight to 12 hours shift system. The rationale behind this move was based on poor coal export prices and demand among other things. To counter the negatives cited, Zibulo decided to implement the 12-hour shift system with consent of mineworkers and trade unions. Also, 12-hour shift was adopted to increase production in terms of coal output and hence avert job losses. During field work, final agreements were being sorted and the 12-hour shift system came into effect in 2016. Furthermore, to avert job losses and besides the 12-hour shift system, Zibulo instituted the Coal Management Operating System whose goal was to increase coal production in safe conditions. This was for instance as highlighted, driven through 'one million tonnes' production and safety campaign. These changes within the labour process were agreed upon with organised labour and mineworkers. In an interview with a union fulltime shop steward, the following was expressed:

"They are proposing this new shift system because of coal prices dropping drastically...and we understand. Their reasons are valid, so let's change...they want more coal. So, if the price drops, then you must sell more so that you balance everything. So,

for that to happen, we must change...maybe the shift system. So, it's fine..." (NUM Full-time Shop steward, Zibulo)

The changes in the shift system were supported by one of the recognised trade unions at Zibulo in order to increase coal production which would in turn avert job losses or disposal of the coal mine. In the same year Anglo American planned to dispose a number of coal operations in Mpumalanga due to poor coal prices, government demand for more than 50% black ownership on operations that do business with ESKOM among other things (Anglo American Press release, 2017). The following sister collieries were sold to Seriti Resources Holdings Proprietary Limited; New Vaal, New Denmark and Kriel (Anglo American Press release, 2017) save for Zibulo which is to greater extent coal export oriented. Similarly, Kumba Iron Ore (including Kolomela), embarked on a business restructuring and redesign in 2015 and re-organization was inevitable. Fortunately, findings reveal that there was no issuance of section 189⁵⁵ process and hence no job losses.

Moreover, field work data collection in 2016 coincided with the structure redesign of the core departments of the mine mainly; mining, plant, Engineering and mineral resources management. Restructuring of support services department had taken place in 2015. The restructuring exercise was informed by the desire for efficiency and effectiveness (KOPEX), reintroduction of Dense Medium Separation (DMS) plant and preparations for production ramp up in 2017.⁵⁶ This process undertaken in consultation with all relevant stakeholders including organised labour (trade unions) and Kolomela mineworkers. New roles were introduced while redundant ones were slowly removed upon migration of the affected candidate to a matching or new role. This also caused changes on the grading system (Paterson) especially for those within the collective bargaining category. Some mineworkers were assigned to new roles, others lost titles but continued doing same tasks while some were shifted to different sections. These changes left mixed feelings amongst the workforce. For those who were not happy, they took silent protests as evidenced by the example highlighted earlier of truck operators driving slowing down speed of trucks hence reducing production targets. Of significance on these two cases is the absence of loss of jobs which is usually attached to workplace restructuring and poor commodity practices. The other reason

⁵⁵Section 189 of Labour Relations Act permits employers to dismiss employees for operational requirements based on economic, technological, structural etc. The section further states out that among other processes, consultation must take place when the employer contemplates retrenchment

⁵⁶Core Discipline Redesigned Implementation Procedure (Kumba Iron Ore, 2017)

may be that the design of the mine to be mechanised and technology intensive streamlines work hence fewer labour requirements. Based on these two cases, the approaches used by the two mines depicts something positive in terms of averting job losses. Of course, it cannot be denied that there is a catch because capital is there to extract and make profits.

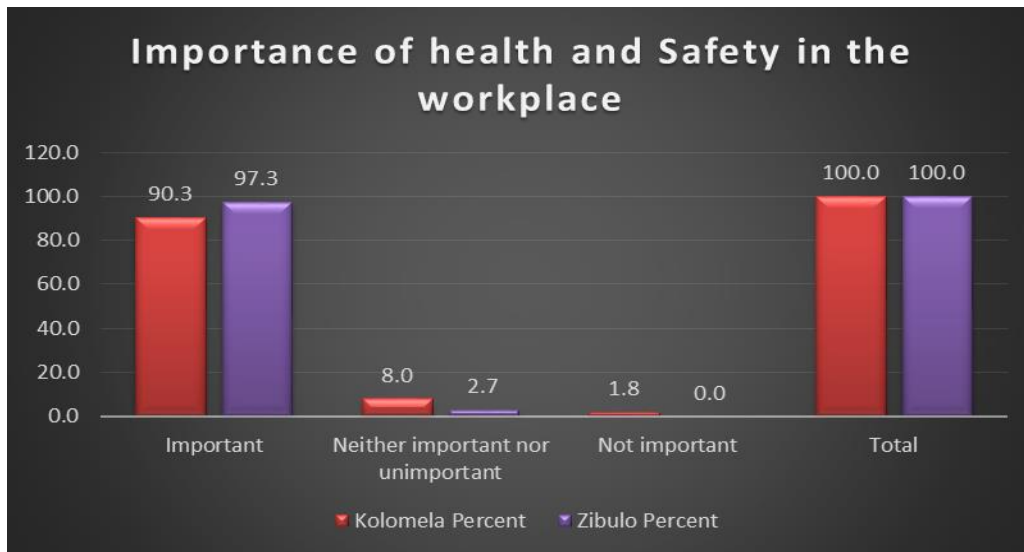
8.4. Health and Safety: from ‘joys and sorrows’ to ‘check in’ and fatigue management

8.4.1. Safety and health policy, procedure and training

Safety is an important aspect of mining. Extraction of minerals takes place in environments that pose potential risks and hazards that can be fatal whether on surface or underground. It is therefore an imperative of mining companies to ensure that their operations are executed in safe working conditions. The Mine Health and Safety Act No 29 Of 1996⁵⁷ requires employers among other things to provide a safe and working environment, provide training and education on health and safety; how to operate machinery or equipment, codes of practice among other things. It is in this context that some questions on health and safety were structured to elicit participants’ views. During data collection process at the two mines, in the survey, questions were posed in order to elicit the views of participating mineworkers on their attitudes and views on health and safety within their respective workplaces. At Kolomela and Zibulo mines, the Safety Health and Environment department deals with safety, health and environmental issues. This section focuses on safety and health. Findings from survey results show that considerable measures have been put in place to ensure safe and healthy working environments. Various systems, policies and procedures have been put in place to ensure a safe and healthy work environment. At both mines, through survey interviews, a number of questions were asked relating to health and safety.

⁵⁷MHSA requires that at mines; employer to ensure safety, employer to maintain healthy and safe mine environment, employer to ensure adequate supply of health and safety equipment, Employer to establish (must) health and safety policy, codes of practice, Employer to provide health and safety training and Employer to assess and respond to risk among other things.

Fig 1.24 Importance of health and safety issues at respondents' workplaces



Participants in the survey were asked how important they thought issues of health and safety were in their respective workplaces (Q54) and results indicate that at both mines, over 90% of the sample indicated that issues of health and safety are important as shown in the graph (fig 1.24). Also, at Kolomela and Zibulo, 8.7 % and 2.7 % respectively indicated that issues around health and safety were neither important nor unimportant which is quite surprising given the risks and hazards in and around mines. What is positive is the fact that over 90% of 186 (total sample) acknowledge the importance of issues around health and safety and can help improve mineworkers' attitude in embracing safety issues and work safely. Mineworkers' attitude toward health and safety training and education can shape and influence their working behaviour and lifestyles. Safety data shows that mining industry fatalities have been on a decline i.e. have decreased from 246 in 2004 to 73 deaths in 2016 (CMSA, 2016: 11)⁵⁸. This reduction in deaths may be explained by increased investment in safety education and training, government regulation, change of attitude and safety innovations. In addition to the above question, the participants were further asked if they had received any training on few aspects that were pre-coded. It is a legal requirement that a worker in mines for example, must be trained to undertake any role, activity or operating machinery/equipment and licensed. This therefore, places the centrality of induction courses and

⁵⁸ Chamber of Mines 2016 Facts and figures report was citing Department of Mineral Resources, June 2016.

training of mineworkers in terms of health and safety and the actual task they undertake. At Kolomela mine, findings show that production related departments that include, mining, engineering and plant undergo training once every month per shift (see Fig 1.25). Areas marked with yellow indicate training day of each of the 4 shifts.

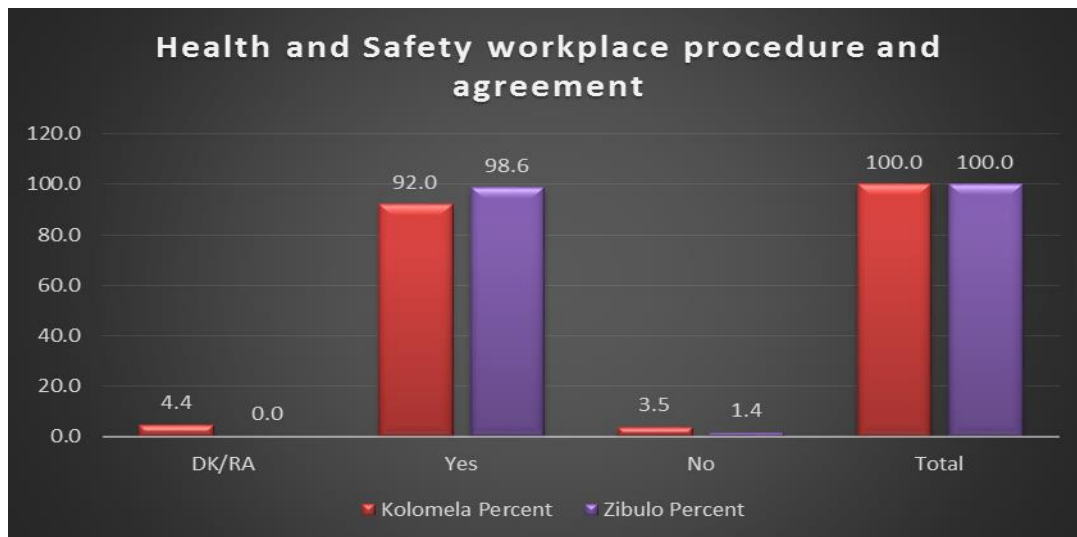
Fig 1.25 Monthly shift training roster at Kolomela mine.



The training covers issues around safety (safety rules, critical controls and policies and procedures), health (lifestyle and voluntary counselling and testing) and task related aspects. Furthermore, further training and development takes places during renewal of an operator's license to operate machinery or equipment or first line management related courses for foremen and supervisors etc. In contrast, Zibulo at the time of data collection did not have set date for shift training. Instead, education and training (induction and task related) takes place when a miner comes back from annual leave. This takes place before 12 months have lapsed. Further training linked to tasks each miner or Operator undertakes either happens at the training centre or in Witbank at the Colliery Training College (CTC) in line with Mine Qualifications Authority (MQA) accreditation. When participants were asked if they had received training on maintaining equipment in the last 12 months, 42.5% and 67.1 % said yes from Kolomela and Zibulo respectively. Surprisingly, 40.7 % from Kolomela mine indicated that they had not received any training, yet they do receive training once per month during shift training. At Zibulo 31.5%

indicated that they had not received any training within the specified 12 months. Furthermore, 59.3% and 79.4% from Kolomela and Zibulo respectively indicated that they had received training on how to use Personal Protective Equipment (PPE) in the last 12 months. While 24.8% and 19.2% from Kolomela and Zibulo respectively indicated that they had not received any training in the last 12 months on how to use their PPE. The last two figures are high and may be attributed to the fact that use of PPE is daily exercise and thus training takes place on a daily place as opposed to being taken to the training centre for such an exercise.

