

**Extending health and safety protection to
informal workers: an analysis of small scale
mining in KwaZulu-Natal**

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Abstract

This study explores the potential extension of occupational health and safety to informal small scale miners in South Africa. It was motivated by an understanding of the integral but much neglected relationship between the quality of work and the goals of poverty reduction and economic development. The study recognises that poor working conditions can reduce productivity and that work-related injury or illness is an unaffordable risk for those working without access to adequate social protection. Further, the protection of labour standards, including work health and safety, is an established basic right in those countries where relevant ILO Conventions have been ratified.

Conventional occupational health and safety (OHS) regulation operates through formal employment structures and therefore offers limited or no protection to informal workers. In a country where increasing policy attention is being paid at national and local level to the employment and economic growth potential of the informal economy, this study practically explores within one sector – mining – how the institutional positions of both conventional and identified non-conventional OHS stakeholders work to constrain, or provide opportunities for, the extension of health and safety protection to those working informally.

The focus on one kaolin and one clay/coal informal small scale mine site within KwaZulu-Natal and the use of in-depth interviews with workers and a range of identified stakeholders enabled a structured qualitative investigation into the health and safety challenges faced by informal miners; the nature of the support provided to small scale mining by the Department of Minerals and Energy (DME); and the institutional processes acting through national, provincial and local structures that do or could influence workers' access to OHS.

The threats presented by each mine to worker and public, as well as environmental health and safety were found to be numerous and severe. There was also evidence of a negative impact of poor working conditions on both the health and economic security of the

workers. Despite this, the study identified a vacuum of accountability for the labour protection of informal miners.

Conventional mining OHS mechanisms are vertically driven, resource intensive and technocratic. They are both inappropriate for and inflexible towards meeting the challenges presented by informal work. In a minority of cases interdependent links between the responsibilities of non-conventional OHS stakeholders and work health and safety are understood, but the lack of a worker focus, the institutional boundaries within which people work, their limited OHS knowledge, and the major financial and human resource constraints they face, appear to present significant barriers to any actual OHS intervention. Through the research process it became clear that the management and nature of the DME's small scale mining support strategy itself present fundamental barriers to the extension of OHS. The strategy is a product of a narrow conceptualisation of what is needed to achieve formalisation. This, and the lack of genuine worker representation and accountability within it, means that not only does the strategy fail to attend to OHS and a variety of other worker needs, but that the DME continues unchallenged in its neglect of such issues.

With an understanding of the real constraints faced by both workers and the range of identified OHS stakeholders, and in view of the future plans to overhaul the existing national OHS framework in South Africa, the study concludes by outlining some practical opportunities and recommendations that could help to break down existing barriers to the OHS protection of informal workers. Conventional OHS mechanisms could be reoriented to take advantage of cheaper, simpler and more appropriate worker-led approaches which could potentially achieve substantial improvements for large numbers of informal workers. Realistic opportunities also exist to more firmly secure the participation of promising non-conventional OHS stakeholders including, in this case, formal mining companies and local government. Finally, there are ways to bridge existing deep divides between social and economic institutional responsibilities that currently serve to obscure potential resource sharing and multiplier impact opportunities of working more collaboratively to improve OHS for the benefit of informal workers.

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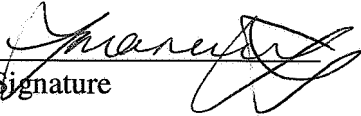
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Declaration of Originality

This dissertation represents original work by the author and has not been submitted in any other form to another university. Where use has been made of the work of others it has been duly acknowledged and referenced in the text.


Signature

List of Acronyms

CoG	Council for Geosciences
CSDH	Commission on Social Determinants of Health
DME	Department of Minerals and Energy
DoH	Department of Health
DoL	Department of Labour
DFID	Department for International Development
ETI	Ethical Trading Initiative
GDP	Gross Domestic Product
IDC	Industrial Development Corporation
ILO	International Labour Organisation
KZN	KwaZulu-Natal
LED	Local Economic Development
MHSA	Mine Health and Safety Act
MEPC	Minerals and Energy Policy Centre
MQA	Mine Qualifications Authority
NSC	National Steering Committee
OHS	Occupational Health and Safety
OHSA	Occupational Health and Safety Act
PPE	Personal Protective Equipment
PSS	People's Security Survey
SADC	Southern African Development Community
SASSMC	South African Small Scale Mining Chamber
SAWIMA	South African Women in Mining Association
SEWA	Self-Employed Women's Association
SMME	Small, Medium and Micro Enterprises
SSM	Small scale mining
UN	United Nations
WHO	World Health Organisation
WIEGO	Women in Informal Employment Globalizing and Organizing

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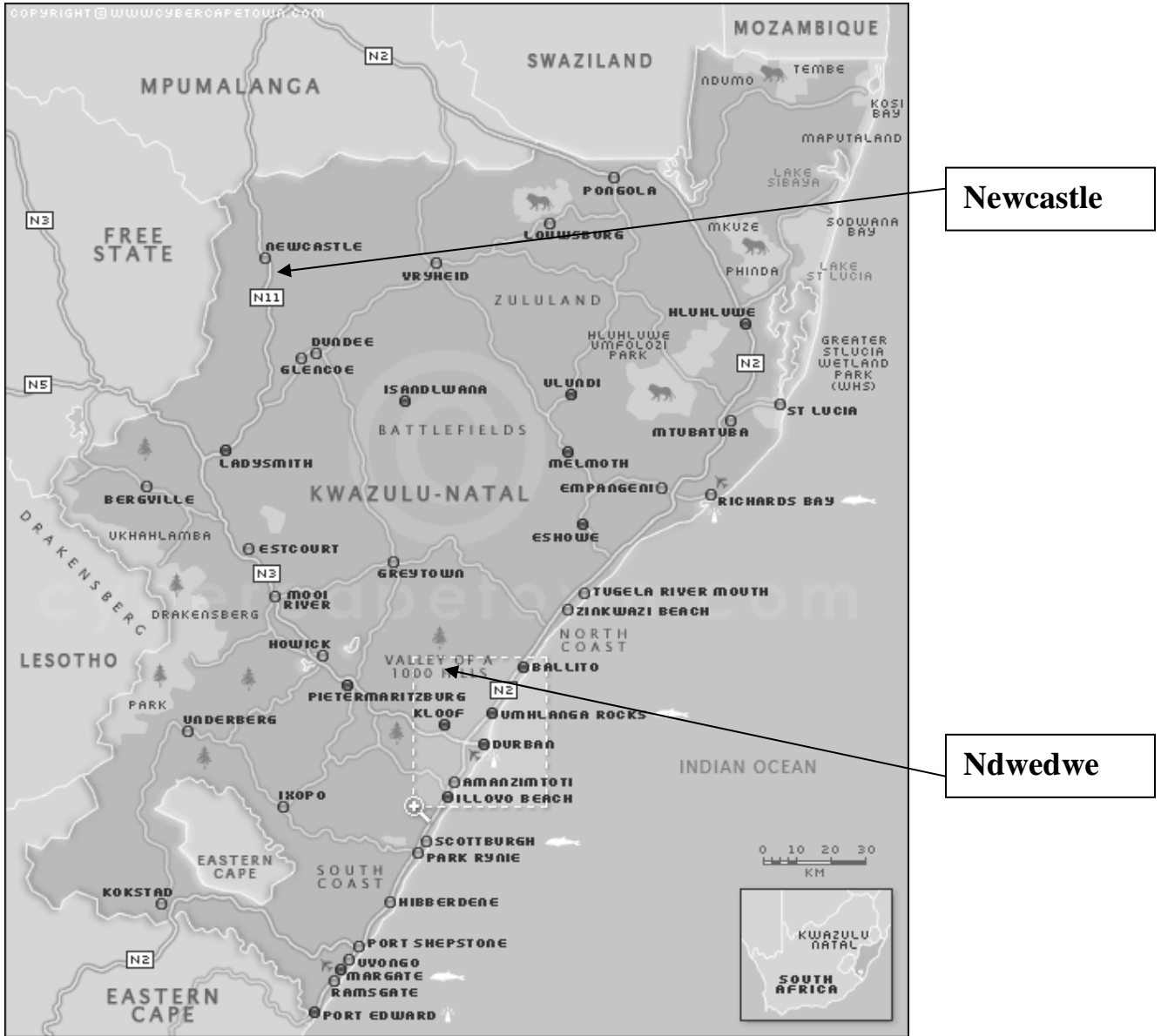
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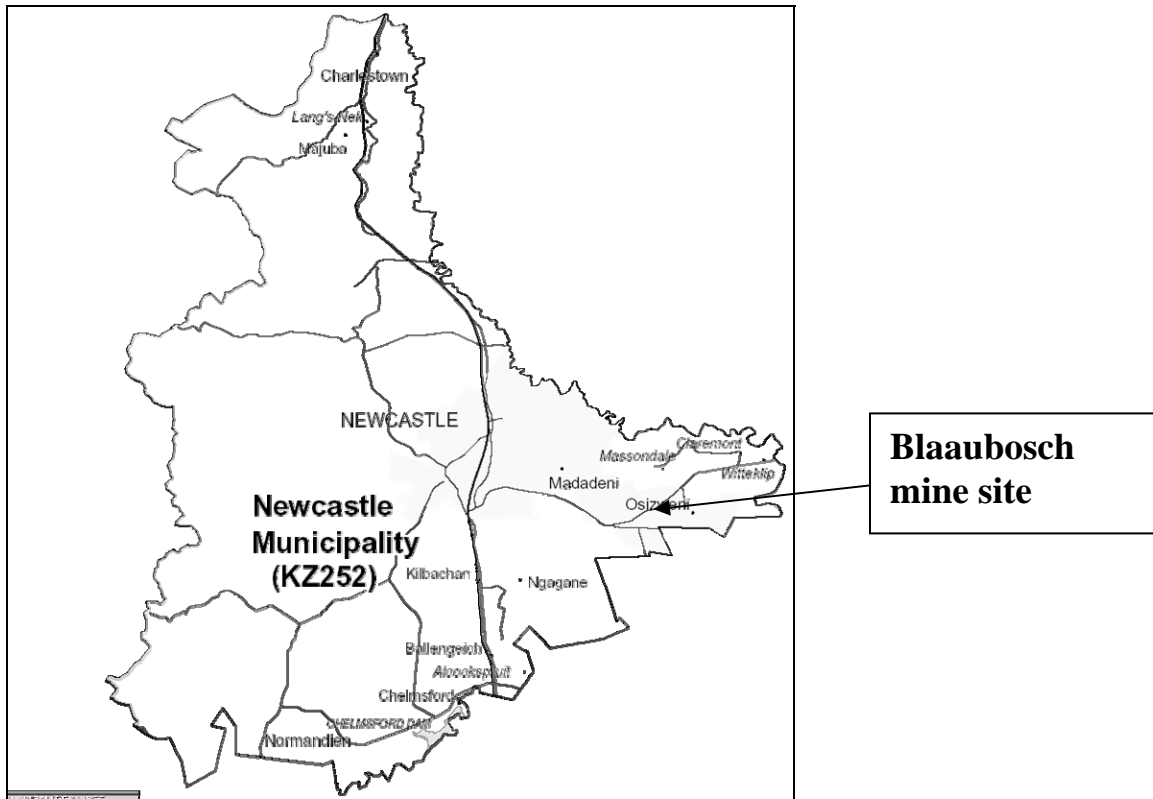
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Maps of the study areas

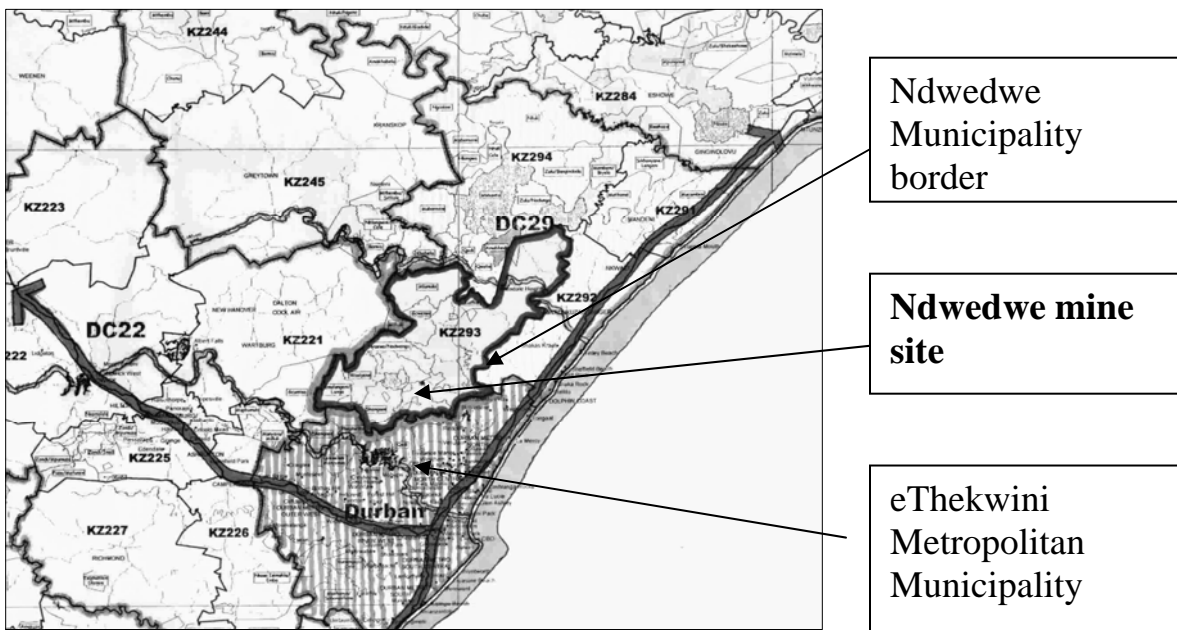
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CHAPTER 1

INTRODUCTION

There have been extensive changes in the structure of labour markets world wide. The decline of jobs with secure and lasting contracts and work-related social benefits, as well as the corresponding rise in precarious and unprotected, or informal work, means that for many, employment may not only fail to secure a successful pathway out of poverty but will also further contribute to existing vulnerabilities (Chen et al 2004). While there have been some recent optimistic signs that some major development agencies and international financial institutions such as the World Bank are beginning to consider the important role of social protection for informal workers in achieving poverty reduction (Chen et al 2004), the impacts of, and strategies to protect against, a major potential source of informal worker vulnerability in the form of poor labour standards, and specifically the risks presented by work related injury and illness, have been largely under-explored in mainstream poverty and development debates.

Despite an acknowledgement of the costs to workers of occupational injury and illness within the majority of the world's social security systems (SSA 1991 in Gal 2004), weaknesses exist within the mainstream conceptualisation of occupational health and safety (OHS), and its regulatory mechanisms, that limit the protection of health and safety standards world wide. More fundamentally, conventional occupational health and safety regulation continues to operate through formal employment structures and therefore offers limited or no protection to informal workers. Such conceptual and institutional constraints raise important questions about the reality of extending OHS protection to informal workers. Can conventional OHS agencies re-orientate existing systems to the changed world of work? Can OHS be extended to workers who do not have formal employers? Who should take responsibility? Do non-conventional OHS stakeholders such as local governments perceive the interdependence of OHS with their own duties and responsibilities? Under what conditions is OHS protection achievable?

Calls from the International Labour Organisation (ILO) to extend social and labour protection, including OHS, to informal workers seem to be of little use unless the problem is broken down and analysed in the specific contexts where people work. Furthermore, the ILO SafeWork Programme's preoccupation with appropriate design and content of OHS interventions for informal workers appears to distract from important questions about who can and should take responsibility for such protection. On the other hand, calls from within the OHS discipline to integrate OHS into existing primary health care functions (e.g. Barten et al 1996; Loewenson 1999) have not been matched with research to assess this possibility.

This study attempts to bridge some of these gaps by focussing on the potential extension of conventional OHS mechanisms to informal workers, as well as the opportunities for and constraints to an OHS role for non-conventional stakeholders, within one part of one sector in South Africa, that of small scale mining.

The growing importance and recognition of the informal economy in South Africa since the democratic transition in 1994, as well as the many and continuing extensive institutional and policy changes designed to build and support a more inclusive economy and society, together provide an interesting and important context to investigate the potential emergence of new spaces to improve and protect the labour standards of those working informally. Small scale mining in South Africa is a useful focus for the study due to the combination of informal employment, hazardous working conditions, low compliance with labour regulations as well as existing support programmes for the development of the sector.