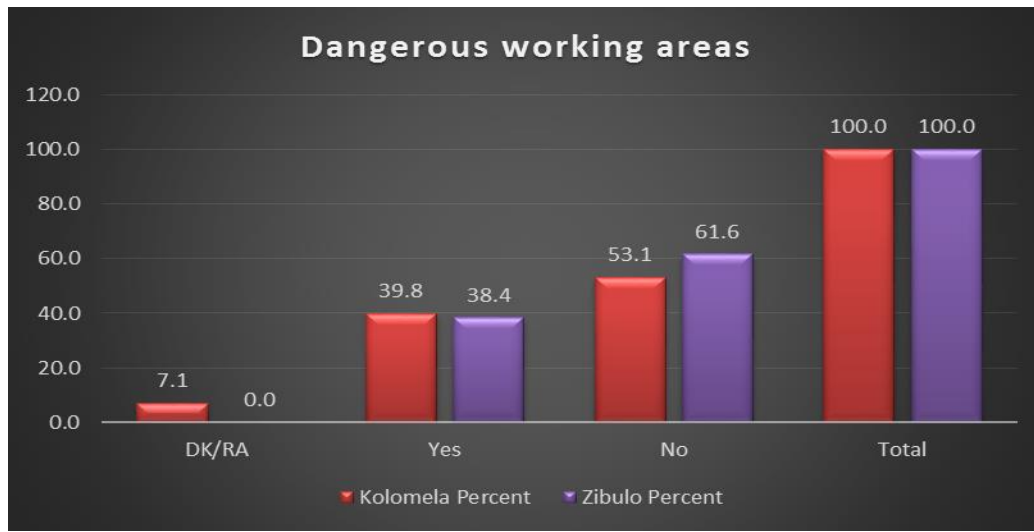
Fig 1.26 Survey responses on Question 56 that asked if respondents' workplaces had Health and Safety Procedures in place.



In addition, survey participants were asked if they had received any training on Section 23 of the MHSA 1996 that gives a mineworker the right to refuse to do dangerous work or work in a place deemed dangerous. Survey results on the question show that, 57.5% and 82.2% from Kolomela and Zibulo respectively indicated that they had knowledge of section 23 and had received training on such. At Kolomela mine 26.5% higher than Zibulo's 16.4 % who indicated that they had not received training on section 23. This is worrying given the fact that mining is a high risk and hazard area and mineworkers are exposed to dangerous conditions. It is imperative that mineworkers must know their rights especially when it comes to unsafe working conditions and hence the right to refuse work. In addition, participants were further asked if Kolomela and Zibulo as workplaces had health and safety procedure, 92% and 98.6% at Kolomela and Zibulo respectively indicated

that health and safety procedure/agreement was in place at their respective workplaces. Only 3.5% and 1.4% at Kolomela and Zibulo respectively responded that there was no such health and safety procedure in place (see Fig 1.26).

Fig 1.27 Comparative graphs indicating responses to Question 58 that asked mineworkers on working dangerous areas at the two mines.



Participants were further asked if they had worked in area, they thought was dangerous. At Kolomela mine, 39.8% confirmed that they had worked in dangerous areas. 53.1% at Kolomela mine indicated that they had not worked in a place they thought was dangerous and this is positive given the risky and hazardous nature of mining environment. At Zibulo, 38.5% indicated that they had worked in dangerous conditions while 61.6% had not worked in dangerous conditions this is shown in the comparative graph in Fig 1.27. Furthermore, participants were asked to cite examples of dangerous situations or conditions they had been confronted with in their respective workplaces and the Table 1.16 shows such.

The table below shows different types or scenarios where survey participants encountered as danger in their respective workplaces. Examples from Kolomela show typical potential risks and hazards likely to be encountered at an open pit mine that includes among other things; charged blocks (after blasting), lightning, slippery roads, dust and reduced visibility especially during night shift, uneven ground, working at heights, confined spaces, crest of high wall and Heavy Mobile Equipment (HMEs). Similar trends can be observed at Zibulo colliery whose greatest risks and

hazards include methane explosion, fall of ground/roof fall, water and electricity charge, conveyor belts and mobile equipment. Lack of knowledge or training of such or adherence to basic safety rules, procedures places lives in danger. Safety rules and critical controls among other things form a standardised safety management system that requires participation of all stakeholders including mineworkers.

These two mines as in Anglo American safety goals seek to achieve zero harm which is a broader mining industry drive (Chamber of Mines South Africa, 2016). Fatal accidents occur when these basic safety rules and procedures are not followed or not enforced hence putting lives and equipment at risk. Accidents and incidents can contribute to fatalities, injuries, Lost Time Injury (LTIs) and medical treatment cases (MTC) among other things and stoppages in production due to investigations. Constant education, training and enforcement is central to the establishment of a health and safe workplace. Findings show that significant effort has been put into improving health and safety systems at the two mines under study.

Table 1.16 Comparative table showing survey participants' responses to the type of dangers they have encountered at Kolomela and Zibulo

Kolomela Mine	Zibulo Colliery
Type of danger	Type of danger
-Big rock hanging on a high wall and it was dangerous, and I had to make it safe -Dusty conditions at standard loading areas -Drilling near cracks -Night shift dark and dusty and pits and was toward a dead end without safety beams -We are working with dangerous machines and HME -A stacker we had to work on a loose structure that wasn't tightened. The work was stopped, and safety inspection was carried out -I had to make a beam on a free face and there was a chance to roll over. I had to make the place safe -I work along the high wall in the pit. Some of the walls have accumulated water and I see a lot of movement	-On the roof when drilling with a roof bolt and hit a hard rock, the roof felt like it was falling, and small pieces of coal fell down -I always work with danger as I fix roof support which can fall down but I installed roof bolts to hold -Worked at a bad roof and a rib side condition where one had to be aware of changes while fixing breakdown -A roof of where I was working was falling and had to cut six meters and support -We used to change a lot of sub assembly underground i.e. booms (conveyor), hook chains drilled on the roof, suspended it slide and in move which CM and fit in the belt, if the roof fall or break chains, somebody could have been killed -Methane explosion

-Where I work there is uneven surface/ground. -Once a charged block blasting on its own because of lightning. Working near the crest of high wall Cleaning high wall and fear of falling rocks -We were working when it was raining, and it happened that the truck slipped to a safety beam -Confined spaces and uneven surfaces for the machine and car fall -Working in machines and at the edge of dumps; working near the crest of a high wall -I reported but was told it is not important just keep on working and told I don't want to work	-It was with a scaffold when a fellow worker climbed on it without ladder and safety harnesses. Inspection was done and rectified immediately -There was a fall of ground underground fatality multiple intersecting slips forming a wedge, initially it wasn't perceived as a hazard until it fell on the ground -It was a refuge bay that had falling stick sides -There were multiple geological slips increasing the chances of fall of ground -We were entering a cage underground and the chain broke, and it had to be replaced
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In addition to the above, findings show that both mining companies have safety structures i.e. Chief safety officer/Manager, Safety Officers (hired by the mine) and Safety representatives elected by fellow mineworkers as required by MHSA of 1996. During informal conversations with mineworkers at the two mines, there was a view that seemed to suggest that sometimes operators are coerced into breaking safety rules i.e. ignoring critical controls while chasing production. However, this view was dismissed by Safety Superintendent from Zibulo who noted that every mineworker is empowered to evoke Section 23 and can get support from safety representatives they work with in a section. It was not noted that some safety representatives do not execute their duties diligently. He noted the following during an interview:

“I am not impressed by them (Safety reps). They get trained...and get appointed so that they guide people and advise the Miner when a place is not safe to mine. They are empowered to stop work in unsafe areas...they are the eyes for safety in a section, to guide and represent fellow workers and say this isn't safe and pull out. If they have issues, they can phone us and we go and assist. But they don't do such because work stoppages affect production hence, they risk missing out on production bonuses. We are of the view that their bonuses especially in December when people volunteer to work on holidays have their bonuses be delinked from production just like for Safety officers so that they do their job without fear or hesitation...” (Safety Superintendent, Zibulo)

External or self-imposed pressure in terms of meeting production targets is attributed to mineworkers' lapse to conduct SLAM, pre-shift checks and critical controls. As such, this leads to avoidable safety incidents and accidents thus putting lives at risk and unnecessary production stoppages. In an interview with Kolomela's Chief Safety Officer, he noted that mine culture (often shaped by local culture) shapes behaviour in the workplace. He notes that the biggest safety challenge at Kolomela was that of individual lack of accountability and the mines leniency towards mineworkers who breach safety rules. He noted the following:

“Kolomela employees are spoilt. We have all these rules and regulations, values, we care and respect you know. We always go an extra mile...it's easy to institute compliance amongst contractors but difficult with Kolomela employees because of long processes, there is union intervention...and some get away with it...lack of accountability in another instance has to do with the culture the mine started. When we started we created a culture for example of say if we reach 25 days' injury free, it's an incentive to get a R200 voucher. It's a thank you that we have reached these 25 injury free days...we have to pay people to comply. People get what they want i.e. unions etc....remember with discipline/consequence management if there is no consistence it becomes a problem... (Chief Safety Officer, Kolomela).

The above observations suggest that the very safety systems put in place to ensure a safe working environment are having unintended consequences like delays in safety related disciplinary procedures, ineffective Safety representatives and mineworkers seeking monetary incentives to motivate them to work safely. It just shows how new mines workplace has become complicated as humans interact with systems, the environment and machinery.

8.4.2. Fatigue management

At Kolomela mine, technological innovation has been harnessed to improve health and safety, for instance, fatigue management. Operator fatigue within the mining industry's shift system has been identified as a major contributor to mine accidents⁵⁹. Employee fatigue is a safety concern that affects mines in South Africa (Schutte and Maldonado, 2003). Kolomela mine follows a 'programmatic approach to management of fatigue' and this includes among other things; "...risk assessment, controls, education and training and monitoring and evaluation..." (Kumba Iron Ore SDR, 2013). Whereas at the time of data collection at Zibulo, such was absent at the colliery

⁵⁹Anglo American Thermal Coal Fatigue Management Shift work Guidelines.

because it was operating eight-hour shift system. Kolomela mine uses Predictive Safety Management System (FMS) by PRISM to collate and analyse fatigue data of mineworkers especially from mining section working on shift system. This analysed fatigue data assists in the determination of an operator's condition will deteriorate and implement measures to alleviate fatigue.

In light of the above, the system captures this data in real time from (i) clock-in (ii) calculates fatigue risk/status (iii) deliver fatigue rest (iv) implement fatigue remedial action (v) track fatigue. Findings from Kolomela mine show that operators' trucks are installed with MR688 driver fatigue device that utilises pupil identification monitor to determine fatigue or drowsiness levels based on pupil movement and give a warning system to the operator. The MR688 ensures that operators when tired or feeling drowsy can go to the fatigue centre and have water, coffee etc. The fatigue centre is located at the mining operations and a multipurpose facility that ensures that operators can take a fatigue rest i.e. 25 minutes before being put on a bright light for increase alertness. The procedure after fatigue rest enables alertness of the operator for 3 more hours. This whole process avoids operators taking naps in the equipment hence causing sleep amnesia.