Contemporary labour standards debates unfortunately provide little guidance for the approach taken in this study to identify new avenues for labour protection via new as well as conventional OHS stakeholders. While a range of new institutions in the form of national and international NGOs and alliances are involved in such debates, their role has primarily been to lobby for improved accountability of those conventionally responsible for protecting workers, namely employers. With the exception of the common and

problematic bias of attention to those working only in global value chains, the importance of this kind of work to the millions of informal wage or sub-contracted workers worldwide is not questioned here. However, the debates and strategies remain largely irrelevant to the growing numbers of the genuinely self-employed working in shorter supply chains oriented towards local markets (such as is the case for much informal small scale mining (Mutemiri and Petersen 2002)). Yet the need to protect such workers from risks and vulnerabilities that may threaten livelihoods and lead to poverty is just as important.

In contrast, debates and theories on social security and more recently social protection have long provided a space for exploring the potential role of a variety of institutions in the delivery of such support. In the last five years this space has been innovatively analysed to find the ways in which social protection can be extended to informal workers through different institutions (Barrientos and Barrientos 2002: 131). The conceptual frameworks developed in such work provide some broad guidance for the approach taken in this study to identify potential OHS stakeholders within a sector framework and are therefore discussed here in more detail.

Unni and Rani (2003) provide a broad overview of informal workers' access to social protection in India by assessing institutional frameworks and opportunities at the level of the state, market and civil society. While the small number of value-chain and social protection research studies (e.g. Barrientos and Barrientos 2003 and Doane et al 2003) also map out institutions in the same domains, the sector framework in which they do so seems to better respond to the need for an approach 'grounded in the reality of workers of different labour statuses', identified by Lund (2002:189), and can potentially benefit from a focus on opportunities and constraints presented by sector institutions.

While the usefulness of a sector approach is clear it is important to note that the context and nature of work heavily influences the actual components of the analysis framework. As mentioned, those workers positioned in global value chains for example, may stand to benefit from institutions that develop codes of conduct or from civil society lobby groups

based in the North. For informal self-employed small scale miners working in shorter local supply chains, sector and local institutions that influence the immediate regulatory environment are potentially most important and are therefore focussed on here.

Further, while previous studies have considered social protection more broadly, this study focuses on only one element, that of OHS. This naturally leads to the identification of particular institutions that must and could be considered in the framework. As will be further discussed, the literature suggests that such institutions include those involved in existing OHS mechanisms for the sector and those whose activities and responsibilities impact on or are effected by OHS standards, such as health departments and local government. The identification of relevant institutions and stakeholders is further assisted by assessing existing strategies to assist informal workers in the mining sector

This research is guided by an understanding that occupational injury and illness is an unaffordable risk, particularly for those working without protection in the informal economy. It recognises work health and safety as a right as well as a potential contributor to improved productivity, and that OHS is an ongoing need that cannot therefore be addressed in the form of a short-term project style intervention. It also takes a basic stance against recent trends in social protection that shift the burden of risk, and in this case risk prevention, to the individual.

The following chapter provides some background to the development problem in terms of the growth of informal work and its relationship to poverty and development. It goes on to explore the development and OHS literature on the previously neglected relationship between work injury and illness and poverty, as well as the scale and nature of the OHS challenges faced by informal workers. Chapter 3 focuses on the institutional and regulatory context in which informal workers, and particularly small scale miners operate in South Africa. The chapter explores available literature on the existing and potential role of both conventional and non-conventional OHS stakeholders in extending OHS protection to informal workers before leading into the methods of the study in Chapter 4.

Chapter 5 presents and discusses the findings on the range and severity of work health and safety problems associated with informal small scale mining, and the nature and effectiveness of any OHS interventions to date. The opportunities for and constraints to extending OHS to informal small scale miners are explored in chapter 6 in relation to the existing and potential role of both conventional and non-conventional OHS stakeholders. Given the prevailing view amongst the participants that formalisation was a necessary precondition to the extension of OHS, chapter 7 provides a necessary investigation into the government's small scale mining formalisation strategy more generally. In doing so it identifies a number of deficiencies that can explain both the limited progress to date and why OHS has not been identified or tackled as a priority concern.

CHAPTER 2

INFORMAL WORK, POVERTY AND DEVELOPMENT

2.1 The informal economy

The term informal economy (often used interchangeably with the term informal sector) has been used to describe a myriad of work and economic activity that more often than not falls outside official institutional regulation and is ‘beyond formal systems of labour and social protection’ (ILO in Liimatainen 2002: 2). Livelihoods and forms of employment vary widely within the informal economy and informal work exists in the vast majority of sectors. The most visible informal workers include those working in public places such as street vendors or waste pickers; less visible are those such as casual day labourers or industrial wage or subcontracted home workers, and more generally those working informally in remote and rural areas.

The continuing expansion and growth of the informal economy, estimated to comprise ‘one half to three quarters of non-agricultural employment in developing countries’ (Chen 2002: 8), as well as an ever increasing amount of employment in developed countries (e.g. Cranford and Vosko 2005), has not only been a response to unemployment in developing countries with little or no insurance systems (Bourguignon 2005) but, according to many theorists, has been actively driven by three decades of increasing global competition and capital intensive growth strategies and their associated processes of flexible specialisation, wide-scale retrenchment, deterioration of wage levels and working conditions and the increased bargaining power of employers and contractors over employees and the self-employed. The widespread de-regulation of labour markets to attract foreign investment mean that many of the new jobs generated by globalisation are often flexible, precarious and insecure (Lund and Nicholson 2003: 13).

The description of the term “informal sector”, first used by the ILO in the early 1970s, was not actually significantly different from the ‘traditional sector’ comprised of ‘petty traders, small producers, and a range of casual jobs’ (Chen et al 2001: 1) previously

conceptualised by the original development theorists in the 1950s and 1960s. However, the birth of the new term instigated a rigorous debate surrounding the conceptual and working definitions of the informal sector and over the last 30 years a number of competing theories have evolved to explain its origins and growth, its role in socio-economic development and its relationship to the formal economy. The debate led to a fundamental shift in thinking away from development economics that viewed the sector as a static and unproductive feature of developing countries that in time would simply be absorbed into the dynamic modern and formal economy, and towards the now widely accepted view that the informal economy is itself dynamic, is growing and is unlikely to disappear in the foreseeable future.

The persistence and continued growth of informal work in new places and guises in both developed and developing countries (Chen et al 2005) have largely discredited the perspectives of the three historically dominant schools of thought on the ‘informal sector’ beyond their usefulness as potential explanations for specific elements of the informal economy. The dualist school, popularised by the ILO in the 1970s (Chen et al 2004), is now considered outdated due to its assumption that the informal sector is marginal and disconnected to the formal sector and is likely to regress with the advancement of industrial development and the creation of more modern job opportunities. The structuralist school in contrast, conceives the informal sector as economic units and workers that are inextricably connected to and ultimately exploited by formal modes of production (Castells and Portes 1989). The perspective remains useful in understanding the subordinate relationship of the increasing number of sub-contracted firms and workers to lead firms who sub-contract work to them (Chen et al 2004: 16), but limited in terms of understanding the wider socio-economic and political context responsible for other forms of informal employment.

Finally, the legalist school, popularised and developed by de Soto in the 1980s and 1990s, differs markedly in its perspective that the poor choose to operate informally to avoid the high costs of discriminatory state regulations and bureaucracy and that the informal sector, described as ‘dynamic’, ‘enterprising’ and ‘efficient’, represents a

genuine alternative and non-interventionist path to development (Rokowski 1994: 42). While the legalist school also fails to account for the vastly differing circumstances, relations and contexts faced by informal workers and, like the World Bank, has been widely criticised for romanticising the informal sector (Rakowski 1994: 41), it can still be of use to explain the behaviour of the entrepreneurial class among the informal workforce who seek to avoid the costs of formalisation (Chen et al 2005: 16). Further, Rakowski (1994: 42) rightly credits the school for highlighting the important role of ‘institutions, power and politics’ in the circumstances and experiences of those operating in the informal economy. The latter has been incorporated and embraced in more contemporary approaches.

In more recent years, the Women in Informal Employment Globalizing and Organizing (WIEGO) network, together with the ILO, has ‘contributed to a fundamental shift in the conceptualization of the informal economy’ by defining informal employment as ‘employment without secure contracts, worker benefits, or social protection’ (Chen 2002: 12). This challenge to the ILO legacy of enterprise based definitions has enabled a more comprehensive understanding of the constituents of the informal economy, namely: ‘micro-entrepreneurs who employ others in their informal enterprises; own account workers who do not employ anyone; and paid workers in informal employment relations’ in both formal and informal businesses (Ibid). Such a definition can now incorporate and distinguish between the dynamic entrepreneurs described by De Soto, the wage and disguised wage workers central to the structuralist approach as well as the self-employed survivalists. Recent data compiled and analysed according to this definition (Chen et al 2005) has demonstrated the diversity and inequality both within the informal economy and between the formal and informal economies. Such data supports WIEGO’s conceptual move away from dualist notions to the recognition that workers are positioned at ‘different points of a continuum from formal to informal employment’ (Lund 2002).

While the recognition of the heterogeneity of the informal economy and its origins is not in itself particularly radical, WIEGO’s concept appears to have moved the informal economy debate forward for many researchers and practitioners by focussing on the

experiences, views and needs of different types of informal workers, the different relationships they have with local, national and international institutions that impact on their working lives and, perhaps most importantly, identifying the varied stakeholders within the global economy that can work together to maximise growth opportunities for the working poor. Underlying all of this is the crucial understanding that informal workers are economic actors.

2.2 Informal work and poverty

There is a link, though not a complete overlap, between working in the informal economy and being poor (ILO 2002a). A small number of surveys have been conducted to date that have enabled an empirical investigation and confirmation of this relationship. These include two recent labour force surveys in South Africa and India that collected data on household expenditure and employment, including informal employment (NALEDI 2003 and Sastry 2004 in Chen et al 2004: 32). Both studies found a link between depending on informal employment and being poor at the household level. Another study in Chile found that 39% of male household heads and 36% of female household heads employed as wage and salary workers in the informal sector lived in poor households compared to 18% and 13% of their respective counterparts in the formal sector (Ameudo-Dorantes 2004).

The relationship between informal work and poverty is widely attributed to the fact that informal workers are not covered by labour legislation or social protection and that on average they earn less than those working in the formal economy. A recently published analysis of five national data sets¹ found that hourly earnings in most forms of informal and agricultural employment fall well below earnings for formal, non-agricultural employment (Chen et al 2005: 47). The same data sets also confirm that women who work in the informal economy are more likely than men to be poor for a number of reasons including the fact that women's hourly earnings fall below those of men in identical employment categories, with the notable exception of Egypt, and that there is a high concentration of women in informal domestic work and informal non-agricultural

¹ National data sets used were from Costa Rica, Egypt, El Salvador, Ghana and South Africa.

own-account employment, both of which have significantly lower hourly earnings compared to all other forms of formal and informal work (Chen et al 2005).

The poverty impact for informal workers and their dependents of the lack of access to employment-based social protection, such as paid sick leave or unemployment insurance, the unregulated conditions of work, as well as the numerous hidden costs associated with informality such as the payment of bribes and the competitive disadvantages of being excluded from support policies for registered businesses, is frequently discussed but the severity of which is often little understood. The consequences of the lack of social and labour protection have been explored to a degree within numerous small scale qualitative studies and in many cases are long accepted truths that were used to justify the formation of social security measures and labour standards in the first place.

According to the ILO (2002b) there is also a likely mutually causal relationship between informal work and poverty given that poverty limits real opportunities and choices for decent work by, for instance, reducing investments in human capacities.

The far higher rate of poverty than of unemployment in developing countries is a clear indication that most of the poor are working and yet work, for many, does not constitute a pathway out of poverty (Chen et al 2004: 9). This also suggests that the quality and not just the quantity of employment is a key determinant of the poverty reducing potential of employment, and both employment quality and quantity, according to Chen et al (2004: 9) are 'key determinants of the poverty and equity outcomes of different patterns of economic growth or global integration'.

This latter argument forms the basis of both WIEGO's research and advocacy work and the ILO's Decent Work campaign. While there have been some recent optimistic signs that some of the other major development agencies are beginning to recognise the importance of employment quality, including a recent publication from the UK Department for International Development (2004) entitled 'Labour Standards and Poverty Reduction', to date the topic has received little attention in mainstream poverty

and development debates, in the Poverty Reduction Strategies or, until recently, the Millennium Development Goals² (Rodgers 2005). Neither have mainstream debates considered that the poverty sustained or created by decent work deficits may itself present a barrier to further economic growth.

According to Rodgers (2005), the neglect of the central role decent work plays in development can in part be explained by the continuing dominance of an economic model in which labour is treated essentially as a cost and labour regulation as a barrier to economic growth. This is despite admissions from even within the World Bank itself that there is a clear lack of empirical evidence to support such an assumption (e.g. Bourguignon 2005). In this context Rodgers (2005) argues the need for a better understanding of the two way relationship between social and labour protection and economic development and poverty reduction.

With this in mind the following section explores to a greater depth the available literature regarding the important but particularly neglected relationship between working conditions, and more specifically adequate health and safety, informal work and development.

2.3 Informal work, work injury and illness and poverty

Work injury and illness and resulting incapacity to work are likely to have a greater detrimental impact on unprotected or informal workers than on formal workers. If employment should cease for any length of time due to illness or injury and is unprotected in terms of insurance or compensation, and if additional costs are incurred for necessary health care, the risk of such workers, and their dependents, experiencing downward mobility is likely to be increased. Those least likely to be compensated are those least able to afford the costs of lost income and health care (ILO 2004).

² Efforts are now underway to develop an appropriate indicator related to informal and wage employment to be included in the Millennium Development Goals (Chen et al 2004).

Evidence that the burden of costs associated with occupational injury and illness fall on informal workers themselves and their households was found in the ‘People’s Security Survey’ (PSS) conducted by the ILO³ (2004). Such findings include:

- the majority of workers in Bangladesh, Brazil, Chile, China, India, Indonesia, Moldova, Pakistan, the Philippines, Tanzania and Ukraine, themselves bear the costs of work-related injuries or illness
- workers in Africa are among the least likely to have insurance against accidents or injury at work (in Tanzania 93% of workers said that they would have to pay for treatment themselves but this figure was even higher for those in casual or other irregular labour relations)
- in Gujarat, India, 93% of workers have no insurance against wage-work risks. Where employers do pay the medical costs of work accidents, payment only covers 22% of work injury costs for male workers and only 7% of such costs for women
- 60% of workers in Hungary are entitled to employer-provided medical services for work injuries and illness but more than 20% never actually receive such services

A study of working people in KwaZulu-Natal, South Africa found that ‘in 70% of the cases where self employed respondents took time off due to illness in the previous 12 months, the business was not able to operate’ (Lund and Ardington, 2005: 27). Sixty percent of the self employed said that in the event of a long illness their business would close down.

The inability of many informal workers to bear such costs associated with poor health was found in the PSS surveys in Ghana (ILO 2004) and in ILO supported surveys in the Philippines (Taswell 2001) where despite ill-health or injury, and resulting restricted activity, workers continue to work. The consequences of people continuing to work despite being sick or injured have not been measured in this context but are

³ The PSS was a series of surveys conducted by the ILO between 2000 and 2003 in 15 countries with sample sizes ranging from 750 to 9400 respondents.

straightforward. If workers do not take time off to recover or to seek necessary health care, their illness or condition is likely to deteriorate, possibly causing more long-term productivity declines or more long-term absenteeism in the future. Workers who continue to work while unwell and infectious also increase the risk of occupational illness for other workers with whom they come into contact.

While one can intuitively argue that in the absence of any kind of income insurance, work injury and illness will have a detrimental impact on informal workers and their households, a review of international research on OHS reveals a substantial barrier to measuring the poverty impact due to narrowly defined data collection purposes within the OHS discipline. Current approaches tend to concentrate either on measuring the number of injuries or illnesses, as in the national and ILO reporting systems, or on examining the specific causal relationship between working environment and worker health, as in the methodologies used by OHS practitioners. While models do exist in some developed countries to measure and estimate the aggregate costs of occupational injury and illness to different stakeholders, no study has been identified that has attempted to extend such methodologies to directly measure the impact of the costs of occupational injury or illness on the income and living standards of workers and their dependents.

Despite this, the important relationship between work injury and illness and poverty is clear from an analysis of other relevant poverty research focussing on health and disability. With regard to health, research on chronic and transitory poverty has identified health shocks generally as one of the primary causes of ‘descents into poverty’ (Sen 2003). In a review of the research, Hulme and Shepherd (2003) find that a common “cause” of chronic poverty in many parts of the world is the chronic or terminal illness of a household’s main income earner. The loss of income, rising expenses and the liquidation of assets are all commonly associated with the withdrawal of the main breadwinner from the labour market (Ibid.), or with productivity declines for those breadwinners continuing to work while unwell (Sen 2003). What are not identified are the kinds of health problems that precipitated the withdrawal or reduced participation in the labour market.

To date only one health and poverty research study has been identified that explores occupational health and safety issues. This study of urban Rickshaw pullers in Bangladesh (Begum and Sen 2004) found the majority of illnesses and injuries experienced by workers was connected to their occupation and that in the case of major illnesses 30% of the sample liquidated their savings, 16% disposed of assets and 27% incurred debt.

As far as disability is concerned, most countries have little data and information (Metts 2000), and research on the impact of disability on poverty has been hampered by the severe lack of internationally comparable statistics (Yeo 2001). Despite this, the research that has been undertaken indicates that disabled people are over-represented amongst those living in extreme or chronic poverty (Ibid.). Given the lack of comprehensive data on disability it is perhaps unsurprising that there is little evidence of research that has focussed on the relationship between causes of disability (including work injury and illness) and poverty.

A number of 'common sense' conceptual models have been developed within the health and development, and disability and development research paradigms that emphasise an inter-dependent or cyclical relationship between ill-health or disability and poverty, and these often include an acknowledgement of the role of work health and safety. An example of one of the chronic poverty/disability and disability/chronic poverty models (from Yeo 2001) is included in Appendix 1. With regard to occupational health and safety, this model argues that chronic poverty reduces options to refuse hazardous working conditions, which then (in combination with other factors) heightens the risk of illness, accident and impairment, which in turn, as a consequence of discrimination against disability and loss of earning ability, contributes to further exclusion and loss of income.

2.4 OHS and economic development

In contrast to the lack of research on the OHS and poverty links, much work has been done to try and assess the economic impact of poor OHS at the macroeconomic and firm level. Methodologically sound measurements of such costs are crucial to understanding the relationship between employment quality and development and for challenging dominant assumptions about the negative impact of labour standards on economic growth. Further, the productivity costs of work injury and illness to small informal enterprises could be used as an effective tool to persuade and motivate appropriate stakeholders to invest in (or lobby for) the improvement of OHS for all workers. Indeed, as Nuwayhid (2004: 1917) notes, while workplace OHS interventions are presented as one of the tools to break the cycle of poverty via its impact on productivity, this sequence of positive impacts is not clear to decision makers in most developing countries who still consider OHS as a luxury.

At the macroeconomic level a widely praised and used model developed by the UK Health and Safety Executive (HSE nd) estimates that the economic costs of occupational illnesses and injuries amount to 4% of GDP. Applying the same model to South Africa, Benjamin and Greef (1997 in Hermanus 1999) estimated the cost to be 3.5% GDP. Loewenson (1999) applied a more simplistic model focussed solely on lost work time caused by injury and fatality and estimates a 3% GDP cost to Zimbabwe.

At the firm level there has been a historical preoccupation within the OHS discipline with demonstrating the business benefits of OHS by measuring the direct and indirect costs of injury and illness to employers. A large body of literature exists on this topic and the ILO (nd) in partnership with the Department for Occupational Safety and Health in Finland provide a useful overview of relatively simplistic methods to calculate such costs. However, to date there is little evidence that productivity and business cost measurements have been applied or are indeed applicable to informal enterprises in developing economies.

2.5 Assessing the extent of the problem

In considering the importance of OHS to employment and development it is important to review the available research on the scale and nature of work injuries and illnesses, particularly for informal workers.

The ILO estimates that 270 million occupational accidents and 2 million work-related deaths occur each year (Takala 2002). Sub-Saharan Africa appears to have the greatest rate per worker of occupational injuries followed by Asia (excluding China and India) (Appendix 2). It is widely suggested that the high figures can in part be explained by the relatively recent transfer of hazardous sectors such as logging, mining and export-oriented agriculture from industrialised to developing countries (Takala 2002a) where there are less resources to protect workers (Barten et al 1996) or where, in some cases such as ‘export processing zones’, employers may be exempt from labour legislation (Brown 2004). Within developing countries, increasingly dangerous work such as lead acid battery recycling, screen printing, metal stone grinding, and textile production, is being outsourced to informal enterprises including small family run concerns (Kemp 2002). Newer global production methods such as “Just-In-Time”, “Lean Production” and “Total Quality Management” have also been associated with greater levels of musculoskeletal disorders and repetitive strain injuries which are caused by ‘repetitive motion, static and/or awkward postures and manipulation of heavy weights’ (Brenner et al in ILO 2004).

A limited number of small scale studies have focussed on and tried to measure the hazards associated with informal work. A survey of 1585 informal workers in rural and urban Zimbabwe found similar occupational injury and mortality rates to those found in the formal economy, but higher rates of occupational illness (Loewenson 1998). In this and other studies in Southern Africa, informal workers reported problems of ‘poor work organisation, poor access to clean water and sanitation, ergonomic hazards, hazardous hand tools and exposure to dusts and chemicals’ (Loewenson 1999: 6).

Three studies have been identified that assess occupational injuries and illness in the informal economy in South Africa (van Niftrik et al 2003; Pick et al 2002 and London 1993). The largest and broadest study with regards sectors covered found the occupational injury incidence level was 7.2 times higher than the corresponding incidence in the formal sector (Niftrik et al 2003: 15).

Three large-scale OHS surveys have been conducted in the Philippines, including one OHS module attached to the Labour Force Survey in 1998-99 that helps to capture information on both formal and informal workers (Taswell 2001). The survey found that more than half of non-fatal injuries are incurred by the self-employed and that most injuries occur in small establishments with less than 20 workers (Ibid.). A comprehensive study conducted by the University of New South Wales, Australia found evidence of a strong and convincing link between precarious employment and inferior OHS outcomes, including injuries, illnesses and stress (Quinlan 2003).

While the information available on occupational risks for informal workers is limited, the impact of working conditions on women's health is even less understood. This is largely explained by the fact that much of women's work remains unrecognised, uncounted and unpaid. Kane (1999) explains that 'women may undertake paid work at home, or combine part or full time paid work with household work and the care of children, the sick and the elderly' and therefore a simple occupational category is 'seldom sufficient for establishing specific health risk'. There is also evidence that women may be disproportionately vulnerable to musculoskeletal disorders that are rapidly becoming one of the prime causes of work-related injuries and diseases (ILO 2004) because more women are employed in jobs characterised by monotonous rapid-pace work that require static postures and place static loads on muscles (Roskam 2003). Female workers may also be more vulnerable to toxic chemicals such as pesticides due to the fact that women in general have more body fat and that there is a high risk of adverse effects on unborn children if a woman is exposed during pregnancy (ILO 2004). This suggests that a focus on occupational injury alone at the expense of occupational illness might severely underestimate the negative impact of unsafe working conditions on women workers.

Unfortunately the real scale of the work illness and injury problem in developing countries, and especially its relationship to informal work, remains unknown due a number of limitations in the ways in which national OHS data is collected. The ILO publishes global accident rates but these are based on figures provided by member countries whose recording and notification systems vary widely or may not even exist, and which often explicitly exclude the informal economy (Takala 1998: 29). Under-reporting of *injury* is high amongst most developing countries but the under-reporting of occupational *illnesses* is even higher and is a universal problem (Kemp: personal communication, April 2005). Loewenson (1999) suggests that reported disease rates in SADC countries are likely to underestimate actual occupational disease rates 50-fold. The severe lack of reliable and large-scale data on OHS risks in developing countries, and particularly for informal workers, is a likely significant contributor to the current wide scale low priority given to OHS in both development debates and in national government policies.

The continuing growth of the informal economy is widely regarded as a direct product of the economic development strategies pursued globally and in this regard is not going to disappear. The clear relationship between informal work and economic vulnerability firmly places job quality as a key factor in the poverty and equity outcomes of different development strategies. The literature on OHS further suggests that poor working conditions could themselves be a cost to economic growth. In thinking about the possibilities of extending 'decent work' to all workers, including informal small scale miners in South Africa, it is important to now move on to explore the more general and sectoral context in which such workers operate, including both the regulatory and supportive institutions that impact on their livelihoods and their access to both social and labour protection.

CHAPTER 3

INFORMAL MINING: THE INSTITUTIONAL CONTEXT, AND CONSTRAINTS TO THE EXTENSION AND REGULATION OF OHS

This chapter looks at the growing importance of the informal economy within South Africa and its historical regulation and support. It pays particular attention to the situation of, and support provided to, informal small scale mining. The second part of the chapter turns to focus more specifically on the possibilities of extending OHS to informal workers in South Africa. A critical analysis of the characteristics and capacity of mainstream conventional OHS mechanisms in relation to the informal economy is given before identifying and exploring the potential role of alternative OHS stakeholders.

3.1 Growth of and support to informal workers in South Africa

After more than a century of repressive legislation and often aggressive enforcement which severely restricted informal work activities in South Africa, the 1980s saw national government moving to a position of greater acceptance of small businesses (Lund and Skinner 2004). An increase in informal enterprise activity combined with the wide scale restructuring of production through sub-contracting chains in response to increased global competition (Skinner and Valodia 2001), have both contributed to the growing numbers of workers in precarious and unprotected employment.

Using an enterprise definition⁴ and including both agricultural and paid domestic work, the informal economy was estimated to constitute 34% of total employment in South Africa in 2000 (ILO 2002a). More recent figures based on the 2003 Labour Force Survey, and using an employment status rather than enterprise definition⁵, indicate that more than 60% of all employment in South Africa can be identified as informal (Casale et al 2005). Further, the 2005 Labour Force Survey reveals that of the 658,000 new jobs created in

⁴ This is the 'standard' definition of informality, viz. that the business where the individual is employed is not registered.

⁵ Employment is identified as informal in the absence of an employment contract. The figure also includes formal and informal employers measured using the 'standard' definition of business registration.

the period between September 2004 and September 2005, 78% of these were in the informal economy (Krugel cited in Monteiro 2006).

Since 1994 government has highlighted the critical role of the SMME economy in achieving economic growth, employment generation and income redistribution and has developed and implemented a set of specific policies to promote small and medium and micro-enterprises (SMMEs) (Rogerson 2004). The institutional delivery of SMME support has been co-ordinated primarily through the Ntsika Enterprise Promotion Agency (responsible for business development services) and Khula Enterprise Finance (responsible for financial services) and channelled through a number of local service centres. More recent strategies include local industrial parks, small business incubation and linked sectoral cluster programmes (Ibid.). In his review of government support Rogerson (2004) reports poor SMME performance generally over the last ten years but in particular identifies a distinct failure of existing government strategies to reach micro-enterprises and the informal economy.

According to Rogerson (1999 cited in Rogerson 2004) and Lund (1998), survivalist enterprises can often be more appropriately and effectively assisted at the local rather than national scale of government. Skinner (2000) further argues that the institutional location of such assistance within local government should reflect the status of informal workers as credible economic agents. Historically the role of South African local government towards informal enterprises, particularly for street traders, was one of control and exclusion (Watkinson 1998). The 1991 Business Act however led to rapid deregulation and consequently the number of informal traders rapidly increased (Lund and Skinner 2004). The 1993 Amended Business Act instigated a slow process of re-regulation as local authorities were allowed to formulate street trading by-laws, and the devolution of the Business Act to provincial level in 1995 opened the space for the development of more varied responses to street trading within different municipalities (Lund and Skinner 2003). While some city councils, such as Johannesburg, used these new powers to remove informal enterprises from inner-city areas, Durban initially adopted a more progressive approach by providing demarcated areas and improved

service delivery to traders (Lund and Skinner 2005). While Durban also now seems to be moving towards a more restrictive approach, the point to be made is that a greater space has been created for local government flexibility in their responsiveness to the needs of informal workers and enterprises.

More generally one of the major tasks given to local governments by South Africa's 1996 Constitution was the promotion of local economic development. Two case-studies outlined by Lund and Skinner (2005) on local government support to workers within specific sectors, that of the garment sector in Johannesburg (from Rogerson 2004a) and traditional medicine in Durban, demonstrate the ability of local governments to translate this Constitutional task into the provision of direct and indirect support to survivalist informal enterprises and workers.

Despite these signs of commitment to the support and promotion of SMMEs and informal workers, the current regulatory and economic environment in which informal workers operate and the way in which mainstream services are structured leave many without support or protection. Lund and Skinner's review (2005) of South Africa's business environment identifies a number of such problems. They argue for example, that while labour legislation has been fundamentally changed most of those working in informal employment remain unprotected due to the nature of their employment relationship and the capacity of the labour department to ensure compliance. This is despite an assertion in the White Paper for the Development and Promotion of Small Businesses in South Africa (1995: 4.8.3) that more appropriate ways to safeguard minimum labour standards should be explored. Lund and Skinner (2005) also argue that high barriers persist to registering small informal businesses, particularly for foreign workers, and that the current system of business training provision through Sector Education and Training Authorities is failing to reach informal workers.

Lund's review (2002) of access to social security for informal workers in South Africa suggests that a whole range of protection measures such as workmen's compensation, unemployment insurance, maternity provision, retirement schemes, work assets and

health insurance and savings schemes are largely inaccessible to informal workers either due to the absence of a formal employment relationship or because the transaction costs of private schemes are too high for survivalist workers⁶.

3.2 Informal small scale mining in South Africa

While previous studies of informal workers in South Africa have focussed on sectors such as forestry, agriculture and clothing and textiles, and considerable attention has also been given to the situation of informal street traders, little if any research has focussed on informal miners. This neglect is surprising for two reasons. Firstly, mining has had an historical and profound impact on the South African economy and society (e.g. Marks and Anderson 1987; Webster 1978). As Nel et al (2003: 279) explain, for nearly a century and a half the South African economy was ‘skewed in terms of a noteworthy dependence on the mining industry and on coal and gold production in particular’. The fall in the price and demand for gold, the depletion of existing gold resources and mechanised coal mining have in recent years contributed to the effective economic collapse of once prosperous mining centres and the loss of tens of thousands of mining jobs (Seidman 1993). Northern KwaZulu-Natal is one of the country’s worst affected mining areas (Nel et al 2003). Despite this decline, mining remains an important industry and substantial employer. According to the 2003 Labour Force Survey the industry employs just under half a million workers⁷.

Secondly, and in parallel to informal work generally in South Africa, since 1994 there has been an increase in both informal and artisanal small scale mining due to the relaxing of strict legislation during the apartheid era (MEPC 1998). A shift in government attitude has also led to programmes and strategies to support the sub-sector as a potential source of rural employment and local economic development (Mutemeri and Peterson 2002).

⁶ On the other hand, unlike most developing countries, South Africans do have access to various means tested non-contributory cash grants which often provide a life line to informal workers (Lund 2002). These include the Old Age Pension, the Child Support Grant and the Disability Grant.

⁷ This figure was calculated by cross-tabulating sector with people of working age 15-65 and who are classified as currently working.

Definitions of small scale mining remain unclear and the term encompasses a wide variety of type and scale of operations from survivalist to well established, formalised, mechanised and relatively large operations. Illegal, artisanal and subsistence mining are regularly used terms but are ill-defined and it seems the variety of work organisation associated with mining different minerals has impeded the development of more operational definitions (Department of Minerals and Energy (DME) 1998). An article written by two officials from Mintek, a South African mining technology parastatal that has a small scale mining division, estimates that about 20,000 artisanal to small scale miners are active in South Africa and are involved in almost all mineral commodities (Mutemeri and Peterson 2002); a large number of these miners are women. The authors point out however that no proper quantitative survey has been done.

Despite the lack of rigorous data, the estimates given, frequent references to its rapid growth and the increased attention paid to informal small scale mining by the DME are suggestive of at least an internal knowledge within the sector that the scale of informal small scale mining is significant.

There have been very few studies conducted on small scale mining generally in South Africa and none identified has paid specific or substantial attention to informal miners. One major study on small scale mining (Minerals and Energy Policy Centre (MEPC) 1998) did include some mines operating at the lower less formal end of the sector yet the wide scope of mines covered with turnovers ranging from R150,000 to R100 million means that it is unlikely to have comprehensively captured the situation and needs of such informal workers. The more recent Mutemeri and Petersen (2002) article provides a confident overview of the situation and history of small scale mining but its sources of information are not made clear⁸.

While findings from research to date should be treated with caution many of the identified needs of small scale miners reflect those for informal workers generally. These

⁸ It seems likely that the information contained in the report is a summarised version of the 1998 MEPC report supplemented with the direct work experience of the Mintek authors in their work with small scale mines.

include limited access to appropriate technology, skills, capital, markets as well as mineral rights and deposits (Mutemeri and Peterson 2002). Further, the MEPC study (1998) found that barriers to registration were high.

In theory small scale mining is regulated by the same legislation as large scale mining but it seems that compliance is low and the activities of most artisanal miners are inefficient, unsafe and environmentally unfriendly (Mutemeri and Peterson 2002). The MEPC study (1998) found wage levels varied substantially according to job performed. Women were generally paid least, around R15 per day, male labourers received about R20 per day and operators and drivers from R30 to R50 per day.

The MEPC study reported health and safety conditions as very poor, particularly for illegal mines. A specific health and safety research study conducted on a sample of 23 previously uncontrolled but now formal small scale mines (CSIR 2000) also presents a damning report of health and safety standards. OHS problems identified included a lack of reliable information on small scale mining in general; common health and safety risks related to dust and rock falls; a lack of awareness regarding legislated OHS requirements; deficiencies in risk assessment, hazard monitoring, medical surveillance and training; and limited access to technical expertise, management systems and affordable appropriate technologies to promote health and safety and comply with current health and safety legislation.