The mine's medical Sister also noted that once the system picks up that an operator is fatigued, it sends a short message service (SMS) to the Foreman of the operator. However, this technological innovation has its own challenges for instance some operators put too much trust on the system and not focus hence taking unnecessary fatigue breaks. This increases work load on other team members. Some operators were also said to abuse the fatigue system where they can just drive the truck to the fatigue centre and inform the medical Sister that he/she is fatigued and realise it is not the case after alertness test. It was underscored that operators sometimes do not want to work or use Wi-Fi and hence claim to be fatigued when in actual fact they are not. Most operators relax at the centre and play poker card, pool games, watch television or buy food at the cafeteria. Informal conversations with some operators revealed their satisfaction with the fatigue system as it helped them convince Foremen when fatigued and receive necessary rest. Fatigue break is mandatory in workplaces that operate 12-hour shift system. Reasonably, during fieldwork at Zibulo, fatigue breaks and a comprehensive fatigue management system was absent given the fact it was a nine/eight-hour shift system.

In contrast to Kolomela, Zibulo by then did not have a comprehensive fatigue management system due to its eight-hour shift system. At that time, mineworkers working on shift system in the morning, afternoon or night shift system did not have break i.e. tea, lunch or supper. Rather the mine ensured that mineworkers did not exceed working eight hours continuously working underground as required by Basic Conditions of Employment Act of 1997 Code of Good Practice on the Arrangement of Working Time. Issues of fatigue were managed through training when each mineworker comes from annual leave. Furthermore, information around fatigue was communicated through pamphlets and booklets. It can therefore, be noted that, Kolomela and Zibulo shift systems inform the approach used to fatigue management. Kolomela mine has a comprehensive fatigue management system because it operates (production) on 12-hour shift system and has harnessed the use of technology to effectively and efficiently deal with fatigue and improve health and safety in the workplace. As opposed to Kolomela, Zibulo did not have a comprehensive programmatic fatigue management because production is based on eight-hour shift system. However, the mine still communicated with mineworkers on fatigue, its causes and how it can be managed.

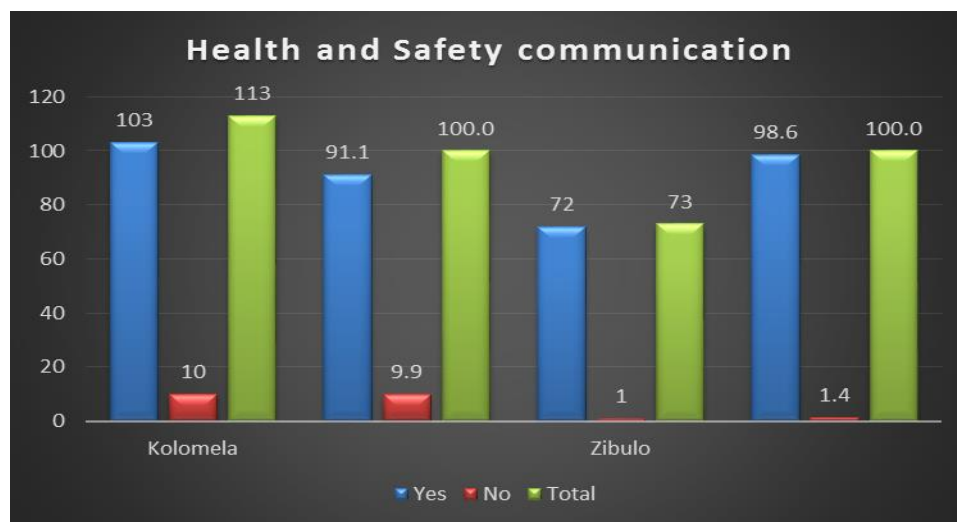
Findings reveal that the fatigue management is not just about fatigue only but also health lifestyles at Kolomela and Zibulo mines. Both mining companies have various health policies that seek to promote healthy lifestyles. This is driven through for instance annual comprehensive. At Kolomela mine, I found that both at the training and fatigue management centres, have mine medical doctors and nurses who assist in terms of medical examination of mineworkers, voluntary counselling and testing and promotion of health lifestyles. Mineworker are encouraged to get tested for HIV and Aids on a voluntary basis and the process is incentivised. Due to high stigma levels as was noted by a medical sister during an unrecorded interview, Kolomela mine created a one stop centre where everything is centralised. The medical centre at the training centre houses, radiologists, medical doctors, dieticians, oral hygienists and medical nurses who provide services to Kolomela employees at no cost. This is in sharp contrast with Zibulo which only has a Voluntary Counselling Testing (VCT) centre onsite but other services are located 40 km away at Anglo Greenside Thermal hospital. Similar trends were observed at Zibulo in connection with VCT activities on which both mining companies have monthly targets in terms of the number of mineworkers who get tested. This is a move to curb the spread of HIV and AIDS scourge in the workplace. Kolomela and Zibulo mines have put out incentives (bags and vouchers) to encourage mineworkers to get

tested and know their statuses. However, a mine nurse at Kolomela castigated the move noting that monthly targets pressure miners to get tested thus taking away the voluntary aspect of VCT. Besides HIV and AIDS testing, mineworkers at Kolomela get tested for drug abuse, diabetes and other lifestyle diseases and receive free counselling and examination. The above findings show the two mining companies' efforts to promote and manage a healthy workforce.

8.4.3. Safety and healthy educational campaigns

Findings show that both mines have invested considerable amount of resources in education and training to ensure that mineworkers are well equipped to identify and deal with risks and hazards in the workplace. Findings show that both mines may be able to reach out to their workforce in terms of health and safety through effective communication. Language is an important aspect in communicating health and safety aspects in the workplace. Findings at the two mines show that there is a relatively young and educated workforce. Communication via different mediums is done through English and as indicated by both General Managers, it 'makes everyone's life easier.'

Fig 1.28 Survey results on the question that asked mineworkers if health and safety messages were communicated clearly and in a language they can understand.



In the survey, participants were asked if health and safety messages are communicated clearly and, in a language, they can understand (Q66). Survey results show that 91.1% and 98.6% from Kolomela and Zibulo respectively indicated that health and safety messages were communicated and clearly and, in a language, they understood. Whereas 9.9% and 1.4% from Kolomela and

Zibulo indicated health and safety messages were communicated not clearly and, in a language, they did not understand. The graph above (Fig 1.28) illustrates the participants' responses. Qualitative findings at Kolomela and Zibulo reveal that both mines have campaigns and initiatives on health and safety. For instance, on HIV and AIDS testing and counselling, Global Safety Day, and quarterly mineral specific campaigns. At Zibulo for instance, findings show that each quarter has a campaign that addresses specific issues. The last quarter in the Thermal Coal sector has been known for high fatalities in comparison with other periods of the year. This trend is attributed to the 'festive season feeling' and hence mineworkers lapse in terms of paying attention to small things. Yet on the other hand, the third quarter is known for high injuries.

At Zibulo, they encouraged the Stand-Up campaign (focused on fun and energy and linked to critical controls). They have what is called Role Play every Tuesday where every mineworker assembles in one place before shift starts, play music with hosts dressed as clowns. Any employee who has been tested for that month will be selected randomly (through employee number by a machine). The selected participant will be asked questions on critical controls and if answered correctly, will be asked to choose a box or money. The boxes will have different items just like any other Money or Box show. The initiative sought to encourage miners to get tested and know their critical controls and hence improving safe working habits while some workers so it as an opportunity to get extra income. Zibulo also ran campaigns like Siyanqoba (focused on falling standards), Umnwabo (chameleon) during change management. At Kolomela mine, they also have Jika to Safety (yellow laces on critical controls), Section 23⁶⁰ and Handrail campaigns. What can be observed with these campaigns is the use of vernacular words. Mother tongue words communicate meaning and hence help mineworkers to understand messages being relayed.

In terms of unsafe habits becoming unwanted cultures in a workplace, Kolomela mine rolled out the hand rail campaign. It had been discovered that 80% of Kolomela workforce was not making use of handrails and contributed to slip and fall incidents. Safety officers would stand at the main entrance of the mine and observe mineworkers clocking in for the shift if the used handrails. Those who did not use handrails would be locked up in small cage next to the entrance for some minutes in full view of everyone and then released. It was argued that forgetting using handrails would also

⁶⁰ Section 23 is a safety campaign to raise awareness among mineworkers on their right of refusal to work under unsafe working conditions. It is derived from MHSA 1996 Section 23.

culminate into forgetting to SLAM an important safety procedure. The campaign was meant for behaviour change and as a result percentage of mineworkers not using hand rails went down from 80% to 10%. It can be observed that the two mining companies understudy have in place different health and safety campaigns in place to educate and remind mineworkers to work safely and achieve Zero harm (a safety campaign that seeks to reduce accidents and fatalities in the mining industry). In communicating these safety messages, in some instances local (indigenous) phrases are used to help mineworkers relate with the campaign. This has had varied impact in terms of success. Also, findings show that the mining companies have put in place different health and safety systems in compliance with the MHSA 1996 to ensure a safe working environment and have had various degree of success. The comparative table in Table 1.17 summarises various innovations that have been introduced at Kolomela and Zibulo mines.

Table 1.17 Comparative table showing similarities and differences between Kolomela and Zibulo as workplaces

Iron Ore mine (Postmasburg, NC)	Coal mine (Ogies, MP)
Management approach/practices/models • Values: safety, care & respect, integrity, accountability, collaboration, innovation • No open-door policy (GM) but follow structures • Operational excellence model (KOPEX) feedback, evaluation and reflection at shop floor • War room & Dpt. level meetings	Management approach/practices/models • Values: safety, care & respect, integrity, accountability, collaboration, innovation • Open door policy by General Manager (shop-floor) • CMOS (Management Operating System) no evaluation at shop floor • War room in level 4 meeting
Workplace Innovation • Production & safety bonuses • Envision (employee share scheme) • Workplace restructuring without job losses & ramped up production • Introduction of smart technology and machinery • Satellite tracking system & speed monitor • Engineering services outsourced i.e. service of trucks, loaders, and other machinery outsourced to Barloworld CAT, Liebherr & Komatsu • Endorsed by organised labour • Production monitors in the GM's office and control room (production) • Skills training and development	Workplace Innovation • Production and safety bonuses (Ekhaya) • No Employee share scheme • Increased production to avoid job losses • Race to One million-man tonnes • Endorsed by organised labour • Engineering maintenance internally executed • Shift changes endorsed by organised labour • Production monitors in the shift bosses, control room and GM's offices OIDs • Skills training and development
Health and Safety • Full PPE & critical control management SLAM • Fatigue management (12 hr. shift system) & fatigue monitors • Shift based monthly training (work and health and safety) • Health & Safety promotions/campaigns –VCT • Joys and Sorrows • Identification of Hazards	Health and Safety • Full PPE & acceptable safe mining standards & Critical Controls (SLAM) • No fatigue management system (8 hr. Shift) • Training happens after annual leave (30 days) or when licence has expired/refresh • VOHE & Dust control • Health and Safety promotions-VCT • Lottery

8.5. Discussion: Sanitised workplace order

In trying to understand the spatial orders of new mines in South African, a close examination of workplace organisation is imperative. An understanding of the relationship between capital and labour in shaping a workplace as an economic landscape is important because the process informs

the reflection of a new workplace order. The outcome of the contestation between labour and capital to control space then defines a workplace order. Many studies have been undertaken in the past that sought to understand characteristics of colonial, apartheid and post-apartheid workplace orders in South Africa (see for instance, Webster, 1985; Moodie, 1994; Von Holdt, 2003, 2005; Bezuidenhout, 2005 see Chinguno, 2013). These studies have been conducted at old workplaces i.e. those established during colonial or apartheid periods and still existent in the democratic era. These labour scholars' conclusions are locked on whether workplaces have changed or not or in transition and this is relevant in order to understand transformation of colonial/apartheid workplaces in a country that was or is still in transition. Not much has been done in terms of focus on new mine workplaces on recruitment strategies, work organisation, innovations and subsequent contests between labour and capital. From Webster's (1985) racial division of labour in the steel foundry to Von Holdt's (2003) 'apartheid workplace regime' in the steelworks and post-colonial workplace regimes by Bezuidenhout (2005), *sanitised workplace order* is deployed as an analytical tool to understand workplaces of the two new mines understudy established in the democratic era (late year 2000).

Work organization of the new mine as epitomized by Kolomela and Zibulo can be conceptually described as *sanitised workplace order*. Based on the findings of this study, a new mine refers to a new mineral extraction project often referred to as green field in mining. Kolomela and Zibulo mines were established and constructed from 2008 with historical challenges of colonial and apartheid epoch in mind but in a democratic South Africa. The democratic era is officially characterised by new legislation, government, globalisation and neoliberalism as opposed to the colonial and apartheid periods. New absolute (physical) infrastructure enables capital to modify and introduce technology and mechanization and other innovations as the mines are relatively young and modernised. These are meant to improve safety and production optimization through research and development (McFarlane, 2001). Technology and mechanization linked with robots (artificial intelligence) known as automation signify capital's intention to shape geography in particular ways that enable accumulation of profits in a safe and efficient way. It can either result in job losses and or increased load for labour. Technology and mechanization can also be seen as a tool to control labour through subjugation (Marx, 1990 cited in Hlatshwayo, 2013). Labour is not just passive to technology and mechanization intervention but able to resist negative effects (Webster, 1985) in a reactive manner and also re-articulate these technological and mechanical

spaces to meet its biological and social reproductive needs. Noting these findings from Kolomela and Zibulo, it is imperative to analyse the elements that constitute a sanitised workplace order.

8.5.1. New employment strategies

The two mines under study have devised new employment strategies in terms of their recruitment process i.e. hiring young, educated and diverse labour force. Kolomela and Zibulo mines in relative and relational terms are characterised by a young and educated workforce. A young, educated and diverse workforce brings a different dynamic into the workplace given their high literacy levels (see chapter 7) and how they make use of it to resist different forms of control and articulate its reproductive claims. Furthermore, as shown earlier, women constitute 13% and 23% of the total workforce at Zibulo and Kolomela mines respectively. Women in mining based on 2015 statistics by the Chamber of mines constituted around 13% of the total workforce i.e. 57 000 across all mines in South Africa (CMSA, 2017). This shows significant progress across the two mines of which Kolomela is (at the time of the study) ahead of the national average. Opening up mining spaces for women is a positive step and more still needs to be done.

The General Manager of Zibulo colliery revealed that some of the best roof bolt operators in the shafts underground are women and they execute their tasks efficiently and perfectly without making mistakes. They outperform their male counterparts. This in some way shows a significant difference with what Benya (2013) in the platinum belt where some team leaders hesitated having women in their teams as they will negatively impact production. Comparatively, at the Iron ore mine, Foremen in the drilling section alluded to the fact that best drillers are women and not men. Women have proved that they can perform tasks that have been historically done by men except for rock drilling (platinum and gold) and operating dovers (machinery used to level earth/waste at mine dump) that whose seats are said to cause back problems for them. This challenges, beliefs, superstitions and perceptions that seek to undermine and discriminate women based on gender in the mining environment (Mxhakaza, 2010). Furthermore, the colliery has young female Shift Bosses that come through the company's graduate program called Professional in Training (PIT). Young black Africans (both men and women) at the same colliery constitute a considerable number of mine captains, engineers and other middle-management positions. However, more still needs to be done in terms of further diversifying mine workplaces in terms of accommodating the physically challenged, transgender among others (MHSC, 2016).

It also means that workplace culture and relations are built upon collectively directly or indirectly as opposed to older mines whose culture and relations have been shaped and continue to be curved by past practices from colonial and apartheid periods. The worker identity that emerges from these 'spaces of engagement' negotiated and renegotiated on a daily basis as management seek to improve human relations in the workplace and subtle control of labour. In addition, the *sanitised workplace order* is also characterised by migrant labour, a continuation of the past but whose nature and reasons for it has significantly changed. During the colonial and apartheid periods, migrant labour 'the rural in the urban' workforce was used to create a proletarianized workforce into the wage economy (Mamdani, 1996). Through racist and segregationist legislation, labour reserves were a pool for cheap migrant labour (Wolpe, 1972; Legassick, 1974). However, contrary to nature of migrant workforce of the past and that in older and gold and platinum mines, migrant workers at Kolomela and Zibulo are predominantly from Northern Cape and Mpumalanga while some come from mining and bigger towns and cities. Some of them are professionals i.e. Engineers, Surveyors, Accountants etc. There are no labour recruitment agencies like TEBA⁶¹ and related organisations. People in free South Africa can freely move from location to the other as opposed to during colonial and apartheid periods. The migrant labour from these two mines is young, skilled, educated and migrate from one place to the other in search of opportunities.

Therefore, findings in terms of the elements of the *sanitised workplace order* show that Kolomela and Zibulo have taken a human capital factor approach through emphasis on training and development hence emphasizing worker interests in their operating model. Mining industry in South Africa through legislative requirements (Mining Charter, 2015 and Skills Development Act 1998⁶²) and best practices, is driving training and development of mineworkers on their specific roles, machines and equipment they operate. This training and development is essential especially at the two mines that are technological and machine intensive mining operations to improve safety and productivity. On the other hand, training and development though masked as human factor

⁶¹TEBA is a diversified company that provides, labour recruitment, human resources, social, financial and management services during and post-employment. TEBA was previously owned and operated by South African mining companies and was established in 1977 as an amalgamation of Mine Labour Organisations (NCR) and Mine Labour Organisations (WENELA) Ltd.

⁶²Skills Development Act 97 of 1998 is a law in South Africa whose purpose among others as stated in section 2 (a) to develop the skills of South African workforce-

- i. To improve the quality of life of workers, prospects of work and labour mobility;
- ii. To improve productivity in the workplace and the competitiveness of employers
- iii. To promote self-employment...etc. among other things

development, it is following legislative requirements on safety and occupational health. Findings show that Kolomela and Zibulo reveal a ‘calculated give and take approach’ that seems to be working for the two mining operations. The idea of operating models is driven by a neoliberal agenda of integrated maximum and efficient utilisation of resources to generate profits. However, contrary to structural arguments that view labour as docile and inert to the workings of capital, through resilient workplace orders, labour has agency and power to offer resistance within the workplace. The contestations that emerge between labour and capital through co-operation, resistance, co-option and contradictions becomes a geographic expression of how new mines organise the workplace. In light of the above, the idea of a sanitised workplace order shows a shift from the apartheid workplace.

8.5.2. Management to subordinates’ relations fluid and contested

The workplace as part of the broader ‘economic landscape of capitalism’ is constantly changing and dynamic (Rainnie, McGrath-Champ and Herod, 2011). Capitalism as exemplified by Kolomela and Zibulo mines is in existence to make profit. It then follows that space has to be shaped in particular ways that enable generation of profit. The workplace then becomes a contested terrain between capital and labour as both have vested interests (Herod, 2012). The contestation for control over the workplace creates the dynamism that characterises the workplace (Harvey, 2006). The ability to control the workplace grants power to influence work organization. Hastings and MacKinnon (2016: 104) ‘workplaces control is an outcome of dialectical interactive and negotiation process between management and labour.’ Findings from Kolomela and Zibulo (mining departments) reveal the two mines understudy have found ways to convince labour to cooperate to achieve set safety, health and production targets. This is broadly being achieved through Anglo American values and operating models. Different management practices are employed by the General Managers and their leadership teams. In the earlier section, it has been shown on how both GMs leadership styles though different are informed by Anglo values that include care and respect, integrity, collaboration, innovation, accountability and safety⁶³. These values are translated into operating models KOPEX and CMOS.

⁶³Anglo American values:

Safety, Care and Respect, Integrity, Accountability, Collaboration and Innovation

See www.Angloamerican.com/about-us/our-approach

At Kolomela mine, the General Manager's leadership style is embedded in bureaucratic structures. He adheres to set structures and strictly monitors performance and effectiveness of Heads of Departments in terms of the functioning of systems, the operating model and people relations. This seems to be working because the GM is viewed as effective, caring and fair by mineworkers I spoke to. However, interviewed mineworkers accuse middle-management of being oppressive and selfish. Contrastingly, Zibulo's General Manager has an 'open door policy' where any mineworkers' can approach the General Manager if not happy with work related matters for instance production bonuses. The General Manager's approach can be interpreted as paternalistic (Moodie, 1994; Grant, 1992) however, it's has become modified as opposed to that of colonial and apartheid periods. The 'open door policy' by the Zibulo General Manager seeks to indirectly convince mineworkers to cooperate with different systems of control while at the same time get remunerated hence fulfilling their desires and interests. It can be viewed as an act of care and respect. However, the General Manager still respects and interacts with the workplace hierarchy without undermining its decision-making authority but rather enhance effectiveness of the system. Therefore, in this instance one can observe two different approaches of leadership styles and control with similar outcomes.

Also, in terms of the composition of the leadership team, Zibulo colliery's HODs are predominantly White males and a single Black African male hence reflect mining workplaces of colonial and apartheid periods (Moodie, 1994; Von Holdt, 2005). However, the justification given for the status quo is that General Managers who specialise in starting up new projects have the right to select a leadership team of their choice. However, when the mine is in full operation, they leave and start a new project, creating space for able and diverse leadership. Another challenge raised by the two General Managers was the fact that senior managers are appointed from the head office from the graduate program pool funded by the mines hence perpetuation of racial imbalance that does not represent broader demographics of the workplace. Webster (1985) has shown how historically, foundries in South Africa during the colonial and apartheid periods were characterised by racial division of labour and racial job reservations/colour bars (Von Hold, 2003; Krikler, 2005; Bendix, 2015). The despotic regime of an apartheid workplace was further informed by racial structure of power, segregation of work facilities based on race, migrant labour, 'bifurcated industrial geography' and racially discriminative legislation (Webster, Von Holdt, 2005, Bezuidenhout, 2005). The system put in motion by capital with the assistance of the state resulted

in subjugation and discrimination of workers. However, the two workplaces under study depict a different story. Institutionalized racism has subsided and is left in a few pockets. Findings at both mines show non-tolerance to acts of racism and discrimination. Workplace policy informed by new legislation like the LRA 1995, BCEA 1997 etc. and Anglo-American values, organisational culture, and organised labour have become central to elimination of racism, discrimination and safeguard of worker rights.

On the contrary, Kolomela leadership team slightly reflects Postmasburg's demographics (four White males, one Coloured female, two Coloured males and two Black African males). In terms of goals of the Mining Charter to transform the mining industry in terms of the leadership profile of mining operations, Kolomela mine shows significant efforts to transform leadership profile in order to address historical imbalances of the past and reflect diversity of the present workplaces. At both mines, interviewed workers were of the view that their GMs were caring and had interests of the shop floor at heart but were not happy with middle-management. They saw the GMs as fair and consistent but thought middle-management deliberately stifled worker interests. This sentiment can be partly explained by for instance Zibulo's GM's 'open door policy' that can potentially encourage disgruntled mineworkers to overlook bureaucratic structures and rush straight to the GM. On this note, in spite of these differences, Kolomela and Zibulo mines (mining departments) depict a huge shift in terms of leadership style to that of colonial and apartheid period. Nonetheless, it is imperative for an organisation's leadership structure to reflect the diversity of the workforce and failure to such can potentially result in disgruntlement and breakdown of trust between management and the workforce.