The small amount of research on informal small scale mining in South Africa provides very little additional information on the nature and conditions of work carried out by informal miners. The information that is available suggests that workers face hazardous conditions and that existing OHS mechanisms are providing inadequate protection.

3.3 Support for informal small scale mining

Recent years have witnessed a number of changes in the governance of mining in South Africa that aim in many ways to distance the industry from its disreputable past towards a more progressive and sustainable future. One of the most important changes was the

passing of the Mineral Development and Petroleum Act (2002) which fundamentally shifted control of mineral rights to the state. This move aimed to provide more equitable access to the country's mineral resources and to ensure that mining companies contribute, through newly required social and labour plans, to skills development amongst employees as well as to 'local economic development' and 'social upliftment' in the areas in which they operate.

It is within this more progressive context and in recognition of the dramatic decline of formal large scale mining in South Africa that the DME has turned its attention to smaller scale operations. The Minerals and Mining Policy for South Africa (1998) dedicates a section to small scale mining and makes clear that it has a vital role to play in contributing to mineral exploitation, economic growth and income redistribution to both previously disadvantaged South Africans and underdeveloped regions. The policy commits government to facilitating the development of small scale mining into a sustainable, profitable, healthy, safe and environmentally friendly sector. It outlines the development of institutional support to facilitate and support needs driven research, funding, training, delivery of information and guidance and advice on mineral development and regulations (DME 1998). It states that:

All spheres of government and development agencies will work towards co-ordinating their activities in respect of the promotion of small-scale mining activities. Municipalities in particular will be encouraged to support the development and emergence of small-scale mining through appropriate Local Economic Development strategies (DME 1998: 1.4.4.2).

At the same time a National Steering Committee (NSC) of Service Providers to the Small Scale Mining Sector and Regional Small Scale Mining Committees were formed to streamline institutional support specifically for the 'lower end' of the sub-sector and to correct the practices of artisanal mining – 'especially unacceptable safety standards and environmentally unfriendly methods' (Mutemeri and Petersen 2002: 290).

The NSC is made up of the following service providers:

- The Department of Minerals and Energy (including a National Small Scale Mining Directorate and the Mine Health and Safety Inspectorate)
- The Minerals and Energy Policy Centre (a South African consulting organisation)
- Government mining service and technical organisations including the Council for Geosciences, Mintek and CSIR Miningtek
- The Khula Enterprise Finance (nationally responsible for SMME financial services)
- The Ntsika Enterprise Promotion (nationally responsible for SMME business development services)
- The Industrial Development Corporation (a self-financing national development finance institution).

The Small Scale Mining Development Framework (DME 2000) explains that Regional Small Scale Mining Committees are responsible for facilitating and approving small scale mining activities at regional level and are composed of members from the Department of Minerals and Energy (including Mine Health and Safety), Water Affairs and Forestry, Environmental Affairs, Agriculture as well as from local and provincial government in each region. Where small scale miners do not have the technical and financial expertise necessary to comply with regulatory requirements or to compile a business plan, the regional committees and the NSC are meant to work together in order to assist miners (DME 2000).

3.4 Characteristics and capacity of conventional OHS regulatory mechanisms

3.4.1 Occupational health and safety systems in South Africa

OHS laws, as with other labour relations and conditions of work legislation, were among the first to be revised in South Africa in the early 1990s and led to the Occupational Health and Safety Act (OHSA) of 1993 and the Mines Health and Safety Act (MHSA) of 1996.

The OHSA and the MHSA make a radical break with past approaches and both set out basic responsibilities and principles that are supported by detailed regulations and codes. However, Hermanus (1999) explains that both Acts are the products of a piecemeal reform process restricted to those departments which could be influenced by the trade unions and NGOs. As a consequence some old OHS elements remain intact and in some respects the new laws create greater confusion than the old (Ibid: 24). Further, the institutional responsibilities for OHS are complex and there is no mechanism to provide or facilitate overall coherence in standards and policy. Three government departments, Labour, Minerals and Energy, and Health, share responsibility for OHS and enforcement is separate for non-mining and mining sectors (see Table 1). The activities of these three departments are guided by separate policies, each involving their own approach and their own priorities (Hermanus 1999).

Table 1. Occupational health and safety laws and responsible departments

Act	Function	Department
Occupational Health and Safety Act (1993) (OHSA)	Ensures a healthy and safe environment in non-mining workplaces	Labour
Compensation for Occupational Injuries & Diseases Act (COIDA), 1993	Provides for medical cover and compensation of occupational injuries or diseases in all work places except for those covered under ODMWA	Labour
Mine Health and Safety Act, 1996 (MHSA)	Ensures a healthy and safe environment in mines and quarries	Minerals and Energy
Occupational Disease in Mines and Works Act, 1973 (ODMWA)	Provides for compensation for occupational lung diseases in mines and quarries	Health

Source: Jeebhay and Jacobs (1999)

The low level of resources dedicated to OHS generally is reflected in the ratio of labour inspectors to workers. This currently stands at one inspector for every 14,614 formal workers (Adams et al forthcoming). The proportion of non-mine workplaces covered by occupational health services has been estimated at between 11-18 % (Jeebhay and Jacobs 1999). Adams et al (forthcoming) also note a decline in attention to OHS from the

majority of South African trade unions since the 1980s and suggest this is related to threats to employment from current labour market pressures.

The structure and performance of current mine OHS mechanisms for formal mines is of particular importance when considering the potential for extending OHS protection to informal miners. Some of the major features of the new Mine Health and Safety Act (MHSA) (1996) include the establishment of representative tripartite institutions as well as structures for employee participation to promote a culture of health, to develop policy, legislation and regulations, and to oversee research. The Act also established the Mine Health and Safety Inspectorate to inspect mines, to investigate and conduct inquiries and to enforce OHS compliance. The employer (mine owner) is allocated the primary responsibility for health and safety.

A number of factors suggest that mine health and safety should be performing better than general industry OHS in South Africa. Importantly, the OHS budget of the DME which serves just less than half a million workers, is twice as much as that of the Department of Labour which is responsible for 14.2 million people (Hermanus 1999). Further, mining is the major exception to reduced union involvement in OHS and the National Union of Mineworkers was extensively involved in the formation of the new Act.

A recent review of the health and safety performance of the mining sector and the implementation of the MHSA (IMC and The Resolve Group 2003) provides important information on progress made as well as wide-ranging new and continuing limitations. The most important and relevant limitations, and those that seem to raise particular concerns about the possibility of extending OHS to informal workers, are summarised in Appendix 3. In short, problems relate to the continuing unacceptably high rates of occupational injury and illness, limited resource and personnel allocation, the neglect of occupational health, a failure to tackle hazards at source, limited attitudinal change, an absence of data to monitor performance and the lack of a dedicated OHS policy development team.

In their review of South African OHS, Adams et al (forthcoming) conclude that fragmentation and poorly resourced administration and enforcement, combined with lack of pressure from organised labour, have meant that the strengthening of OHS legislation has not yet converted into real impact at the workplace level in both mining and non-mining sectors (Ibid.). While plans to harmonize legislation and create a National Occupational Health and Safety Council could potentially overcome some of these problems, to date there has been little progress towards implementation (Ibid.).

On a more promising note in relation to small scale mining, the Minerals and Mining Policy for South Africa (DME 1998: 1.4.4.3) makes clear that mining of whatever size and type should be subject to the same requirements in respect of licensing, safety, health and the environment, but that an approach of guidance and advice towards small scale miners will be adopted. There is also recognition in the policy that current legislation and government policies do not adequately address some of the health and safety problems associated with small scale mining and that such legislation will be reviewed to ensure it is practically applicable (DME 1998: 3.1.4). The progress towards achieving these two goals is an important area of exploration for this study.

3.4.2 National OHS trends

A broader analysis of national OHS mechanisms across developing countries suggests that a number of global trends should also be considered in evaluating the potential performance of the current South African OHS policies, particularly in relation to informal workers. These include the worldwide decline of dominant 20th century national OHS models based on statutory regulations and an increasing emphasis on market and self-regulation (ILO 2004: 173); severe reductions in government spending associated with structural adjustment policies and neo-liberal policies generally that have undoubtedly led to cut backs in regulatory apparatus and state funding for OHS (Ibid.); the rising competition for funding presented by the large number of other health issues in developing countries (LaDou 2003), not the least of which is the increasing burden of HIV/AIDS on public health systems; and the recent outflows of occupational health

professionals from developing countries⁹ (Loewenson 2001). Such trends have resulted in a lack of technical, financial and human resources required for developing adequate OHS regulations (Brown 2004). Overall, developing countries have fewer experts, less safety equipment, less monitoring equipment, fewer inspectors and worse enforcement than developed nations (Giuffrida et al 2002).

3.4.3 Conventional international OHS mechanisms

At the international level the International Labour Organisation (ILO) and the World Health Organisation (WHO) constitute the most important institutions that influence the nature and form of national OHS mechanisms. Their current level of influence as well as their stance towards the informal economy is therefore particularly important when considering the potential extension of existing mechanisms to protect informal workers within any one country.

The ILO is a specialized UN agency that promotes the recognition of human and labour rights and formulates international minimum labour standards in the form of Conventions and Recommendations. In the last ten years the ILO has sent strong signals about the need to accommodate new and changing forms of employment arrangements in the conceptualisation and measurement of work. From within the ILO Trebilcock (2004) argues that many of the conventions do indeed apply to the informal economy and a number of small scale ILO initiatives have dealt with workplace improvements for informal workers.

However without ratification and implementation of ILO Conventions the organisation lacks impact at national and international level. Recent ILO data show that as of December 2005, only 45 out of 181 countries had ratified Convention 155 – the most important and general ILO Convention on OHS that sets norms for safe work and the

⁹ While figures are not available specifically for occupational health professionals a number of recent studies have reported a substantial outflow of health care professionals, especially nurses, from developing countries. For example, in Ghana in 2000 more than twice the number of new nurses who graduated from nursing programmes in the country that year left to work in other industrialised countries (Zachary in Buchan and Sochalski 2004) In Malawi, between 1999 and 2001, over 60% of the entire staff of registered nurses in a single tertiary hospital left for jobs in other countries (Martineau et al in Ibid.)

management of OHS, and promotes policy convergence. Ratification levels of the other important OHS Conventions¹⁰ are much lower. The exclusion of work health and safety from the ILO's core labour standards¹¹ has been accused of further downgrading the priority given to OHS by both the ILO and the international community 'when regular budget resources and issues such as international technical cooperation are discussed' (Takala 2002).

South Africa has ratified OHS Convention 155 which Kemp (2002) argues forms a fundamental basis for progressive OHS legislation in its commitment to equity, prevention and participation. The Convention includes potentially controversial but important Articles such as: the right of workers to leave their workplaces if they feel they are in imminent danger without suffering any recrimination; the right to OHS training and to representation in negotiations to improve health in the workplace; and that OHS measures should not involve any costs to workers (Kemp 2002). Such rights are clearly significant in terms of the potential for extending OHS to informal workers in South Africa, if as the ILO claims, they do indeed apply to informal workers.

The WHO has a broad health mandate that includes OHS as one small component. The organisation is primarily responsible for the technical, including medical aspects of OHS (LaDou 2003). OHS programs promoted for developing countries by the WHO have been widely criticised for simply replicating models from resource rich countries that are ill-suited for resource poor and differing socio-economic country contexts (Ibid.). Further, the WHO's 'Global Strategy on Occupational Health for All' is primarily a response to new work technologies and the transfer of hazardous technologies to developing countries, as well as ageing working populations and new occupational diseases. It pays little attention on paper to the challenges presented by informalization.

¹⁰ It is widely accepted that the core OHS conventions are 155 (tripartite occupational health systems, rights and responsibilities), 161 (occupational health services), 170 (chemical safety) and 174 (prevention of major industrial accidents).

¹¹ The 1998 ILO Declaration on Fundamental Principles and Rights at Work commits member states, whether or not they have ratified the relevant Conventions, to promote principles and rights in four categories, namely: freedom of association, the elimination of forced and compulsory labour, the abolition of child labour and the elimination of discrimination in the workplace.

At a general level the WHO and the ILO are required to provide assistance in the development of health and safety programmes to those developing countries that request it, but in reality both agencies have such limited budgets and staffs that they are often unable to provide the direct services required (Ibid.). LaDou (2003: 6) notes for example, that at the time of publication the WHO Program for Occupational Health supported a staff of only four people. In addition, while the services of both agencies are fundamental to the progress of OHS strategies, neither has the necessary enforcement powers to ensure standards are upheld. LaDou (2003: 6) argues that ‘the courtly diplomacy of the WHO and the ILO often masks the meagreness of their accomplishments in international occupational health and safety’.

3.5 Constraints to broadening conventional OHS regulation to informal workers

The ILO estimates that only 10% of the population in developing countries are covered by occupational health and safety laws (LaDou 2003). Poor coverage can partially be explained by the technical, financial and human resource constraints already discussed in the design and implementation of regulation at both national and international level, and in some cases by the asymmetrical power relations between major employers (such as multinational corporations) and governments. However, the literature points to a number of other important generic problems across national current mainstream regulatory approaches that could also serve to limit the improvement of occupational health and safety for all workers in South Africa, especially those in informal and precarious employment. These constraints are explored in some detail as they provide the context for the research questions of the study.

3.5.1 Enterprise size and employer responsibility

A large proportion of workers are explicitly excluded from protection in many countries because most laws regulating OHS apply only to medium-or large scale industries (Barten et al 1996). The agreement between the ILO’s member states, employer organisations and worker organisations was that enterprise size criterion could be set at

individual country level. This unfortunately creates the space for countries to perpetuate the pattern that small scale workers and enterprises are not included in OHS regulation. This raises serious ethical questions about the employment creation strategies of many national and local governments that target the promotion of SMMEs.

In addition, and as serious, is that deeply embedded in the conceptual approach of most mainstream regulatory mechanisms is a reliance on easily identifiable employers for the enforcement of OHS. Even for those nations that do in theory protect all workers, regardless of size of enterprise, this conceptual approach leads to a failure to satisfactorily protect the health and safety of many workers who are in disguised or concealed or objectively ambiguous employment relationships. This includes those working quasi-informally such as piece-rate workers or sub-contracted wage workers. Here, goods and services are supplied in terms of a commercial contract¹² rather than an employment relationship and as such the 'scope for all forms of regulation premised on an employment relationship is correspondingly reduced' (Theron and Godfrey 2000: 12). And of course, this conceptual approach does not begin to address the regulation and protection of OHS standards for the genuinely self-employed, and their employees, within the informal economy.

Employer responsibility is rightly engrained as a principle of social justice (Myburgh et al 1999:10) however it currently appears to inhibit re-thinking about OHS possibilities and responsibilities for the rapidly growing informal worker population. While the DME's stance in South Africa is that OHS regulation applies to all mining operations of whatever size, the allocation of primary health and safety responsibility to employers is a likely limitation for extending coverage to informal self-employed or sub-contracted miners. The ILO guidelines on health and safety on small scale open-cast mines (ILO 2001a) are also premised on employer responsibility.

¹² For example, in South Africa a new association called the Confederation of Employers in South Africa was established with the explicit intention of assisting employers to avoid the new progressive labour legislation, largely via sub-contracting (Lund 2004). Its charter states that all occupational health and safety requirements are the responsibility of the contractor – that is, the piece rate workers.

3.5.2 Inappropriate focus and administration

Occupational health is largely practised as a scientific and technical discipline (Nuwayhid 2004) – that is, assessing the relationship between working conditions and worker health and then designing medical and technical solutions to cure or prevent. The tendency to prioritise resource heavy OHS research, screening and curative medicine leads to the neglect of cheaper and simpler approaches, such as changes in behaviour and work organisation (Peltomäki 2003), that could achieve substantial improvements for large numbers of informal workers (Loewenson 1999; van Niftrik et al 2003). Shukla et al (1991: 601) question the usefulness and appropriateness of the narrow focus of occupational health on positing a clearly identifiable ‘agent’ or ‘toxin’ for each disease given ‘the rich and complex gamut of interaction between work and health’. Indeed they argue that while more neglected conditions such as lumbar backache maybe less esoteric, complex or even interesting, ‘magnitude-wise they are responsible for more workers’ misery compared to classic “occupational diseases”, many of which tend to be regarded as insignificant irritants’ (Ibid: 601).

The dependence of OHS systems on centralised teams of technical specialists whose role it is to research, inspect and enforce also limits the development of more appropriate worker-led approaches that may hold potential to reach more informal workers. Indeed, Pringle and Frost (2003: 309) argue that there is an ‘institutionalized aversion to worker participation in safety issues’.