In addition to the above, the two cases under study make use of operating models (KOPEX and CMOS) to inform activities within the workplace. The operating models depict methods of controlling labour. The operating models entrenched in the Anglo values as medium that coordinates interests of labour and that of capital. KOPEX and CMOS are relational spaces that depict 'hegemonic despotism' that seeks to manufacture consent of labour (Burawoy, 1985). Mineworkers want money through wages and salaries while capital want profitable output. Therefore, there is a symbiotic relationship and hence capital and social actors cooperate as opposed to coercion to meet their needs. Through KOPEX and CMOS, labour at both workplaces collaborate with capital by taking part in the process for instance agree to undertake their roles and

responsibilities, to be accountable and work safely. The mining companies provides machine, equipment, efficient systems and procedures and meet legal requirements to provide a health and safe workplace. However, the operating models depict what Burawoy (1985) calls ‘rational tyranny of capital’ where profitability of a capitalist operation determines production targets, number of employees, rate of remuneration, shift system. At Kolomela mine, labour cooperates with capital as shown earlier through its participation in the KOPEX review and evaluation system. Mineworkers at the shop floor feel respected and empowered through their active involvement i.e. presentation during KOPEX review. It cultivates a sense of belonging because Kolomela mine as place of work serves as a locus of identity (Agnew, 1987) and generate affect and commitment.

Furthermore, operating models (KOPEX and CMOS) are used as methods of monitoring and control of different key decision makers at Kolomela and Zibulo. On one level, the various hierarchical meetings the GMs have with their subordinates enable close supervision and monitoring and, on another serve, to reinforce hegemonic despotism. Evaluation of the effectiveness and challenges of various aspects of systems related to KOPEX and CMOS. In the case of CMOS at Zibulo for instance, the Mine daily review meeting (Level 4) brings together different decision-making individuals from mining, engineering, and support services to discuss issues arising related to mining production. It is equivalent to Kolomela’s war room (Foreman, Shift bosses, General Engineering Superintendents (artisans), Section Engineers, Mine Overseers, Section Managers and Engineers, Engineers, those equivalent from Human Resources, Finance and Technical Services Division (Survey, Geology, Rock Engineering and VOHE) and HODs and the GM. It is in this daily meeting that GM’s hegemonic despotism is renewed and reinforced in terms commitment and accountability. Given Zibulo’s GM’s open-door policy, in most instances knows issues happening in different sections and therefore demands answers from decision makers from such sections. Outcomes from Level 4 meeting are ideally supposed to be communicated in the lower levels until they reach the shop floor in this case, operators in mining sections underground. Therefore, it can be argued that capitalism through these enhanced operating models (KOPEX and CMOS) has found effective and efficient ways to make mineworkers cooperate and commitment to interests of capital through workplace organisation. Also, as relative space (Harvey, 2006), ‘level 4’ and ‘war room’ meetings at both mines reduce or eliminate the distance between top management and second layer of front-line management. These enhancements are visible in terms of health and safety systems and procedures, introduction and enhancement of

technology and innovation. The knowledge and understanding of these rules, procedures and policies, augmented by clear communication (English) and consistent application of these rules without favouritism depicts a change from the past. This is mainly driven by lessons learnt from past mines and the desire to create new culture and workplace values underpinned by allowing contestation of ideas and open-door policy as in the case of Zibulo GM with a young and educated workforce.

8.5.3. Modern approaches to work organisation

The introduction of technology and mechanisation in mining has become a reality especially in the South African context. Different justifications have been put forward for increased role of new technology and automation in mining operations globally including South Africa. For some scholars, technology and automation improves ‘safety and operational effectiveness’ (McFarlane, 2001:115). On the safety front, technology is pillar number three of the Culture Transformation Framework⁶⁴ document agreed upon by mining companies, organised labour and the state (Mine Health and Safety Council, 2011). In South Africa, technology is one element of modernization, which, is ‘transition and transformation of the mining industry of yesteryear to that of tomorrow’ (CMSA, 2016:30). This is truer with regard to old mines established during the colonial and apartheid period whose minerals lie deep underground for instance gold and diamond mines. Technology through innovation on safety systems, equipment and machinery is viewed as a panacea toward achievement of Zero Harm. Likewise, the mining industry is of the view that general modernisation of mines will improve operational effectiveness through cutting costs (efficient machinery and equipment) and increased productivity. Captains of the mining industry have justified modernization of mines as a way to increase lifespan of mines i.e. gold mines and save 200 000 jobs by 2030 (CMSA, 2016: 31).

However, trade unions and some academic scholars view increased use of technology for instance mechanization and automation as threats to mineworkers’ jobs where, artificial intelligence through robots will replace human labour (Patel, 2017; Balch, 2017). For instance, Hlatshwayo (2017) found out that trade unions have failed to defend workers jobs in the wake of technological

⁶⁴ Culture Transformation Framework is a document agreed upon by South African mining sector principals in 2008 that enforces action-driven plans to enhance mine health and safety performance. It seeks to strengthen culture of health and safety; promote learning industry and building capacity and make safer and healthier workplaces within the South African mining industry (MHSC, 2011: 3).

change especially in the South African manufacturing sector due to reactive as opposed to proactive response. Reduced trade unions interest on research on technology and education on issues around technological and work organisation change of their membership resulted in more than 40 000 jobs being shed from the 1950s up to early 1990's to less than 10 000 at Arcelor Mittal (Hlatshwayo and Buhlungu, 2017). However, is yet to be the case at the two mining operations under comparative study. No jobs were lost at the time of the study given the fact that the two mines had restructured and also adopted new operating models and latest technologies.

Findings from Kolomela and Zibulo show that both operations are technologically intensive in terms of systems, equipment and machinery they use as opposed to platinum mining that is mass-based labour force (Stewart, 2015). Based on evidence shown in the earlier sections, both mines from their construction depict modernized mines for instance in the case of Kolomela in types of machinery, equipment and technological systems. As an open pit mine and absolute space (Harvey, 2006), the mining area through to plant and iron ore rail loading bay are designed to accommodate sophisticated machinery (trucks, excavators, shovels etc.) and equipment through intelligent systems. In relative terms, the design of roads, distance from mining area to the plant, conveyor belts and rail road are constructed in such a way that less time is spent transporting extracted mineral to the plant and subsequent transportation. In the case of Zibulo, in a section, cutting sequence is determined on surface and Face bosses together with gang cut following set sequences. The Continuous Miner (CM) cuts and loads the coal into a shuttle car that in turn races to the conveyor belt conveniently located near the coal face. Once loaded on the conveyor belt, the coal is transported to the silos on surface and from those silos to Phola processing and washing plant 30 km away via another conveyor belt. Distance is eliminated through spatial organization and design. Railway line i.e. from Phola to Richards Bay or from Kolomela to Saldanha bay are strategically linked with the mines for easy and efficient transportation of coal and iron ore respectively. These can be viewed as benefits of new mines that are modernised from the construction phase and as opposed to older mines whose stoping⁶⁵ and development requires alteration to accommodate new machinery and equipment deep under the earth's surface (see Stewart, 2015 on accelerated mechanisation on South African Platinum mines). The design of the two mines enables continuous implementation of new technological innovations that young and

⁶⁵ Stoping is an open space left underground when desired minerals have been extracted. The rock will be deemed as strong enough to support and not collapse the stope. (see also Stewart, 2015: 635)

educated operators have been oriented on embrace. These workplaces are not labour intensive thus technological innovation does not take away jobs but rather enhance work. However, it can be critically argued that mechanised and technology intensive mines depict sanitised absolute spaces that seek to increase managerial monitoring and control of labour at these new modern mines.

At Zibulo, the implementation of Operational Information Delivery platform enables surface personnel to monitor data flow from machines, belt and environmental monitoring systems (dust and ventilation) from underground 24 hours and 7 days (Zibulo News, 2016: 33). With big screens/monitors in offices of production related personnel, they can monitor production, machine and equipment performance and identify problems and challenges. Through control room operators, underground personnel can communicate directly with Shift bosses and middle management on production related matters instantly through short wave radios which are linked to landline telephones and mobile phones. Communication has become instantaneous, ‘time-space compression’ (Harvey, 1989) hence it improves production and performance. All these physical configurations play out spatially and show the centrality of occupation and production of space by capital (Lefebvre, 1976; Herod, 2003). Capitalism is a geographically embedded system and its spatial organization is central to accumulation. Thus, Kolomela mine and Zibulo mines are economic landscapes that have been spatially organized to function in particular ways that enable accumulation of surplus value.

In addition to the above, control of sanitised absolute space (physical outlay of the mining operations, mobile space (equipment and machinery) and labour is central toward realization of profit. The introduction of technological innovations like fatigue management systems, MR688 driving fatigue detectors and remote control of machinery and equipment by control room operators is a source of power by capital. On one hand, the innovations are meant to improve safety levels (fatalities and incidents), standards of which South African mining industry has improved significantly against global benchmarks (CMSA, 2016) and production optimization. This constitutes part of capital’s vision i.e. accumulation and profits. Alterations and improvements of the two mines for instance have an end goal of making them ‘landscapes of profitability’ (Herod, 2001). In the same vein as capital controls space in its different forms, it seeks also to control labour to realize its spatial vision. The control and monitoring come through the same innovations that seek to promote and ensure safety and production like remote control of equipment and

machines, safety procedures, standards and systems, fatigue management and working hours. Mineworkers resist or cooperate with capital in ways that enable them to realize their spatial vision. Social actors (organised labour, mineworkers and communities) are also geographically embedded (Herod, 2012) and this creates contestation over control of space. Through mineworkers' spatial praxis, they impose themselves on the economic landscapes in different ways to meet their social, economic and political goals. So how does Kolomela and Zibulo mineworkers impose themselves at the two mines?

In the findings section, I showed how mineworkers from Kolomela and Zibulo exercise structural, associational (institutional) and logistical power (Brookes, 2013; Webster et al., 2008; Silver; 2003; Wright, 2000) and assert themselves spatially to realize their biological and reproductive needs (Herod, 2012). Spatial embeddedness of labour can be tied through place. For instance, Kolomela and Zibulo as a 'place' develops 'locus of identity' (Agnew, 1987). Mineworkers feel that they belong to the company and in the case of Kolomela are shareholders through employee share scheme, Envision and cooperative participation in KOPEX for instance and develop love of place. Thus, it can be argued that sanitised absolute spaces (Kolomela and Zibulo) through various spatial strategies depict *social inclusion of relational space*. These interventions and various interventions by capital are meant to manufacture consent (Burawoy, 1979) of labour and co-opt them without force to meet production targets and remain loyal. When they feel excluded, abused and unfairly treated they exercise individual or collective agency in different ways to shape or influence absolute and relational space to fulfil their needs and interests. At Kolomela mine, when operators of dump trucks in P5 (Patterson levels) were not happy with restructuring that had taken place at the mine engaged in calculated collected agency through logistical power in mobile spaces (trucks). Following Katz (2004: 251) threefold classification of resistance by workers (resilience, reworking and resistance), truck Operators at Kolomela mine deployed reworking strategy without stopping production. They drove dump trucks at a very slow pace and as they collected waste from mining area that had been blasted to the dump site. This collective act though it was executed individually, operators forged solidarity through job category (Operators) just like Rock Drill Operators during the South African wildcat strikes on the platinum belt (Chinguno, 2015). This reduced the number of trips each truck and operator are supposed to make per shift and did not meet set production targets. Truck operators in level P6 had been promoted to P5 but still continued driving smaller trucks yet operators on P5 continued operating bigger trucks with no raise or

promotion to a higher level i.e. P4. Through use of logistical power i.e. knowledge of routes in the mining pits and mobile space (ore and waste dump trucks) they deliberately slowed down production and management responded and sorted out the issues. Other operators subvert for instance the fatigue monitors and claim that they are tired whilst the machine says something different. This demonstrates agency of labour as mineworkers exert themselves on the landscape and pursue their interests (see Hauge and Fold, 2016).