3.5.3 Broader sources of vulnerability

The narrow technical conceptualisation of occupational health within mainstream mechanisms also makes them highly unresponsive to broader sources of vulnerability faced by informal workers that influence their health and safety, and that are not technically fixable within the work environment. In short the causes of illness and injury are not only hazardous work conditions and the consequences are not only ill health or injury to an individual. There is a social, political and economic context to that risk that must be understood if prevention strategies are to be effective. Unless the sources of

vulnerability to injury or illness are tackled then any narrowly defined package of practical measures to improve OHS will be undermined.

Some examples of potential sources of worker vulnerability that might undermine current OHS strategies if neglected could include:

- that health and safety is a low priority for workers because: the urgency of earning a living takes priority over other concerns; there is a lack of awareness of the links between work and health; there is a lack of understanding of the negative impact of poor health on productivity; income earned is not sufficient to implement recommended OHS measures
- that the economic imperative to earn leads to overcrowding in advantageous trade or production locations with important consequences for service delivery, such as refuse collection and water supplied, and result in a general hazardous environment for all who live and work in the area. Barten et al (1996) suggest that overcrowding may also occur where workers take a 'safety in numbers' approach to protect themselves from officious local authorities who consider informal workers/enterprises a nuisance or even illegal
- that 'illegal' status of informal enterprises undermines the security and permanence of work premises/location. Without such security there is little incentive to invest in the improvement of working conditions (Rongo et al 2004)
- that the nature of payment for work, e.g. piecework, may lead to self-exploitation in terms of pace of work and number of hours worked (Shukla et al 1991). For example, if pace of work is crucial to earn sufficient income and the recommended protective equipment slows productivity, then workers may choose not to protect themselves. Excessive hours worked may increase exposure to dangerous chemicals despite following safety guidelines given that such guidelines are based on average hours worked in industrialised countries
- that pre-existing health problems, particularly those that compromise the immune system such as HIV/AIDS, may increase risk of ill-health and injury even if internationally accepted guidelines on dangerous products are strictly followed

The review of international literature on OHS interventions for informal workers shows that few strategies to date have fully embraced and attempted to tackle this interdependence between OHS and other sources of risk and vulnerability, including much of the work administered through the ILO's SafeWork programme. Indeed, many such interventions appear to falter precisely because of other constraints facing workers, such as lack of income or inability to take time off work (Rinehart 2004).

3.6 The potential role of non-conventional OHS stakeholders

The constraints discussed indicate a lack of responsiveness of conventional OHS mechanisms to the challenges presented by the changed world of work. Through the literature available the following discussion identifies a number of important non-conventional OHS stakeholders or mechanisms by their relationship to the causes or consequences of poor OHS, or by their importance to, or responsibility for, informal workers. Such stakeholders, if involved in extending OHS to informal workers, might be less constrained by the conservatism of mainstream OHS approaches. The barriers to their involvement that might be expected however are also explored.

3.6.1 Health systems

There are clear interdependent relationships between OHS and other health domains and especially with environmental and public health (Nuwayhid 2004). For instance, with the increasing number of small scale industries in developing countries and with few if any effective restrictions on the health and safety of their enterprises (Barten et al 1996), such industries may contaminate local environments with dangerous refuse, including toxic chemicals. Where these industries are located within residential areas or even within homes, there are clear spill-over and cost implications for both environmental health and public health services. The impact of such spill-over effects has been measured in a number of studies (Matte 1989; Barten 1992; Shukla et al 1991) and is an especially important consideration in areas where a large number of the population have compromised immune systems as a consequence of HIV/AIDS. Likewise, if environmental and public health and safety are poor in areas where work is being undertaken, this clearly also has implications for the health and safety of the worker. In

some cases, occupational, environmental and public health become impossible to distinguish (Van Eerd 1997).

However, while OHS services rarely extend to informal work environments, other health systems fail to pay attention to these general health consequences of poor OHS. One positive exception found in South Africa is the efforts of Durban Environmental Health to engage with street vendors in improving food and workplace health and hygiene in the interests of the health of the traders themselves, as well as the customers they serve (Lund and Skinner 2003). On a more general level Barten et al (1996: 157) note that analyses of district health needs and problems 'seldom include an assessment of industrial hazards, workplaces, and work processes, nor are they generally carried out with the participation of workers and other community members'. Further, information on work hazards is rarely collected routinely in terms of exposure levels etc., at the primary care level (Ibid).

Barten et al (1996) point to the common institutional location of OHS within labour ministries (a model transferred from developed countries) as partly to blame for this lack of collaboration between the health domains. They argue that such an institutional arrangement is inappropriate in countries where most workers are unorganised, 'are women and children whose health needs cannot be separated into "home" and "work," and where industrial processes may affect not only workers' health but also that of the population living nearby' (Ibid:157).

A number of studies on OHS research in developing countries and specifically on informal workers from within the OHS discipline (including one from South Africa) conclude with recommendations to integrate OHS into existing primary and public health care services rather than labour ministries (e.g. Barten et al 1996; Loewenson 1999; London 1993 and Nuwayhid 2004). Questions remain unanswered however as to the ability and willingness of health departments to adopt such a worker focus and therefore will be a focus of this study.

3.6.2 Local government

The important role and influence local government have in relation to informal workers generally, and in the DME's strategy for small scale mining in particular, has already been highlighted. Those governing the space where people work have a direct influence on the health and safety of the work environment and so for workers operating on the streets or other public places, local government also becomes an important stakeholder in OHS. It makes a significant difference to the health security of such workers as to whether and under what conditions the local government allocates resources to for example, good sanitation, good street lighting, refuse removal, and affordable electricity and water provision. The critical links between such local government services, worker health and worker productivity (and therefore poverty reduction and local economic development) however, are rarely made (Bond 1997).

3.6.3 Support systems for SMMEs and informal workers

Poor working conditions are frequently mentioned as a challenge faced by informal workers and SMMEs, and as a justification for the provision of support to such workers in the policies and strategies of organisations and government institutions. Indeed, this is the case for both the White Paper for the Development and Promotion of Small Businesses in South Africa (1995) and the Minerals and Mining Policy for South Africa (1998). However, in the actual design and implementation of such strategies there is little evidence that OHS receives the same level of attention as other kinds of SMME or informal worker support needs, such as credit and business skills training (Salter 1998).

3.6.4 Worker organisations

As Gallin argues, '...nowhere in the world...have workers been able to defend their rights successfully except through organisation...' (2002:23). Genuine and representative organisations are also 'crucial for the development of policy interventions conducive to poverty reduction and decent work' (Goldman 2003: 3). Member based worker organisations can offer informal workers the opportunity to gain voice and build capacity so they have the skills to negotiate and influence both their employers and policy (Chen et al 2005). Due to the small size of the majority of informal worker organisations that do

exist, their visibility and influence on issues such as OHS are however, largely dependent on the provision of genuine spaces for their voices to be heard within, for example, communities, local and national government forums, and international development and policy circles (Ibid.). In the case of self-employed workers an added challenge is the frequent lack of relevant or appropriate bodies with which they can negotiate their needs. This is particularly problematic for issues such as OHS protection which are conventionally the responsibility of the employer.

Formal trade unions can play an important role in supporting and organising informal workers but their level of influence has fallen markedly in many countries in recent years largely because of increasing unemployment and the informalisation of work. Despite dramatic declines in membership numbers, most unions have been unable to see that if they are to win new members, new approaches must be developed that do not hinge on establishing clear employer-employee relationships. Only a handful of unions and federations have attempted to organise unprotected workers or form partnerships with existing informal worker organisations. This trend is very problematic for extending and enforcing OHS given the clear relationship between worker organisation and improved health and safety (Loewenson 2001: 866). Countries where unionization rates are high are those that have ratified the greatest number of conventions on health and safety. These countries also rank highest in terms of occupational injury and illness prevention and of health and safety (Takala 2002).

3.6.5 Codes of Conduct

As traditional forms of state regulation have proved limited in the context of rapidly expanding globalisation and as production chains have increased in length and complexity, there has been an increasing emphasis on voluntary codes of conduct to manage compliance with labour standards, often including health and safety, across value chains. The Ethical Trading Initiative (ETI) in the UK is an important example of a collaborative effort between companies, NGOs and trade unions to develop and promote labour codes of conduct in both developed and developing countries. The ETI recognizes

the fundamental importance of OHS and includes measures to ensure safe and hygienic working conditions.

However, Heeks and Duncombe (2003) find that while there is evidence of positive outcomes of ethical trade initiatives, the successful cases are vastly outnumbered by those that have little or no impact. Such limitations are caused by both 'design-reality gaps in planning and implementation of initiatives' as well as major institutional problems on issues such as underlying stakeholder interests, regulatory incentives and asymmetries of power and information (Ibid). In their study the International Business Leader's Forum (2000) found that code compliance and verification have proved neither a valid nor a cost effective way of dealing with issues such as occupational health and safety.

Further, due to the importance of consumer pressure in the development and enforcement of such mechanisms, Brown (2004) argues that voluntary codes have a limited impact on labour standards within non-consumer product sectors, such as the export of primary resources. In addition, those workers not involved in export-oriented production chains, are inherently excluded from the benefits of voluntary codes.

The limitations of voluntary codes of conducts and their uneven impact lend support to many OHS practitioner arguments that there is no substitute for national and international laws and enforcement systems to create the necessary background regulatory environment to hold employers and governments to account (e.g. Loewenson 2001; Kemp 2002). Unni and Rani (2003) also argue that the inadequacy of orthodox mechanisms and institutions does not necessarily mean abandoning them altogether but ensuring that they are reoriented towards meeting the needs of informal workers. This argument justifies the equal attention paid in this study to such conventional mechanisms despite their clear limitations.

3.6.6 OHS disciplinary isolation

While much attention has been given here to the failure of external institutions and stakeholders to perceive the relevance and interdependence of OHS and informal work to

their own activities and responsibilities, LaDou (2003) reasserts that the problem is just as much an internal one to the OHS mechanisms themselves. This is not only in regard to the narrow conceptualisation of OHS that has already been discussed but also to the failure of OHS actors to retain links with other disciplinary researchers, implementers and civil society allies that were so fundamental to the establishment of the OHS discipline (Ibid.).

3.7 Summary and research questions

The opportunities for and constraints to extending OHS to informal small scale miners in South Africa are unknown. The vast array of significant institutional and policy changes that have taken place since 1994 generally, and those discussed here in relation to the informal economy, small scale mining and OHS, present a new if still changing context in which to explore potential new spaces for extending labour protection to informal workers.

Conceptual and institutional constraints identified in the literature temper any expectations of a straightforward solution to promoting or regulating the health and safety of informal small scale miners. The minimal response of conventional national and international OHS mechanisms to the changed world of work is problematic. Further, available evidence suggests that the clear interdependence of OHS with the duties and responsibilities of other organisations and institutions has not yet prompted their participation in OHS strategies. However, debates to date appear to have remained largely at the level of theory and speculation, and no examples have been found where the topic has been practically researched to any depth to explore and interrogate the complex institutional issues involved. Without such research the reality of a willing and appropriate response to calls from organisations such as the ILO to extend labour protection to informal workers will remain little understood.

This study is informed and guided by existing social protection and informal economy research frameworks, as well as the findings from the OHS literature, and aims to practically investigate these issues as they apply to informal small scale mining. The

sector focus will take place within a limited geographical area that will enable a structured qualitative exploration of both the major limitations of traditional health and safety mechanisms in the context of the changed world of work, as well as the potential roles and capacity of non-traditional OHS stakeholders in protecting the health and safety of informal workers. By mapping various existing institutions and potential OHS stakeholders involved in small scale mining in South Africa the study seeks to explore the following questions:

1. What types of health and safety challenges exist and what are workers' attitudes towards them?
2. What are the opportunities for and constraints to workers accessing protection through existing OHS mechanisms?
3. What is the potential for non-conventional OHS stakeholders or avenues playing a role in OHS protection for informal miners?

CHAPTER 4

METHODOLOGY

The literature review has raised a number of broad level opportunities for and constraints to extending OHS to informal workers. This small scale study was designed to explore and test these to a greater depth within one sector.

4.1 Choice of informal mine sites

A decision was made to select two or three informal mining sites within the province of KwaZulu-Natal. In qualitative research Merriam (1999: 18-19) explains that:

‘A case study design is employed to gain an in-depth understanding of the situation and meaning for those involved. The interest is in process rather than outcomes, in context rather than a specific variable, in discovery rather than confirmation.’

It was felt that the small number of sites would provide an opportunity to explore the research questions while simultaneously developing an understanding of the geographical, social, economic and political factors impacting on the activities and situation at each site. The geographical limitation allowed a fuller exploration of the institutional processes acting through national, provincial and local structures than would have been achieved if the sites spanned across different provinces. Time and money constraints were also important factors in the decision to limit the number of case-studies and find sites within the KwaZulu-Natal province.

Determining the universe of informal mining sites in the province was not possible. Contact was made with various officials within the Department of Minerals and Energy (DME) but few were willing to respond and those that did each gave a small number of different examples to those given by their colleagues. Contact was also made with members of various mining parastatal institutions, the South African Women in Mining Association (SAWIMA), local government officials, as well as both national and

international consultants and academics through the Communities and Small-Scale Mining network. Again the information obtained was extremely limited and it was therefore decided to choose two sites that were: 1. most frequently identified by those contacted; 2. being mined by large numbers of workers; and 3. known to have been involved in support programmes for the development of the small scale mining sector. The latter would allow an understanding of the actors involved and priority given to OHS within such support strategies.

The first site chosen was a kaolin mine in rural Ndwedwe located approximately 55km North West of Durban. The second site was a clay/coal brick making mine in the rural area of Blaaubosch on the outskirts of the Newcastle Municipality. The latter mine is approximately 20km from central Newcastle and about 300km North West of Durban.

4.2 The study participants

The sampling and data collection were carried out in two phases. The first was with those working on the mines and the second with sectoral and local stakeholders. For each site a key informant and gate keeper was identified who was locally based, closely related to the mine and was known by the miners. At both sites the key informant provided a tour of the site. A visit to the market in central Durban where the Ndwedwe workers sell the kaolin enabled some additional important observations on numbers of workers and work organisation. An additional key informant from the Council for Geosciences provided an overview of the history of each site.

No definitive list was available of all the workers and estimates given varied widely from 130 to 250 for Ndwedwe and between 250 and 1000 for Blaaubosch. Information provided by the key informants and my own observations was therefore used to construct a simple profile of the workers and their roles. The profile was then used to purposively select research participants to ensure a variety of perspectives from workers of different

ages, gender and work activity were explored¹³. Age was considered important to help explore potentially differing attitudes towards health and safety as well as impacts of working conditions on wellbeing. Gender is potentially useful to assess the impact of differing work activities for men and women as well as work organisation, ownership and relations. Different work activities bring different risks and so are also important to include. Only workers that had mined for over a year were interviewed. This decision was made to increase the likelihood that participants would know and/or would have benefited from any OHS intervention in the past. In addition, for Ndwedwe, the only male participant was selected as his role is to dig and break the rocks to enable the women workers to dig the kaolin and he also claims to oversee the structural safety of the site. For Blaaubosch one of the men interviewed was purposively selected for his openly critical views of the community mining Trust.

The sample could not be representative but was chosen to explore potentially diverse views and experiences. In total six workers from each site were interviewed¹⁴.

For phase two, due to the lack of existing or accessible documentation on assistance interventions at either site, information collected from phase one as well from contacts with key DME officials was used to construct a list of the most important and relevant local and sectoral stakeholders who have a relationship to the mines and or the workers. Each participant in phase two was also asked to identify other stakeholders who were then contacted where appropriate. Selected additional people were drawn from the literature review and conceptual framework of the study. Due to the small size of the study not all potential stakeholders identified in the literature could be included. Instead their position and role was explored from the perspective of the study participants.

Ten interviews were carried out in phase two. Many of the participants were involved with both mine sites as well as informal mining more generally in the province. This

¹³ For the selection criteria at Blaaubosch, membership of the community mining Trust was also considered an important variable in determining workers' relationship to the existing assistance strategy and therefore members and non-members were included.

¹⁴ One of the interviews at Ndwedwe was unfinished because the participant said that she had to leave.

enabled a broader exploration of the informal mining context and the overall assistance strategies currently in operation. State, private and civil society stakeholders were identified for both sites and are captured in Figures 3a and 3b (on page 59 and 60).

Participants of the study were drawn from the following departments/areas:

- Department of Minerals and Energy including Small Scale Mining Directorate and Mining Inspectorate
- Mining Qualifications Authority/Department of Labour
- Local government including planning, economic development and small business support
- Department of Environmental and Water Affairs
- A mining consultant and advisor on small scale mining
- Mining corporations
- South African Women in Mining Association

Participants are identified in Figures 3a and 3b by a red border and are listed in full in Appendix 4. Some of the participants are involved in the projects through their role in more than one organisation or department and their letter appears more than once. It is important to make clear that the Small Scale Mining Directorate has only one small scale mining official stationed at each regional DME office. The KwaZulu-Natal official was a participant in this study.