In light of the above, one can observe clashes between technology and labour. These subtle acts of resistance and expression of dissatisfaction can be equated to James Scott's (1985) 'small arms fire' where peasants in Sadaka engaged in foot-dragging and evasion as everyday forms of resistance to exploitation. Similarly, at Zibulo colliery, when a section is behind production targets, mineworkers change cutting sequence. They draw from their tacit knowledge by cutting 24 meters instead of 12 meters without roof bolting (roof support). It is a dangerous act that can result in fall of ground and result in fatalities, injuries and destruction of equipment and machinery. In chasing production targets to get production bonus, mineworkers take risks that can either result in loss of life or employment. Cutting a coal face in an unsupported panel is contravention of safety rules and is an offence that can result in dismissal.

At an individual level, Operators find solace in some of these spaces i.e. trucks, drilling machines and excavators etc. as evidenced in the case of a Drilling Operator who strategically uses the drilling cabin machine during the shift as place to reflect on her life, deal with emotions while work is in progress. Others use workstations as a place to study and upgrade themselves. All these different instances denote different ways that mineworkers exercise the agency by contesting with capital to realize their own interests and vision. Therefore, the workplace is a 'contested space' (Ellem, 2010) where both capital and labour tussle for control of space for their varied interests. Sometimes there is no agreement while other instances there are agreements if labour has outcomes that benefit it. For instance, organized labour cooperates with capital in terms of change shift hours at Zibulo from 9 to 12 hours shift systems to increase production and save jobs.

Similarly, at Kolomela, organized labour made concessions with management to restructure after there was a guarantee of no job losses. Globally, there is a strong feeling that the drive by mining companies toward increased use of artificial intelligence will result in job losses as in the case of Australia (Balch, 2017). In South Africa, through workplace restructuring massive job cuts are

imminent in the platinum and gold sectors (Faku, 2017) due to capital's own contradictions and crisis (viability challenges, stagnation of mineral prices in rand terms, binding infrastructure constraints, inappropriate application of regulatory tool, labour market instability), uncertainty in policy regulatory frameworks (Mining Charter) (CMSA, 2016) and geological set up of minerals. Some mining operations have been sold, others mothballed or put under maintenance and others closed resulting in retrenchments and non-recruitment of new labour force. However, at Kolomela mine, restructuring took place without job losses while at Zibulo labour and capital collectively agreed to increase production by moving to a 12-hour shift system. This is significant in that most job losses have been taking place at old mines while newer mines that tend to be heavily mechanized have different ways of dealing with crisis of capitalism. KOPEX at Kolomela enables mineworkers to have knowledge of the company business and therefore enables them to take decisions based on facts. Furthermore, the employee share scheme (Envision) that is tied to production brings a sense of ownership from the side of workers. They are involved with the KOPEX process from the shop-floor level going up which is in contrast to Zibulo's CMOS that excludes implementers from the planning and evaluation process. In this instance, workplace organization and relations are punctuated by cooperation and sometimes conflict depending with what is at stake. Capital gives i.e. incentives like production and safety bonuses hoping to control labour while labour also operates on a 'give and take terms' when there is something for them. Labour can perform when it has the requisite skills and constant training. Evidence from the findings shows that mineworkers are constantly attending training and courses linked to their job descriptions and I elaborate this in the section below.

8.5.4. Education and training

In the past, Black Africans working in mines did not receive formal or workplace-based training due to racial discrimination (Bendix, 2015). However, capital as depicted by Kolomela and Zibulo mines has adopted a human face approach through intensive education and training in terms of the actual job and health and safety. Capital, machinery and equipment intensive operations require skilled and educated labour force. The vision of the South African mining industry to have a modern mine requires a skilled and educated labour force. This will enable mineworkers to be able to safely and correctly execute tasks stated in their job descriptions protecting themselves, fellow workers and the general public (MHSA, 1996). Mineworkers are also expected to be taken through

induction and refresher courses and guidelines on the actual job and health and safety. Management is also expected to provide Adult Basic Education for its employees (Mining Charter, 2015; Mine Qualifications Authority, 2011). The MHSA of 1996, Mining Charter, 2015, Skills Development Act of 1997 provide guidelines on training of mineworkers. The Mine Qualifications Authority is the sector education training authority on mining and minerals and report to the department of Higher Education and Training.

Findings from worker survey shows that Kolomela and Zibulo employees are generally satisfied with levels of training in their respective workplaces as shown in the earlier section. It was also shown that language used to communicate with mineworkers in their workplaces was understandable. The two mines have different campaigns in place that seek to promote health and safety in the workplace. These platforms of learning can be seen at one level as battles to control workers by promoting cooperation. In the case of Zibulo, they have ‘role play’ on Tuesdays and it is compulsory for every mineworker on duty to attend. Shifts resume after role play has come to an end. By making role play show compulsory, it is a mechanism to instil obedience and hence control labour. Some mineworkers resist such by not attending while some cooperate and participate in the show hoping to win a prize (money or household goods) through Zibulo lottery as explained earlier. Labour participates because there is something for them i.e. possibility of money or goods and general safety information and work safely underground. On the other hand, capital through Zibulo seeks to instil a culture of safety through hegemonic safety messages and improve safety records hence a productive mine. At Kolomela mine, All the shifts directly involved in production Kolomela and contractor employees attend shift training once a month. It is compulsory for the workers to attend as the mine pays them a normal working shift. However, some mineworkers do not want to attend and hence take out sick notes and stay at home. These instances among others highlighted in the findings section show the constant struggles between capital and labour. Kolomela and Zibulo have structured their operations in ways that enable them to extract surplus value and also comply with regulatory frameworks while labour has its own vision different to that of capital and becomes a ‘contested space’ that is negotiated and re-negotiated resulting in sometimes conflict and cooperation and this is a character of a sanitised workplace order of the new mines in this case Kolomela and Zibulo.

8.6. Conclusion

This chapter I have demonstrated how the two new mines, Kolomela and Zibulo have managed to construct exceptional workplace orders that are significantly different from the past. I used the concept of *sanitised workplace order* to articulate the kind of workplace that has emerged at these two mines. In comparing these two workplaces in absolute, relative and relational space (Harvey, 2006), the two mines as economic landscapes depict attempts to sanitise or cleanse the mines from the ills of colonial and apartheid periods but at the same time confronting and adjusting to contemporary challenges. The outcome is *sanitised absolute space* and is being achieved through new employment strategies (young, educated, skilled and diverse workforce), modern approaches to work (operating models, mechanization and technology, improved health and safety and education and training) and fluid and contested leadership and subordinate relationships. It has been shown that, the two managers deploy different management styles that are context specific and are working and also manufacture consent from labour through different hegemonic messages (health and safety, KOPEX and CMOS) punctuated by consistent application of agreed upon rules, policies and procedures. Spatial organization and social relations in the workplace have culminated in social inclusion of relational space. Consequently, the two cases depict that capital has managed to get trust from workers not because workers are passive recipients but are calculative and have interests on the landscapes created by capital (see Kiil and Knutsen, 2016; Burawoy, 1979; Lier et al., 2018). As shown in the chapter, mineworkers at the two mines comply when it suits them but when it constrains the agency, they re-articulate workplace relations by exerting different tactics and strategies through different types of power that are spatially embedded as they express their feelings such as unhappiness via reworking strategies through logistical power as in the case of truck operators reducing the speed of dump trucks to deliberately slow down production and get attention of management. Thus, the *sanitised workplace order* depicts a new spatial strategy by capital to control space and labour but at the same time it is contested, subverted and re-articulated by labour to realise its own vision. The following chapter provides overall conclusions of the study, empirical and theoretical contributions, and limitations of the study.

Chapter 9: Conclusion

9.1. Introduction

How do mines' set up after the end of apartheid differ from mines that were set up during the time of the system? In this chapter, I provide a summary of the key findings of the study and the main argument as well as the conceptual contribution to labour geography and labour studies debates, bearing in mind that the goal of extended case method is to enhance theory. I introduce the concepts *sanitised workplace order* and *sanitised residential space* in order to develop this argument. Furthermore, using Harvey's matrix of space refined terms *sanitisation of absolute space*, *time-space compression of relative space* and *social inclusion/exclusion of relational space* and I also outline the implications of these findings on policy, to the broader mining industry and limitations of the study and possible future research agenda.

9.2. Summary of findings and argument

In this study, I argue that the case of two mining operations (Kolomela and Zibulo) in different geographical locations, depict two mining operations grappling with spatial contradictions and variegated geography. The two mines were established as spatial fixes, for instance, Zibulo to deal with crisis of accumulation (Harvey, 2001; Jessop, 2006) within the Witbank coal fields and Kolomela, to alleviate challenges at Sishen, an old sister mine that had become expensive to operate. In the case of Kolomela mine, the holding company (Kumba Iron Ore) was in the process of mine closure at Thabazimbi mine in Limpopo and redistributed most of the equipment to Kolomela and Sishen mines. Given the fact that minerals (coal and iron ore in this case) are fixed, capital reconfigured space through construction of new modern mechanised and technological compliant mines hence a shift from conventional labour-intensive mining method that dominates South Africa's mining landscape (see Stewart, 2015). The mines are well connected with modern and efficient transport and communication infrastructure as shown in the preceding chapters. Furthermore, the mines in establishing these spatial fixes sought to escape or avoid the logic of the apartheid workplace regime (Von Holdt, 2003; 2005) and introduced new methods of managerial monitoring and control of workers. Importantly, Kolomela and Zibulo follow different spatial strategies to recreate their own landscapes and the outcomes are unimaginable both in the workplace and immediate societies. The way Kolomela and Zibulo directly and indirectly structure

space in its various forms reflects “...a dialectically defined component of the general relations of production, relations which are simultaneously social and spatial” (Soja, 1980: 208). At both workplaces, they have introduced possession of New Senior Certificate as a minimum requirement for entry level positions, new operating models, mechanization and new technologies to enhance safety and production and consistency in application of rules and procedures consequently creating what I regard as a *sanitised workplace order*.

The thesis shows Kolomela and Zibulo mines adopted different approaches on how they engaged and involved themselves with their respective communities. In Postmasburg, Kolomela mine adopted a large-scale approach through construction of new landscapes i.e. transport and communication infrastructure; transport for employees and indirectly new spaces of consumption and new housing units that I regard as *sanitised residential spaces*. Kolomela immersed itself in community affairs by increasing its visibility through community related projects and paradoxically resulted unintended consequences. This is evidenced by increased financial reliance on the mine by Tsantsabane Local Municipality, community protests and general strained social relations with the host community. Contrastingly, Zibulo mine deployed a different invisible route by being withdrawn from community development. The mine did not build housing units for its employees but instead offered transport and housing allowances; made donations to the main municipal offices in Witbank and other corporate social responsibility projects that included upgrade of sewer reticulation pumps, renovations of schools and a clinic in Phola Township. The differences on strategies adopted by the two mining operations points towards variegated geography (including old spatial fixes) in which these two mines find themselves operating. How can one then explain the emergence of *sanitised workplace order* and *sanitised residential spaces* the mines have differently established in the democratic South Africa?

Herod (2012: 335) comments that “capitalism is a geographically structured economic system...where capital and labour must be brought together in certain geographical configurations.” These configurations are what Harvey (1982) refers to as a spatial fix. In Chapter 5, I showed how the two mines adopted different paths of spatial organization and geographic expansion informed by internal crisis and external contradictions (challenge of apartheid) and constructed Kolomela and Zibulo mines. In Ogies, Zibulo mine utilised existing infrastructure like roads and communication networks. The mine benefitted from the existence of other mines

(African Rainbow Minerals, South32 and fellow Anglo Coal SA sister collieries) within a radius of 15-20km. Also, the local geography played a significant role on Zibulo by not building houses for its workers and instead opting for housing allowances. Zibulo is surrounded by a number of small towns within a radius of 30 km that include Ogies, Leandra, Kriel and further Witbank, Middleburg, Pretoria, Johannesburg and Springs. Thus, the uneven development within the Witbank coal fields assists Zibulo in deepening the same logic by not building houses for its workers in Ogies. However, another explanation is that the mining operation is surrounded by farmlands whose underground is physical space is characterised by a dense capillary of mining sections from South32, Kriel, Zibulo and Exxaro. As shown earlier, Ogies is dominated by farmland and most farmers hold onto the land dearly for speculative purposes (have untapped coal deposits). In addition to the above, the mine constructed the one of the longest overland conveyor belts (15.9km long) that takes coal from underground (incline conveyor) to surface into a silo (crushed and screened) onto an acceleration and overland conveyors through to Phola coal processing plant. Processed coal from Phola washing plant is loaded into rail goods wagons and freighted off to Richards Bay terminal for export. This demonstrates the *sanitisation of absolute spaces* through deprivation human settlements close to the mining operations and also *time-space compression of relative space* (reduction of time spent to freight transport coal to Phola coal washing plant by the conveyor belt and freighted by rail to Richards Bay) hence ensuring profitable production.

Contrastingly, in Postmasburg, Kolomela mine created new economic and social landscapes that completely transformed the town through new modern housing for its workforce (in Boichoko, Postdene and Airfield), upgraded infrastructure (transport and communication network) and engaged in Public Private Partnerships (PPC) with Tsantsabane local municipality. Furthermore, Kolomela mine indirectly attracted other landscapes like shopping malls, manufacturing and equipment servicing industries and increased circulating capital on top of old spatial fix with its own problems. Through enabling *time-space compression of relative space* through transport and communication infrastructure, they ensured that the mine is easily accessible. They expanded and upgraded main roads i.e. R325, R385, R383 and R325 for trucks that deliver good and vehicles that fetch workers to and from work to the mine. They also made their presence visible in different communities through community development projects, amongst other things. Furthermore, Kolomela is linked by railway line from the mine to the main line from Sishen that heads straight

to Saldanha Bay (iron ore export shipping port). Kolomela mine also joined forces with other existing mines and established an airport they privately operate to transport specialised personnel from Johannesburg daily during week days. In light of the above, one sees different spatial strategies adopted by the two mines and are to a larger extent informed by geographic variations. What is the impact of such spatial vision of these two mines in the community and workplace?

In Postmasburg, the houses built by Kolomela mine are in line with the requirements of the Mining Charter i.e. to promote housing ownership among mineworkers. The idea was to build houses that bring dignity and a place the inhabitants would call home because workers are embedded in place (Herod, 2012; Lier et al., 2018). This depicts *social inclusion of relational space* for the workers by capital. However, as shown in Chapter 7, relationally, these houses had unintended consequences because local community members saw the housing units as spaces of exclusion while the inhabitants saw them as conduits and places, they could not call home. For the mineworkers, the houses as absolute space does not ‘represent’ (relational space) a ‘place’ they can call home. That place they want to call home lacks an identity they can relate to (Herod, 2012; Agnew, 1987) and hence some think they are just guards looking after someone’s property. Therefore, the housing regime is a paradox in that it has simultaneously resulted in *social inclusion of relational space* and at the same time *social exclusion of relational space* due to absence of title deeds or permanent ownership of the housing units by the mineworkers. In response, mineworkers deploy acts of resistance through refusal to pay utility bills (water and electricity) and general maintenance of the housing units. The spatial vision of the mine of creating a middle-class miner which comes with the responsibility of paying for services like utility bills seems to backfire. Capital’s project of ‘spatial engineering for social engineering’ (Herod, 2012) has unintended consequences. This brings into the fore the question of ownership tenure where capital finds itself in a predicament of either to give away houses and build more in an economic and housing market environment that is unpredictable. It can be observed the conflict between labour and Kolomela mine on the housing units and non-payment of utility bills impacts negatively on Tsantsabane municipality’s revenue base and its ability to execute municipal functions. The unintended consequences express themselves on the municipality’s inability to handle the challenges brought about by the mining boom in terms of provision of infrastructure and maintenance thereof.

In additions, some residents of Postmasburg view this housing *regime sanitised absolute spaces* (Boichoko, Postdene and Airfield) as ‘sanitised spaces’ because they do not promote integration. The absence of typical township informal structures like spaza shops, shacks and other forms renders them not to identify with the landscape. There is a sentiment that the three suburbs have been cleansed of undesirables like vending stalls, spaza shops, informal structures among other things and ‘local’ do not relate with the mineworkers. Consequently, *sanitisation of absolute space* as part of the mines socio-spatial engineering has culminated in *social exclusion of relational space*. Subsequently, the spatial vision of the mine has backfired as local community interpellate identity politics of ‘us and them’ to include and exclude residents and the same time challenging capital. As a result, conflict between the spatial vision of the mine and that of social actors i.e. mineworkers and local residents collide and manifest themselves in different ways. In this instance, the sanitised workplace order (managed to contain industrial relations in the workplace) through sanitised residential space has paradoxically created challenges towards community relations. Mining operations in the democratic South Africa find themselves in a conundrum in terms of community relations (Mnwana, 2015).

Comparatively, Zibulo’s non-provision of transport and housing can be explained by geographical variations hence the need for a different strategy. This shows the limitations of the *sanitised residential space as an analytical tool* as deployed in the case of Postmasburg. Nonetheless, the inapplicability of the concept demonstrates the impact that geographical variations have on how space is reconfigured by capital and labour. As for Zibulo, absence of housing and transport means, may signify less problems and contradictions as those experienced by Kolomela. In turn, mineworkers at Zibulo see travel and housing arrangements as an opportunity and exploit the allowances by residing further from the mine and commuting to and from work. This enables them to make extra income as transport allowance is calculated by distance from the mine. With housing allowances, Zibulo mineworkers are able to exercise agency and reside in spaces they prefer as opposed to being fixed on company property or decide on how to use the allowance according to their social and biological needs. In this instance, Zibulo employees’ exhibit individual agency through deployment of everyday acts of resilience as cited above with success (Katz, 2004; Kiil and Knutsen, 2016).

To highlight the finding of incapacitated and stressed local municipalities, as shown in the two cases under study Kolomela and Zibulo have taken different paths on how they interact with their respective local municipalities. As shown in Chapters 5 and 6, both mines brought capital, labour machinery and equipment and created new landscapes that allowed production, profits and accumulation to take place. However, the space they operate under is within the jurisdiction local municipalities experiencing their own different struggles (PARI, 2017; Tandwa, 2018; see also Madumo, 2015; Mkentane, 2013; Sithole and Mathonsi, 2015). The level of involvement by Kolomela mine is informed by the fact that the economic landscape is hosted in the town where the local municipality sits. Whereas, Zibulo is located on the farms just outside Ogies, a satellite town under and 30km away from Emalahleni local municipality. It seems in my view proximity and spatial strategy each of the two mines adopt informs their level of involvement which have different consequences. Kolomela mine's deep involvement with the town (institutional capacity support; infrastructure construction and upgrading, donations etc.) make it more visible in a society that has high expectations and want more. It sets the mine toward collusion course as depicted by the attacks on mine's houses and its labour force; protests against the mine in terms of perception of hiring non-locals; attacks on mine property and labour force and general blame of rise in cost of living, pressure on resources and increase in social ills. All these intersect with Tsantsabane municipality that is semi-dysfunctional due to numerous reasons alluded to in thesis. This spatial engineering for social engineering results in these contradictions and challenges to Kolomela mine hence a reality check on its envisaged new social order.

Comparatively, Zibulo follows a different pathway as its social engineering vision if of minimal involvement in terms of the landscapes (economic and social) it creates as opposed to Kolomela. At the time of data collection, coupled with housing and transport allowance, the strategy was working. However, municipal officials from the satellite office suggested that the mine and other mines and thermal power producers could still do more as their presence within the Ogies jurisdiction has directly led to population increase and pressure on existing and ageing infrastructure. Zibulo reinforces the pre-existing logic of uneven development in terms of social infrastructure but rather let capital flow to nearby Witbank town in Emalahleni local municipality. In turn, it simply reinforces apartheid's spatial engineering. Commercial centres and commodity flows are linked to Witbank, Pretoria and Johannesburg and Ogies is a place of extraction, processing and transportation of coal. With Emalahleni local municipality bedevilled by similar

challenges of incapacity, poor service delivery and financial management, resources hardly trickle down to Ogies. In light of the above as shown in previous chapters, the spatial vision and level of geographic restructuring the Kolomela and Zibulo have undertaken have resulted in the creation of sanitised residential space that have been created under different conditions with varying contradictory outcomes. The *sanitised residential space* signifies a shift from the exception and an attempt to create a different seemingly integrated housing regime. The houses the mine built for its employees are of a higher standard in comparison to how other mining companies are opting for living out allowance or simply build low cost sub-standard match box houses.

In the workplace as shown in Chapters 7 and 8, I have shown strategies adopted by Kolomela and Zibulo in their attempts to create a new workplace order delinked from the old apartheid workplace. Both mines have instituted spatial organization in their respective operations giving rise to a *sanitised workplace order*. The *sanitised workplace order* which is comprised of the following tenets, mechanical and technologies of workplace control and collaboration, new labour recruitment strategies (young, educated and diverse workforce), inclusive operating models, corporate social development including the construction and financing of living and travel arrangements. *Sanitised residential space* is an outcome of *sanitised workplace order's* social relations regime in communities the mine (Kolomela) operates. Furthermore, new policies and regulations in terms of workplace conduct, sexual harassment policy and other things seek to avoid and eliminate the pitfalls of apartheid workplace regime has resulted in some degree of compliance by mineworkers. I have shown how relations have generally improved between supervisors and shop-floor; amongst workers themselves, mine management and workers, trade unions and management and trade unions and their respective membership. The policies, procedures and rules that have been put in place seem to be serving at least in the work space. In terms of operating models, introduction of KOPEX and CMOS has enabled capital to manufacture consent of mineworkers, trade unions and middle-management. With KOPEX, Kolomela has created work regime that enables labour right to the operator to participate and make decisions as shown through KOPEX review while as with CMOS, every level of management participates in the decision making and feedback process except for first-line managers and their subordinates who act as implementers of set plans. Thus, two operating models have been implemented differently but with similar results i.e. consent of trade unions and labour and increased productivity.

The two mines having been constructed as mechanized mines, use new operating models to introduce new technologies (modernised machines and trucks; fatigue sensors and cameras). The *sanitised workplace order* has young and educated workforce that is compatible with technology and machines and can read and write. At one level, this is a significant improvement in the South African context where mining has been seen as labour intensive and characterised by unskilled to semi-skilled workforce. These new mines therefore signify a shift from the past as they have a workforce that possesses basic education or more hence it can read and write which enhances communication. Enhanced communication entails reading and understanding instructions in terms of work procedure, following safety standards and operation of machinery and trucks. This spatial restructuring in the workforce shows how both mines representing capital depicts hegemonic organization of work (Burawoy, 1985) through technological innovation, global operating models that improve production and the labour force gets rewarded (increased salaries, benefits and production and safety bonuses). In other words, *sanitised space* through *sanitised workplace order* enables some needs and demands of labour to be met while at the same time manufacture consent and make labour into capital's interests and increase productivity (Burawoy, 1985; Hastings and MacKinnon, 2017).