4.3 Choice, development and implementation of the interview

The research questions of this study required subjective information on personal experience and well-being, knowledge, opinions, capacity, commitment and potential action. Structured and semi-structured in-depth interviews were chosen to provide a guided yet flexible exploration of such information within the context of each participant's role and relationship to the mines.

For phase one the interviews were structured but open ended to limit interviewer or translator bias, enable some limited comparisons, but also to allow participants to answer in detail in their own words. Available methodologies of the small number of studies

identified on OHS and informal work (e.g. Loewenson 1998; van Niftrick et al 2003) were interrogated, adapted and used to develop appropriate and useful work health and safety questions targeted at a small and unrepresentative sample. The inclusion of both general and specific health questions aimed to overcome a major problem identified in previous health studies that those with poorer education levels are less likely to self-report ill-health than those better educated, despite often suffering much worse health (e.g. May et al 2000; Unni and Rani 2003).

Interviews were structured to gain information on basic impressions of daily working conditions and health and safety challenges; attitudes towards health and safety; and any historical or current interaction workers have or have had with formal institutions, including those responsible for health and safety (see interview schedule in Appendix 5).

The majority of the workers did not speak English and therefore an interpreter was trained to conduct the interviews and translate responses. I was present at all interviews (see reservation below) to be able to probe any unexpected or important responses that the translator might not pick up. A pilot interview was carried out at each site to check and modify the interview where necessary. Thereafter a de brief was carried out after all interviews to clear up any identified or suspected problems. Interview notes were typed up at the end of each day or as soon after the interview as possible.

Interviews for phase two were more loosely structured around a set of core key questions but with the flexibility required to accommodate and explore the variety of perspectives and positions that naturally come from very different types of stakeholders. The major themes guiding the interview construction and process were:

- Perceptions of miners' health and safety, OHS responsibility and its priority in relation to other goals
- Information about existing OHS strategies including their achievements and limitations
- Perceived linkages between stakeholders' own work and responsibilities and worker health and safety

- Perceptions about the possibility of extending protection through new institutions and mechanisms
- Level of enthusiasm and capacity for playing a role in OHS protection

The study sought information in as natural a context as possible that encouraged participants to respond from their own perspectives and experiences and in their own words (Ulin et al 2003). For phase one careful consideration was also given to the interview location at both sites due to concerns of causing income loss for the workers. All but two of the phase two interviews took place at the participant's place of work. One of the exceptions was a telephone interview while the other took place at the University of KwaZulu-Natal while the participant was visiting Durban. Each interview was recorded on tape and transcribed as soon as possible after completion with additional notes and observations made during the interview.

The interviews ranged between 40 minutes and one hour for phase one, and from an hour to two and a half hours for phase two. All interviewees were given a brief explanation of the study's aims and objectives and asked to sign to indicate their informed consent for me to use the information provided for the research report. Phase one interviewees were given the information in isiZulu (Appendix 6) and were assured of their anonymity and confidentiality. Phase two interviewees were asked for their permission to use their name, position and organisation/department in the research report. All gave their permission and all declined the opportunity to review and correct their own interview transcripts. Each participant was asked for their name and address if they wished to receive a copy of the final report¹⁵.

4.4 Other methods

In addition to interviews, and in recognition that the use of multiple methods and a combination of perspectives adds rigor, breadth, and depth to any investigation (Flick in Denzin and Lincoln 1994: 2), any observations made and points of interest from informal

¹⁵ It is my intention to write and translate a summary of the report into isiZulu for the phase one participants.

conversations in the field were recorded in a field diary and written up in more detail at the end of each day. Any available documentation related to the mine or to the strategies of the stakeholders assisting the miners was also collected throughout the field work. Further, a number of photographs were taken during the mine visits as a form of documentation of work activity and conditions. Permission was sought for any close up photos and when requested photos taken of people were printed and given to the workers on the following visit.

4.5 Data analysis

Preliminary analysis of the data was carried out during the field work to identify and code emerging themes as well as any validity problems that could be corrected. Analysis of phase one data was carried out before, and to inform phase two data collection.

A content analysis was done of the transcribed interviews from phase two, the more qualitative sections of the phase one interviews and any data in the field diary arising from informal conversations and observations. Themes were generated from the conceptual framework and research questions guiding the study as well as from the data itself and then used for manual coding. Data that was left unclassified was then revisited to check for patterns or themes that had been unwittingly excluded. A clear and simple audit trail to all data sources was maintained throughout analysis and write up of the findings. Responses included in this study are referenced with an identifying letter for the participant and, in the case of direct quotes or specific ideas and opinions, the line number from the transcript. Figures 3a and 3b indicate the letter allocated to each participant.

In classifying and restructuring the data into themes and categories a great deal of time and care was taken in being honest to the data and ensuring that context was not lost. For example, where there was any possibility of a leading question, or a response that was made without conviction, or wherever an idea or opinion was later contradicted, this information would be included in brackets with the data so as not to misinterpret or interpret too much. This is not a fool proof system and given the time involved is

determined by the integrity and commitment of the researcher. Further, interpretation of the data, especially participant's attitudes towards health and safety issues, was attempted without judgement based on my own ideals and assumptions but was rather firmly placed in an understanding of the 'real life' context characterised by severe resource limitations, new, changing and heavily burdened government systems, long-term under-investment in rural areas and the reality of new and unexpected challenges presented by the changing nature of work.

Being confident that participants were giving accurate and honest information is in some senses more challenging. Efforts to promote a relaxed, flexible and open interview style went some way to enabling participants to feel confident and speak honestly about their perceptions. Interviewing a variety of stakeholders about the same case-study also meant that I could cross check references to the same subject and note where interpretations differed. Having said this, differing interpretations were also valuable in their own right for exploring the research questions. Interview notes on gestures, facial expressions or any indications of a lack of confidence or knowledge were also bracketed with the data to assist in this process.

4.6 Questions arising from and limitations of the study

The process and interaction involved in conducting qualitative research in South Africa, particularly in rural areas, and particularly as a white English/Irish researcher raises a number of ethical issues, questions and challenges, some of which constitute limitations to the study.

The nature of informal mine work means the more you mine the more you are likely to earn. As already discussed, and given the already low income earned by the workers, care was taken to avoid any income loss. This was straightforward for Ndwedwe as the majority of interviews were conducted at the market or in Ndwedwe while it was raining¹⁶. The situation at Blaaubosch was more difficult. Some miners worked in groups and were asked to agree amongst themselves who would participate; others were

¹⁶ The miners do not work when it's raining as it is considered unsafe.

interviewed towards the end of the day as they were finishing work. However, the majority simply volunteered their time after a full and clear explanation that the interview would bring no direct benefit to them.

One of the phase one interviews was interrupted by the participant who said that she had to leave. One of the important phase two interviews with the Mining Qualifications Authority official was conducted by telephone and was interrupted. Despite assurances that questions would be answered over email they were not. Available information from the MQA website was used where possible but information gaps remain.

A translator was used for all but two of the phase one interviews. On the spot translation disrupts interview flow and is open to translator bias. While questions were standardised to minimise this problem the same could not be done for responses. Pilot interviews helped to check this process and to reassure the translators that full translation was necessary. However, isiZulu is circumlocutory and some phrases are difficult to conceptualise and translate into English.

My own identity was important to clarify and discuss with participants for a number of reasons and particularly for phase one. Firstly, it was clear that my visit and tour of each mine before interviews raised some attention. While I was greeted warmly by the miners some saw me as just another 'white face' there to make false promises. This was a finding in itself and clearly had implications for interview responses. Secondly, my tour guide of each site was known by the miners and due to identified mixed attitudes towards such guides it was important for me to disassociate myself from them. Finally, my white skin, middle class background and inability to speak more than a few words of isiZulu created an obvious distance between myself and the participants of the study. While the first two issues were relatively easy to overcome by clearly explaining in simple terms where I was from, what I was doing and why I had decided to come to their mine site, the race and class issues are much more complex. I tried my best to be warm and friendly and tell them a bit about myself. The accuracy of the income questions in Ndwedwe was especially reassuring that I was getting valid answers. A mixture of balanced, detailed

and sometimes contradictory views also indicated that responses were not simply a series of hard luck stories motivated by expectations of assistance.

Despite these limitations the study was charting unknown territory and the methods employed were chosen and considered important in providing necessary structure to the exploration and in producing the required depth of information.

CHAPTER 5

OVERVIEW OF MINE, MINE WORKERS AND HEALTH AND SAFETY CONDITIONS AND INTERVENTION

5.1 Introduction to mine sites and location

Ndwedwe

The Ndwedwe mine (see Figure 1) is located close to the centre of Ndwedwe village itself and approximately 1.5 km from the municipal offices. The existing mine has been active since at least the early 1990s but the interviews suggest that kaolin mining has been going on in the area for at least 20 to 30 years and probably much longer. The mine appears small from the surface but has a number of underground shafts.



Figure 1: Ndwedwe – view of kaolin mine from the road

Kaolin is a fine white China clay that is used widely in the manufacturing of paper, paints, cloth, soaps and many powdered and covering cosmetics. In its purest form it is also used to produce high quality ceramics. While no formal research seems to have been undertaken on the uses of the kaolin from the Ndwedwe mine, study participants

suggested that it is primarily purchased for use by traditional health practitioners¹⁷ and is also commonly used by women as a sunscreen.

The Ndwedwe Municipality is one of four local municipal structures within the Ilembe District Municipality¹⁸ and borders Durban Metropolitan Municipality to the South. The municipality was formed in 2001 and incorporates much of the former KwaZulu homeland (Ndwedwe Local Municipality 2002). The majority of the land remains under tribal authority. Ndwedwe is poor and underdeveloped. The provision of facilities and amenities and the extent of service provision throughout the area are strictly limited. Unemployment stands at 56% of a population just less than 170,000. Seventy nine percent of the households have an income of less than R1500 per month (Ibid.). Agriculture is the major employer followed by manufacturing and government services. The municipality suggests that there is very little formal employment within Ndwedwe (Ibid.).

Blaaubosch

Blaaubosch is located between the two large townships of Osizweni and Madadeni and is approximately 20km from the centre of Newcastle. Estimates given suggest that small scale informal mining for clay and coal has been going on in Blaubosch for between 40 and 80 years. The clay and coal is sourced and used by the miners to make bricks which are then sold to individual buyers for the informal construction and extension of houses. The mine is extremely large and sprawls across a vast area of the village itself (see Figure 2). The mine site area falls under the jurisdiction of Newcastle Municipality, one of four municipalities in Amajuba District Municipality.

The majority of households (approximately 85%) within the municipality have access to basic services (Newcastle Local Municipality 2005) but it was noted from observation

¹⁷ Informal discussions with a number of traditional health practitioners revealed that kaolin is commonly used for stomach complaints and for spiritual and healing purposes.

¹⁸ District and local municipalities are interdependent and involve a division of powers. A district council has municipal executive and legislative authority over a large area, its primary responsibility being district-wide planning and capacity-building. Within a district council's area are individual local councils which share their municipal authority with the district council under which they fall.

that Blaaubosch was considerably less developed in this regard than the neighbouring townships. The municipality unemployment rate was 54% in 2005 out of a population of 333, 000, and had increased by 14% since 1996 (Ibid.). Such a dramatic rise can be partly explained by the wide scale closure of formal mines in the region (Nel et al 2003). Employment is more diverse in Newcastle than in Ndwedwe and manufacturing (including mining) remains the biggest employer (Newcastle Local Municipality 2005). The municipality assumes that a significant portion of the ‘officially’ unemployed are working informally though this, and the economic contribution of the informal economy, has never been assessed. Fifty six percent of households earn a monthly income of R800 or less.



Figure 2: Blaaubosch – note the houses top right and the path running through the centre

5.2 Introduction to mine support strategies and stakeholders

The support strategies for both mines have a complex history and involve a number of stakeholders. The following provides a brief overview of support provided to date. This information simply serves to provide a reference framework for the discussion of findings that follows.

Ndwedwe

The participants involved in the support strategy for Ndwedwe project gave quite different versions of when and how the site was identified for assistance by the

Department of Minerals and Energy (DME). What is clear is that at some point between 1998 and 2001 a rock fall on site caused at least three worker fatalities. At this time one of the mine workers attended a local 'Catchment Forum' on water affairs and drew the Chairperson's attention to the poor working conditions on site. Following communication with the Chairperson, the newly formed Small Scale Mining (SSM) Directorate within the DME agreed to assist the miners¹⁹.

The aim of the support strategy is to formalise the kaolin mining activities for the benefit of the workers involved. Due to the precarious structure of the existing site, Mintek (a mining technology parastatal) and the Council for Geosciences (also a parastatal)²⁰ were appointed to investigate viable alternative sources of kaolin nearby. A site was identified approximately 30km from the existing mine and the intention was that the existing workers would move to work on the new site once the mining license was secured. For at least two years the SSM Directorate has been working through the complex and technical application process to secure the license. This license process was finalised during the field work for this study but due to a number of reasons that are further discussed, the miners are likely to continue working on the existing site for at least another 12 months.

At the same time Mintek was appointed to establish and manage a kaolin beneficiation plant in the form of a ceramics factory. A building was identified in Ndwedwe for the factory. Ten of the mine workers were trained by Mintek to make ceramic vases using moulds and a factory manager was appointed from the local community. Ndwedwe Ceramics was established as a formal enterprise in 2003. The DME's future goal is that Ndwedwe Ceramics will source its kaolin from the new legal mine site²¹.

Ticor South Africa (Ticor SA), a large formal mining company, became involved in the Ndwedwe project in 2002 through their corporate social responsibility representative and has provided mentorship and training to some of the Ndwedwe Ceramics personnel. The

¹⁹ The confusion over the start date of assistance arises because one of the study participants referred to previous pre-1998 attempts by the DME to support the miners that had failed. No further details could be given.

²⁰ Both service providers under the Small Scale Mining Development Framework.

²¹ It is not possible for the factory to source kaolin from the existing mine site due to its illegal status.

representative became interested in Ndwedwe through her involvement with the South African Women in Mining Association (SAWIMA) and was responsible for the establishment of the KZN SAWIMA branch that has had some minimal involvement at both the Ndwedwe and Blaaubosch sites in the form of organising worker meetings. SAWIMA was established in 1998 by the Minister for Minerals and Energy of the time, with the stated purpose to empower previously disadvantaged women in mining, with a particular focus on informal mining (R:205²²).

Blaaubosch

During the mid-1990s and following the change in governance of Blaaubosch that came about when the previous homeland administrations were disbanded, the DME began investigating the options for assisting the Blaaubosch miners. The KZN Regional DME Director at the time worked with the miners to establish the Intuthuko Blaaubosch Mining Trust, made up of workers from the site and established to facilitate the formation of a formal income generating enterprise. At the same time Mintek and the Council for Geosciences, and a number of other private consultants, were commissioned to undertake technical reviews of the mine and propose options for formalisation. In response to the recommendations the DME, some years later, formed a partnership with a formal mining and brick making company, Corobrik, to establish a formal brick making enterprise with the Blaaubosch Intuthuko Mining Trust at a new site. A number of other workers are to be employed to rehabilitate the existing mine site.

Newcastle local government became involved in the mine approximately five years ago due to the fact that both the structural safety of the local school was being threatened by the mine activities and because it became clear that the DME initiatives would fail to employ all of the Blaaubosch miners. The municipality secured funds from provincial government to design and establish a block making project to employ the vast majority of the remaining workers. It is local government's intention that following rehabilitation of

²² As explained in chapter 4, participant responses are referenced with an identifying letter for the participant and line number from the transcript.

the mine area it will also establish a number of small scale income generating projects on the land.

While the latest project launch date was June 2003, due to a number of complications and delays that will be explored in the findings, none of the above support initiatives has been practically implemented to date. The informal miners continue to work at the existing site.

The main stakeholders identified for the Ndwedwe and Blaaubosch mine are represented in Figures 3a and 3b respectively. It should be noted that while the list of stakeholders for each site included is more comprehensive than that provided in the summaries above, the figures still only represent those stakeholders identified through the primary research for this study and not all those that are likely to have been involved in each project over the years.

5.3 Overview of work and workers

Ndwedwe

The Ndwedwe mine is worked by between 115 and 250 women workers. There is only one male worker who works full time at the mine to dig and break the rock to expose the kaolin²³. The women workers are divided into two groups who take it in turns to spend one week mining and making the kaolin balls and the following week selling at the market in central Durban. The work is done independently or in groups and usually involves spending between one and two days at the mine to dig and bag the raw kaolin before paying for it to be transported to the processing site (often the workers' own homes) (see Figure 4). Each worker fills between four and ten 65kg bags of kaolin before leaving the mine. They pay the man R10 per bag for his work. The balls are made by crushing the kaolin into a pure fine powder and then mixing it with water. The balls are formed by hand and then laid out to dry in the sun before being transported to the market. The workers try to sell all the balls in Durban before returning to Ndwedwe but often have to leave any left over for sale the following week.

²³ There are one or two other men who work at the mine on occasions.

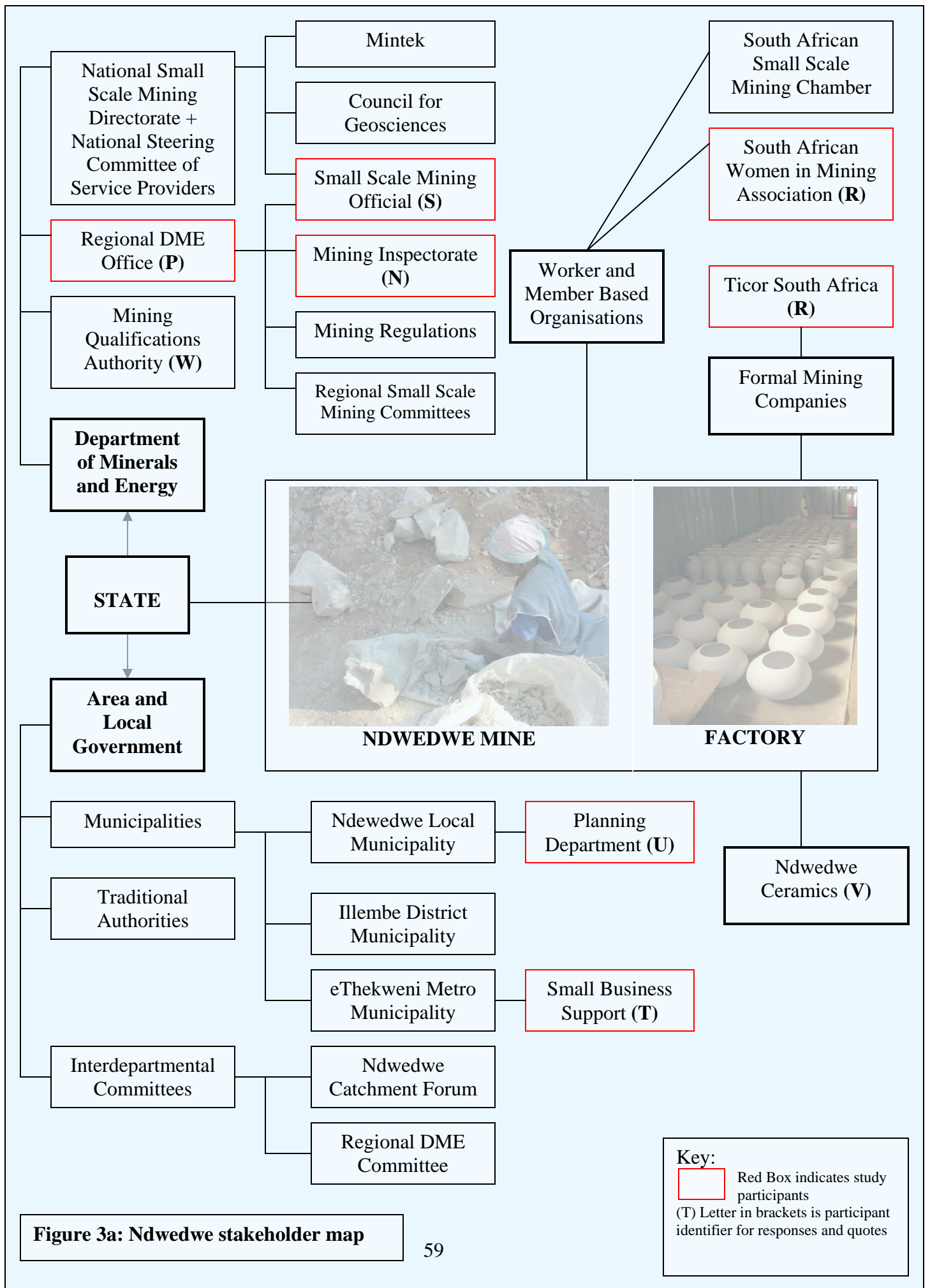


Figure 3a: Ndwedwe stakeholder map

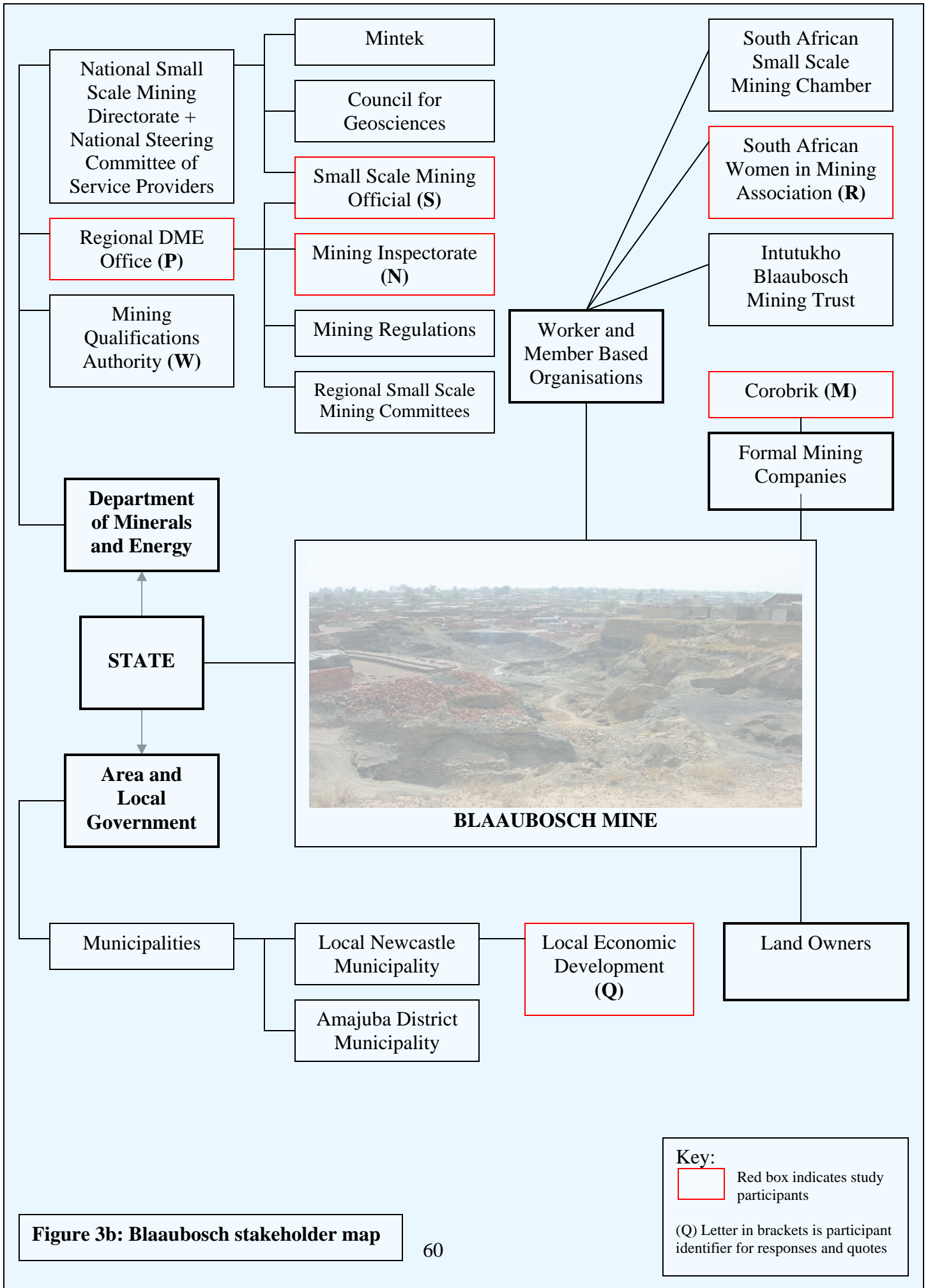


Figure 3b: Blaaubosch stakeholder map

The workers range from late teens to early 70s, with the majority aged around 30 years or older. The participants of this study ranged from 21 to 60 years old and had been mining for between two and 17 years. Education levels were generally low for the participants but ranged from Grade 1 to 12. Four of the six workers accurately estimated their income to be between R600 and R1600 per month²⁴. One of the women said she earned approximately R3200 per month but was more likely around R2000. The man said he usually earns R2000 per week. These earnings compare to a targeted minimum wage of R2000 per month in formal mining in South Africa.



Figure 4: Ndwedwe – two women processing kaolin balls at rented property

Blaaubosch

The Blaaubosch mine is currently being worked by between 500 and 600 miners. The bricks are made by digging and then mixing three or four different types of powdered rock, clay and coal. The coal is used both in the mixture for the bricks and to fire the bricks (see Figure 5). The main income source is from the sale of bricks but during the colder winter months some of the workers also sell the coal mined for heating purposes to supplement their income.

²⁴ Estimates were cross checked against data on numbers of balls produced and sold for each visit to the market as well as payment for kaolin and transport.

The workers appear to work in small groups (possibly family) or on their own. The area of the mine is divided between four different landowners and each miner has to pay rental to work there. Some of the workers appear to pay in cash while others pay with half the material they have mined or bricks they have made. Customers come to the site to buy the bricks. Sales seem extremely precarious and some of the workers go for long periods of time with no income. Some mentioned that competition has increased in recent years as more people have started mining.



Figure 5: Blaaubosch – view of the mine with brick oven on the top right

Men and women of all ages work the mine, though from observation and enquiries there were certainly very few young women and many older women present on site. The age distribution of the men appeared more even. The participants of this study were aged between 26 and 63. Education levels were evenly spread between Grade 3 and 11. Income estimates were extremely difficult for the workers to make, but those that were given ranged between R700 and R2000 per month²⁵. Most suggested that they earned much less than this. The Corobrick participant's own estimates after visiting the site were that each family production unit earned between R300 and R400 per month (M:375). The problem of inaccurate information on income has been widely identified in previous

²⁵ It was not clear whether such estimates accounted for the payments made to landowners or hired help.

research with workers being either unable or unwilling to calculate earnings (e.g. Skinner 2005).

5.4 Worker health and safety

Ndwedwe

When asked whether they suffered from specific health problems and whether such problems were work-related the six Ndwedwe participants said that they suffered from neck, shoulder, arm or wrist pain caused by the ‘hard’ work at the mine. The majority also suffered from back or hip problems due to digging and carrying heavy bags of kaolin, and from leg and foot pain from the mine work and from previous work-related injuries. Four said they suffered from chest pain or breathing difficulties caused by dust or from difficulties breathing while underground. Other reported problems included throat, nose or sinus problems caused by the dust, kidney problems due to dehydration while working, headaches due to working in the sun and work related stress or depression. Eye strain and skin problems were also suffered by a minority. One participant insisted that their work health was fine with the exception of general aches and pains. While interviewing and visiting the sites where the women work it was noted that many of the women were coughing. Those interviewed had limited knowledge of the work health status of other workers on the mine, with most saying that they didn’t know as they don’t discuss it.

Three had experienced accidental injuries in the last year, two of them within the last three weeks. The two recent injuries were damage to legs caused by falling rocks with one causing a serious limp that was still evident at the time of interview and the other still causing pain while working. The other accident occurred six to eight months previously, when a rock fall resulted in a broken arm, a head injury requiring stitches, and spine damage. This worker lost six months work due to the accident. She reported that her injuries affect her ability to work to such an extent that she now pays the male worker additional money to mine the kaolin for her and hires someone to help her make the kaolin balls.

Two of the participants reported injuries at work previous to the last year and were both involved in the same incident. In 1998 the shaft collapsed and trapped both participants inside for four hours. One of the workers broke her arm and damaged her back and had to stop working for 12 months. The other (who was also the participant who broke her arm six months ago) damaged her leg and had to stop working for four months.

When asked about injuries of other workers the majority reported that fractures, broken bones, bruising and other superficial wounds were the most common but it was not possible to get numbers or detailed information. The most common reported cause of injuries was falling rocks.

When asked if any worker had ever died due to an accident at work responses varied from three to six deaths caused by falling rocks and the collapsing of shafts. Most of these seem to have occurred in 2001 but there may have been more incidents before then.



Figure 6: Ndwedwe – mining kaolin underground. Note the normal clothing and lack of head protection

Working hours given ranged from 8 to 13 hours per day and most said they worked every day²⁶ unless they were ill or it was raining²⁷. Those who took a day off used this time for housework; for others, housework was done early in the morning before the mine work.

²⁶ It became clear later in the field work that though workers say they work everyday they often do not mean Sunday.

From observations made during site visits there was very little evidence of any personal protective equipment being used except an occasional pair of rubber boots. Some said they could not afford such equipment, whilst the one man said he could not use a helmet because it obstructs his vision and hearing. Most of the women work at the mine in bare feet so as not to spoil their shoes.



Figure 7: Ndwedwe – precarious passage down to shaft **Figure 8: Ndwedwe – crushing kaolin**

Workers were observed in shafts underground without any safety equipment and with rudimentary tools (see Figure 6). There was no light underground and the air was damp and stale. The surfaces were cold and damp. On one of my visits I was accompanied by a geologist who said that the rocks lining the passageway were precarious (see Figure 7). The picking, digging, breaking of rocks and kaolin (see Figure 8) and carrying of full 65kg bags on site were all extremely demanding activities and in that light the old age of some of the women was quite shocking. There was no toilet or clean water supply at the

²⁷ The male participant informed me that the mine is not considered safe when it is raining.

mine site and workers either used toilets in nearby houses or used nearby fields. There was no shelter from the sun or rain on or near to the site.

Participants were asked if their own children worked on site or helped them in any way with their mine or processing work. Two of the Ndwedwe participants said that their children helped them to make the kaolin balls. When asked if any other children worked at the mine only one said yes and that about five children were working.

Blaaubosch

The majority of the Blaaubosch workers said they suffered a large number of work health problems. Four experienced pain or problems in their throat, nose or sinuses, two of whom attributed this to the dust and one to the smoke. The same four also suffered from pain in the neck, shoulder, arm, wrist or hand due to picking and digging, carrying the wheelbarrow and mixing the mud; from back or hip pain caused by digging for long periods; pain or problems in the legs or feet from walking long distances, digging, standing for long periods while mixing and from standing in the water; and skin diseases or infections from exposure to contaminated water and the weather. Three participants said that they experienced breathing difficulties or lung pain due to the dust and smoke. Three also complained of eye strain or problems due to the dust. A smaller number of participants reported kidney problems due to working for long periods without water and high blood pressure attributed to working hard. Finally, four reported work related stress or depression often due to poor sales. One of the participants reported no problems other than general tiredness.

As at Ndwedwe some of the workers claimed no knowledge of the work health of others on the site because they didn't talk about it. However one said that they knew more than ten workers who suffered from chest problems and arthritis from their work and another said the sunlight caused problems for fellow workers. One participant said that he knew people had died due to chest problems from the dust and swollen feet from the water. Another said that about six workers had died due to kidney and bladder problems caused by the poisonous water on site. This information is anecdotal.

One participant had had one work injury in the last year where she fell and broke her arm and stopped working for three months. None of the other participant reported any injuries.

Reported injuries occurring to other workers were broken bones, amputations, crushing and head injuries. Two of the participants said that no one had injuries although it seemed they were only answering for their immediate work area. There was agreement amongst the workers that many people had died on the mine site over the years although some were uncertain exactly how many because they worked in different areas. Estimates of number of deaths that were given ranged from 10 to 15 since the early 1990s. One participant said that four had died in the last year and while I was visiting the site the key informant showed me a rock fall where he said one man had died the previous week. The major reported cause of both injuries and deaths was falling rocks and in this regard coal was considered the most dangerous ingredient to source. Some workers were also reported to have drowned on site while collecting the contaminated water.



Figure 9: Blaaubosch – workers digging coal as a group while standing in water, most of them are wearing rubber boots

Working hours ranged from 6 to 12 hours per day and while two took weekends off, two only rested on Sunday and two said they worked seven days. The latter were also working the longest hours per day.

From observations there was little evidence of any personal protective equipment being used although some of the workers were wearing rubber boots, especially those seen working while standing in water (see Figure 9). Many said this was because they couldn't afford the equipment and one said that the workers didn't understand because they were illiterate and there was no one to advise them. The conditions on site were dangerous and particularly so close to the high walls where rock falls were observed even during the field work. Many groups of workers were seen digging under precarious rocks to source coal and one group was seen planning to return to dig the site where one man was reported to have been buried by falling rocks the previous week. There were pools of stagnant water throughout the site (see Figure 10) where water is collected for processing purposes.