Having considered the above, the *sanitised workplace order* practices and work organization does not go unchallenged by labour. Mineworkers and trade unions engage in different strategies and tactics through acts of resistance and pioneer innovative ways to meet their own spatial visions. As shown in Chapters 6, 7 and 8, mineworkers deploy individual agency through acts of resistance in different ways that include; drive trucks at a very slow speed and slowing production for grievance or disgruntlement to be heard; manipulate sick leave and sick notes when absent from work; change coal cutting sequence from the one set by middle-management; use mobile space (drilling machines) to pursue personal goals i.e. studying and abuse the fatigue management system just to catch a rest even when not tired among other things. Hastings and MacKinnon (2017: 106) cogently state that "...social, technical and organisational arrangements of the workplace play an important role in shaping the routine operation and expression of such agency." Trade unions on the other hand bargain and consent with capital when it improves their membership's working conditions and remuneration. These different individual and collective acts of resistance depict agency of labour notwithstanding increased monitoring and surveillance in the workplace.

In light of the above, this study through lenses of labour geography shows that the two new mines in South Africa as sanitised spaces through this comparative study have devised different spatial strategies to organise work and social relations with their immediate communities. The outcome has brought different contradictions as the mines seek to move away from the pitfalls of the apartheid workplace regime and apartheid spatial engineering for social engineering. I have comparatively shown how two mines grapple with spatial contradictions through the concepts of *sanitised workplace order* and *sanitised residential space* across two different geographical locations. Thus, the analysis of the workplace through the lenses of sanitised workplace order shows something different being done as the mining industry reconfigure the mining landscape as the 4th industrial revolutions. In the same vein using the sanitised space, I have shown how Kolomela and Zibulo mines following different strategies in terms of involvement have established different social orders fraught with contradictions. I have argued that sanitised space (workplace and residential) constitute spatial orders of new mines in South Africa.

9.3. Implication of the study to scholarship community

9.3.1. Labour geography

This study contributes to labour geography debates as evidenced by how I have closely examined new mines efforts to establish new workplace orders and social relations with mining communities through configuration and reconfiguration of space in particular ways. This study makes (1) empirical contributions on mining and labour studies bringing experiences from the global-south into mainstream labour geography debates that have been dominated by the Americas and Europe. Also, (2) this study makes conceptual contribution the field of labour geography through concepts of *sanitised space*, *sanitised workplace order* and *sanitised residential spaces*. Through this comparative study of Kolomela and Zibulo, the study shows that these mines are characterised by *sanitised workplace order*, while their socio-spatial embeddedness has produced *sanitised residential spaces*. *Sanitised workplace order* and *sanitised residential space* depict cases of exception in comparison to the past workplaces that were underpinned by what Von Holdt (2003) terms ‘apartheid workplace regime’ among other conceptual lenses.

The notion of *sanitised workplace order* provides lenses that can be used to explore workings of capital and labour in the information age and how industrial relations are negotiated and renegotiated in the workplace. In the same vein, *sanitised residential space* demonstrates capital’s

attempt to construct a seemingly integrated class of mineworkers in modern and spacious housing units but without title deeds and having to pay for utility bills, rental costs and fringe benefit tax. The outcome is characterised by contradictions and contestations by the mineworkers and local residents who challenge these sanitised spaces in multiple ways. The different strategies adopted by Kolomela and Zibulo mines demonstrated geographical variation in terms of the inapplicability of *sanitised residential spaces* at Zibulo (absence of a housing regime). In addition, the study further adds more insights on how new geographies in the workplace (mechanisation and technology) prompt workers to engage in different types of agency and strategies that are geographic specific. Lastly, the study also shows how Harvey's abstract concepts of absolute, relative and relational space can be operationalised as utilised in the study. By combining empirical and conceptual insights *sanitisation of absolute space*, *time-space compression of relative space* and *social inclusion/exclusion of relational space* are major innovations introduced in this study. They are useful interventions to be understand how a spatial fix can be 'Marxified' as both capital and labour make their own spatial fixes.

9.3.2. Labour Studies and Industrial Relations

Furthermore, the study contributes towards labour studies scholarship as these findings add more knowledge to existing literature in terms of workplace relations, interaction of trade unions, labour and technology. South Africa is a society that is still evolving after the official end of apartheid in 1994. In terms of the workplace, change has been taking place in different forms and direction as various stakeholders attempt to institutionalise and transform workplace relations. This study contributes by showing new forms of spatial control that have been adopted by the two mines under study and how labour is responding to such. In addition, findings from the study demonstrate that workplace restructuring can be undertaken in a way that may not result in job losses if all stakeholders are involved with trust and honesty. The same applies to the role of technology in the workplace in the wake of the 4th industrial revolution. The findings in some ways makes a clarion call to actors like trade unions and other stakeholders to adopt a proactive rather than a reactive approach (Hlatshwayo, 2013) to engage and understand technological innovation, how it can be embraced and enhance work without threatening jobs. Also, the study makes a contribution toward scholarship on identity politics in terms of how different identity categories are still in existence and perpetuated in different society in this case Postmasburg in the Northern Cape. The study

shows how space in its various conceptual forms can be innovatively used alongside identity concepts to comprehend politics of inclusion and exclusion.

9.3.3. Contribution to methodology

In this study I have utilised different methodological approaches and combined them together with the Extended Case Method. I have made use of survey interviews, worked and observed mineworkers on surface, in the mining open pits (Kolomela) and underground (Zibulo) to understand the interaction between labour and capital. It was not an easy process, but it had to be done. The mining world is dangerous but at the same time fascinating and I could have become distracted and lost focus but that did not happen. Rather, the methodological process enhanced my understanding of how capital and labour operate over space and interact with each other. This study despite its complexities, makes a contribution in terms of how future studies of this nature especially comparative can be undertaken and use findings to generate or contribute toward building or testing existing theory and concepts.

9.4. Limitations of the study

Findings from this study are derived from a comparative analysis of two new mines and thus cannot be generalised across the mining industry in South Africa. Rather, a closer examination and comparison of two cases provides localised understanding of complex interplay between capital and labour. The fact that the two mines are more than 60% percent owned by one company, Anglo American and excludes old mines i.e. (deep gold mines, platinum) and new platinum and iron ore mines. This can be a draw back because the two cases are drawn from the same stable with similar, culture, values among other things and dilute the comparative nature of the study. However, despite this supposed drawback, I find the comparison from these two cases from the same company advantageous because they are new, located in different geographic locations and as the study has shown deploy different spatial strategies in doing business.

This comparative study does not dwell on income (wages, salaries) across levels, gender and race. I could not address these given the fact gate keepers were of the view that income of mineworkers is personal and private. Thus, the Human Resources Departments from both mines were not willing to provide such information while in the survey questionnaire, the question did not yield enough response rate. Provision of such data would have added more value and insight on what is

happening in the industry and enriched findings of the study. However, it could be a possible aspect for further studies.

In some instances, there is unequal representation of voices especially from qualitative interviews in terms of gender, race, and ethnicity among other categories one could think of due to time constraints. Time constraints in terms the period I spent at each mining operation and possible interview participants who work on hectic shift systems. Nonetheless, it is my view that there are enough and adequate voices to supplement the positions I have argued for and put forth.

Another shortcoming is the absence of the Labour Process Theory, that's has traditionally been used in the discipline of Sociology, Labour Studies and Industrial Relations to understand workplace relations and managerial monitoring and control of labour and the production process. LPT is omitted from the study because the candidate is of the view that Labour Geography was sufficient to interrogate the workplace and the broader society. However, inclusion of LPT would have added significant strength on the arguments raised in this thesis.

9.5. Implications on mining industry and policy

Findings from this study have a bearing on the Mining Charter and the industry. Firstly, given the history of the mining industry in South Africa, findings from these two mines show significant shift from old practices in the workplace as exemplified by the apartheid workplace regime (Von Holdt, 2005). Workplace relations are improving; positions are opening up in terms of diversity though a lot still needs to be done. Also, more women are joining the mining industry and executing work previously dominated by men and even doing it better and efficiently. However, more women are still needed to join the industry and occupy positions of power and influence. Furthermore, policies and procedures are in place I hope that they will be executed effectively and efficiently in a fairly manner with specific reference to sexual harassment, racial and gender discrimination.

Furthermore, significant strides have been made in terms of improving health and safety in the workplace and the innovation and interventions that have been adopted by Kolomela and Zibulo can be explored as best practices. This specifically applies to Kolomela mine, in terms of introduction of fatigue management and related technological innovations to reduce and eliminate workplace dangers and hazards. The question of housing still remains a thorny and contested issue

within the confines of the Mining Charter. Questions arise on promotion of housing ownership for mineworkers, should mines build houses or provide housing allowances? Kolomela and Zibulo mines adopted the two options and had contradictory results. Is building houses that are owned by mineworkers who are still migrant workers a viable option given the fact that minerals will be exhausted at some point (white elephant communities) or providing housing allowance which one is not sure if it will be utilised for that purpose? What kind of pressure does mine related activities exert on local municipality infrastructure and consequent capacity to deal with such? All these intersect with communities that are underdeveloped and have high expectations as was depicted in the case of Postmasburg. These are some issues that need to be pondered on as mining companies interact with host communities as they execute their spatial visions.

In terms of future research, there is need for close examination of coal mines in South Africa in terms of workplace relations given the fact that mechanization process started in the early 1920's. This is important because it will enable a comparative analysis between old and new coal mines in the context of mechanisation, how this affects or shapes workplace relations and identify trends among other things.

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Appendix

List of Interview Participants

Kolomela Mine& Postmasburg residents (interviews carried out between 01/09/2016-31/11/2016)

Candice⁶⁶ drill operator (FC)

Chief Security officer Kolomela mine (MB⁶⁷)

Enterprises development, Kolomela Hub manager (FB)

Georgina, drill operator (FC)

General Manager (MW)

Housing Officer (MW)

Lab analyst (MB)

National Union of Mineworkers Kolomela branch full-time shop steward (BM)

⁶⁶ Pseudonyms except where occupational position is stated.

⁶⁷ **B** for black, **C** for coloured, **W** for white, **M** for male and **F** for female.

National Union of Mineworkers official 1(MB)

National Union of Mineworkers official 2 (MB)

Pastor/Manager of a Youth NGO (MC)

Plant official (MB)

Production controller (MB)

Public liaison officer (MB)

Rosemary, trade union official (FW)

SANCA Manager Postmasburg

Tsantsabane Black Business Chamber executive member (MC)

Thabo, operator (MB)

Themba, plant (MB)

Trade Union official (MB)

Ward councillor (MC)

Zibulo and Ogies (interviews undertaken between 20/10/2015-31/01/2017)

Bruce, electrician (MB)

Engineering official (MB)

Emalahleni municipal official (MB)

Eugene roof bolt operator (MB)

General Manager (MW)

Katlego, miner (MB)

Lerato, shift boss (FB)

Mary official (FB)

Ogies Unit manager (MB)

Pastor Phola youth advisor (MB)

Phola resident and miner (MB)

Safety superintendent (MW)

Zibulo community engagement officer (FB)

Zibulo mine official (FB)