Figure 10: Blaaubosch – pools of contaminated water on site

The work was clearly physically demanding and again the large number of older women workers was quite shocking. Workers used rudimentary and hand made tools to dig the

different kinds of clay and coal and transported heavy loads via wheel barrow. Workers were also seen cooking and eating close to the coal face.

There was a government water tap on the top of the hill close to the school but many said they brought drinking water from home. There were no toilet facilities on site and workers said they returned home, used toilets in nearby homes or dug holes on the site.

Only one Blaaubosch participant said that her own children worked on site to collect bricks. However, all of the participants said that other children worked on site, especially after school and during holidays. Some said that children helped their parents by collecting coal and pushing wheel barrows, others said they come looking for work after school and at the weekends and carry and pack the bricks. These responses were confirmed by my own observations, particularly towards the end of the day as more children were seen arriving and working on site. Two boys of approximately 13 years of age were seen digging coal under one of the very dangerous high walls (see Figure 11). It was interesting that the key informant denied that any children work despite the fact that we had walked passed working children involved in the same activities described by the participants during the tour of the site.



Figure 11: Blaaubosch – boy aged approximately 13 digging coal after school

5.5 OHS and public health and safety

As discussed in the literature review, a number of studies have found that the nature and location of informal work often have substantial consequences for public health and safety. Interviews and field observations at both sites provided evidence of such a relationship for informal mining.

Threats to public health at Ndwedwe were presented by the fact that some of the mine shafts were actually underneath the road above and the key informant also told me that the mining occasionally causes rock falls onto the road below (see Figure 1).

All Ndwedwe participants said that there were non-working children being cared for and breast-fed on site. Three independently said that the children were left outside the shafts but two said that some women go into the shaft with children strapped to their backs because there is no one to care for them while they are working. Two young children were observed on site during one of my mine visits. Many felt that the children were not safe on site.



Figure 12: Blaaubosch – unstable house on edge of mine wall

The potential public health impact of the mine work at Blaaubosch was severe and this was largely due to its location. The mine incorporates and endangers the structural safety of many houses and the school (see Figures 12 and 13)²⁸.



Figure 13: Blaaubosch – school being undermined

The location also results in many community members and school children using the mine as a pathway on their journey to and from school and on their way to other parts of the village or to collect water (see Figure 14). All but one of the participants said there were non-working children on site and while two felt they were safe because the adults kept an eye out for them, others did not agree. One said that it was unsafe but they had no other option.

It was observed that much of the brick making process takes place within household grounds. The brick ovens are unprotected, dangerously hot and produce a lot of smoke. Their location therefore has potential health and safety consequences for household members.

²⁸ I was told by the Newcastle Municipality participant that the coal seam is likely to run directly beneath the school (Q:613).



Figure 14: Blaaubosch – child using mine as walkway

5.6 Health and safety knowledge and awareness

“It’s not safe here like at other companies. We don’t have money and power to improve the conditions” (Blaaubosch worker participant).

Ndwedwe

The male participant at Ndwedwe claimed to oversee the safety of the women workers by inspecting the site and removing rocks to avoid injuries. When cracks appear in the shafts he works quickly to fill the holes with soil and rocks. He did say however, that sometimes the rocks fall and injure people because he doesn’t have a machine to remove them all. Despite his key safety role, the man and all the female participants said that they had never received any health and safety training and said that no one had ever tried to show them in any other way how to improve their working conditions. No first aid training had been done. One woman indicated that the man was the only one who took care of them at the mine and another mentioned that some people had come to promise them some safety equipment which they had never received.

Most participants said that they would like to learn more about how to stay safe and healthy at work though they didn’t have a clear understanding of what they needed to

learn or who could provide the assistance. The majority said that they would like safety equipment and three wanted machinery to make the work easier and safer. One also said that it would be good to have doctors visit them at the mine. She said that it was better they visit them at the mine because all the workers come from different places (PC: 165-166). The male participant initially said that he did not require any training, although this was later tempered by his saying that he would like to know how to prevent accidents. When asked who should help, most said they didn't know. Two said that the government should help but could not say which department.

Blaaubosch

There was some evidence that a small number of the Blaaubosch miners had some safety knowledge or awareness. Two or three small groups of miners were seen removing the rocks and digging straight down to source the coal while others were digging into the high walls and creating precarious caves. I was told by the key informant that the former is considered a safer way to dig. The method is not fool proof however as it creates a high vertical wall of rock²⁹. One other participant said that he was very safety conscious and that before working he examines the surroundings to check that he is going to be safe. Despite these assertions of safety knowledge there was no evidence from the interviews that the workers had received any health and safety or first aid training. Two people mentioned that some people had come and promised to improve health and safety but that nothing had been implemented to date.

All of the participants suggested that personal protective equipment would help improve their health and safety and many felt that mechanisation in some areas would also make their job safer and easier. Three participants felt access should be blocked to the dangerous areas where injuries and deaths occur and one suggested a cleaner water supply was required for work purposes. In general however, there was limited understanding about what was required to improve different aspects of health and safety.

²⁹ According to the ILO guidelines on health and safety on small scale open cast mines (ILO 2001a), all material from the stripping of overburden should be removed to a safe distance from the working edge of the mine excavation and be shaped to a safe angle of repose (30 - 40 degrees from the horizontal).

This was with the exception of one man who asserted that trained responsible people to supervise and control the work activities were required.

When asked who they thought should help improve health and safety three people said government and one narrowed this down to the ward councillor, one felt that the landowner or the chairperson of the mining Trust should help and the others could not specify.

The workers at both sites were asked why they continued working on the mine given what they had said about accidents and ill-health caused by the work either to themselves or to others. All said that there were no other choices available to them. Lack of employment, poverty and the costs associated with raising children, grandchildren and orphans were the driving factors for people starting work and for continuing despite the hazards. The workers at Blaaubosch were asked if they felt the site should be closed for safety reasons. The sentiments of the majority are well captured in the following quote:

“...if it stops how will I survive, because there are children still at school...it’s painful because people get injuries, but it’s our source of income...” (P2: 313).

When asked how long they would continue working the vast majority of workers at both sites said that they would not be able to stop working until they died. Two of the older workers at Ndwedwe said that if they managed to get the pension for elderly people they would stop working, while two at Blaaubosch said that despite receiving the pension they had to continue working because of the extra children under their care.

5.7 OHS interventions

Due to the small number of workers interviewed their responses cannot be taken as firm evidence that no OHS assistance has been given; however, their lack of knowledge or experience of such might suggest that if any intervention had occurred it was not fully inclusive. This section presents the evidence of OHS interventions from the phase two interviews.

As noted, the DME's White Paper on Minerals and Mining Policy (1998) makes a commitment to provide guidance and advice to small scale miners in order to meet health and safety regulatory requirements. The DME's small scale mining (SSM) official assured that poor health and safety on informal mines was a major motivation for the general assistance provided (S:36). There was also widespread recognition amongst the phase two study participants of the vulnerability of informal miners to occupational injuries, and in some cases illness. However, this study found very little evidence of any substantive OHS promotion activities for existing informal miners in general or for those working at the case study sites.

For Ndwedwe the SSM official said that following notification in 1999 that fatalities had occurred, the DME, with assistance from the Department of Public Works and Mintek, brought in machinery to stabilise the land. This intervention was considered an interim strategy while attempting to locate an alternative site (S: 884-901) and in the mean time mining was allowed to continue.

The Ndwedwe Ceramics participant mentioned some ad hoc measures taken by a local Catchment Forum on water affairs that he himself chairs³⁰. The participant explained that himself and a colleague had visited the site a few times to give advice on digging techniques and that the colleague had raised funds to provide the workers with safety hats for their work (V:226-227). When I asked why I hadn't seen the hats on site, the participant said that the workers didn't like wearing them and they had a '*...hard headed attitude...*' (V:280). There was no evidence from the worker interviews that this donation had taken place.

The responses suggest that some intermittent visits and briefings from DME health and safety officials had taken place in the past. The Ndwedwe Ceramics participant explained that there was a constant problem of worker attendance at such visits because half of the

³⁰ The Ndwedwe Ceramics participant is involved in the project in his capacity as both a community member and as a member of provincial government. In his capacity as an Environmental and Water Affairs officer he chairs the Catchment Forum meetings in which, as mentioned, the mine workers first raised attention to their hazardous working conditions.

workers were always at the market (V:248-250). When asked to describe the meetings he said:

“...it wasn't really workshops...they haven't done any workshops, I don't know whether I can say it was just a briefing or awareness...” (V:386-387).

According to the same participant no such interventions had taken place in recent years. This information was supported by the Ticor SA participant who said as far as she was aware, apart from the odd interaction, there had been no health and safety promotion to date. The same participant added that Mintek had failed to even provide health and safety training for the workers at the Ndwedwe ceramics factory that was under their direct management (L:531-535).

At the Blaaubosch site the SSM official, Mining Inspector and Newcastle Municipality participant all discussed varying versions of an intended interim health and safety plan; all made clear that it had not been implemented. The Mining Inspector's explanation was that in 2002 he proposed that access to the dangerous high walls be restricted by blasting the area and erecting security fencing. Despite consultation with the local magistrate and the police, his plan was apparently rejected by the DME due to lack of funds. The DME's response was that they wanted to do a complete rehabilitation of the area and that this would occur by the following year when the people would be moved off the site. The Mining Inspector explained that three years had passed and three fatalities had occurred and the people were still on site (N:435-461).

The Corobrik participant said that he thought the DME had managed some initiatives but as to what these were, he wasn't sure (M:457).

For both sites the only other direct OHS intervention to date was from some representatives of the Council for Geosciences who were requested by the DME to visit each site some years ago to advise the workers on safe practice. One of the key informants was involved and explained that the visits were one-off and had limited impact. From the key informant's perspective, failure at Ndwedwe could be attributed to

the language barriers between himself and the workers and that their existing methods were too 'deeply entrenched' (Y:73). He said that the visit to Blaaubosch had some limited impact on digging techniques (Y:98).

At a more general level the Mining Inspector described that his role is to visit informal mine sites where he walks round and 'politely' identifies dangerous activities and advises the workers on safe practice. Such visits normally occur a maximum of once a year (N:48-53). When asked whether he sees a change in practice in subsequent visits to the same sites he described his impact as very limited:

"...some people take the advice...some people just dig and say we haven't got time for this..." (N:113-114).

Some references were made to more formal training for small scale miners. The Mining Qualifications Authority (MQA) official said that to date the MQA had conducted one workshop in each province and trained a total of 1600 formal and informal small scale miners in a number of modules, including one on generic health and safety. Informal mines with less than 50 employees and an annual turnover of less than R100 million are able to benefit from such training free of charge. The official said that the idea was to train representatives who would then train fellow workers. The DME identified five people from Blaaubosch to attend the KZN workshop. It seems the Ndwedwe miners were not included. When asked if any health and safety training had been conducted at the Ndwedwe or Blaaubosch sites, the MQA official said:

"...so far no. The problem is that they are very different, each site comes with its own challenges. That's why we decided to do a generic course..." (W:64-65).

5.8 Discussion

The responses from the phase one interviews clearly indicate that the workers suffer substantial health and safety problems. The amount and severity of the injuries reported are a concern, as are the reports of fatalities. Some of the injuries resulted in substantial lost work time and a reduction in already low incomes. The high number experiencing musculoskeletal pain and health problems such as chest pain, breathing difficulties and

skin problems suggest that the mine work is likely to have a significant impact on the well-being and quality of life of the workers. The information indicates that any effective OHS intervention would need to pay substantial attention to work organisation, ergonomics and health, in addition to safety. The long hours worked and the additional burdens of both housework and child care are all likely to further contribute to the workers' vulnerability. The location and nature of the work, as well as the involvement or presence of children at the work site, present substantial public health and safety challenges.

The workers appear to have a basic, if not scientific, understanding of the relationship between work and their health and many wanted assistance to improve conditions and make their work easier. Few had specific suggestions of who should help but most felt that "government" should play a role. Poverty was perceived by the workers as a constraint both to improving their working conditions and to stopping work despite the dangerous conditions.

While the worker interviews revealed no evidence of any health and safety intervention, phase two interviews suggested that the OHS activities that have taken place have been limited and ad hoc. The structural safety intervention at Ndwedwe was important but narrow in its consideration of what was needed to improve OHS, as was the intended, but never implemented interim health and safety plan at Blaaubosch. There was no evidence of activities to specifically promote occupational health at either site. The reach of the training from the MQA is questionable given the numbers of workers taken from each mine and that health and safety is just one of many modules covered in the workshops. From the limited information given on the workshops their appropriateness for informal workers must also be questioned. Given the likely low literacy levels amongst informal miners the high number of participants per workshop (approximately 180) is a concern; the mix of informal and formal miners within each workshop may not have catered for the specific needs of each; and the organisation of the training in venues away from the mining site is likely to limit attendance of informal miners given that lost work time results in lost income. Further, the funding for future training is currently uncertain

(S:483). Finally, there was no evidence from the phase one interviews that the ‘train to train’ approach had successfully reached the participants of this study.

CHAPTER 6

CONSTRAINTS TO AND OPPORTUNITIES FOR EXTENDING OHS TO INFORMAL SMALL SCALE MINERS

The lack of practical OHS activities at either site is clear. The reasons are more complex and will be presented here at a number of different levels. Some constraints to extending OHS activities to informal miners relating to mine location as well as the characteristics of workers and their work were raised by the majority of participants, or were identified from observation, and are presented first. Following this is a deeper exploration of the reasons for minimal intervention to date (as well as constraints to and opportunities for intervention in the future) arising from the attitude, approaches and contexts of the various stakeholders. The position of conventional and then non-conventional OHS stakeholders are discussed.

6.1 Constraints related to informal miners and the nature of their work

6.1.2 Mine location

The case-study sites demonstrate that mine location can be an important obstacle to health and safety improvements. The Mining Inspector and MQA participant explained that mine health and safety is largely location specific because risks vary according to the mining methods, structure and mineral resources at each site. According to these participants effective OHS intervention then should also be site specific. The intended moves from both sites therefore raised questions over whether any resources invested in health and safety for the existing site would be wasted. This seemed to be the view of Corobrik for example, who are only willing to start training once the site and equipment at the new location are ready (W:22).

The particularities of the Ndwedwe and Blaaubosch site locations also present health and safety challenges that are difficult to overcome. The stability of the Ndwedwe site is threatened by the traffic and construction on the road above (U:138). For Blaaubosch the

coal seam appears to run underneath the school building which again threatens stability (Q:611-619).

6.1.3 Poverty and survival

A number of participants felt that poverty and the need for survival was ironically a major driving force behind workers taking higher risks on the mine and presented an obstacle to achieving safer working practice.

The Tidor SA participant explained that during a community meeting with some informal coal miners in KZN the workers explained that mining for them was about survival and that:

“...if they didn’t do what they do they would in any case die of hunger. That’s what they told us, so they take the risk. And that’s why it’s difficult to change perceptions...” (N:90-106).

The Mining Inspector also explained that safe practice, such as removing the soil and rocks from above to access mineral resources beneath (as opposed to tunnelling in from the bottom), are often much more time consuming and that ‘poverty’ and ‘desperation’ lead the workers to take dangerous short cuts (N:96).

The key informant at Ndwedwe added that high unemployment in the area places an even greater pressure on the women workers to earn and that:

“...it’s not that they don’t care about safety, they are just hungry, they have no choice...” (X:111)

The low income of the workers was also perceived by a number of participants as a major constraint given the high cost of safety and protective items and particularly given that the DME does “...not have the mandate to buy the necessary equipment...” (S:369-372). Indeed the Mining Inspector felt that training and inspection was in many ways relatively futile given that it would often involve delivering advice to purchase equipment that the workers could not afford (N:599-606).

6.1.4 Work organisation

The ILO handbook on safety and health in small scale mines opens with the statement that good standards of health and safety can only be achieved if ‘all work together, effectively, as a team’ (ILO 2001). Individualistic work practice and attitudes and the common turnover of workers on informal mines are barriers to such team work and are perceived factors constraining effective extension of OHS to informal miners amongst the participants of this study.

The fact that the miners work as individuals or in small groups was an observation made during the field visits and raised the question that if one worker wanted to mine safely how she might achieve this if other workers did not do the same.

The constant change of workers on many informal mines seriously prohibits effective OHS intervention according to the Mining Inspector because it is not possible to ensure that all on site have been trained:

“...you can take these people and train them, spend so much, they go back. Six months later someone has lost his job and thinks I must join these gentlemen here. So what do you do? You’ve got to train this person. It becomes an ongoing, ambiguous kind of thing...” (N:741-745).

The inspector did note however that this problem was less severe on sites such as Ndwedwe and Blaaubosch where the worker population was more stable.

An individualistic attitude amongst informal miners was considered a barrier to forming groups necessary for training and formalisation by a few of the participants. The small scale mining (SSM) official gave an example of a project to assist gold miners that had failed in Mpumalanga due to what he conceived as an ‘individualistic instinct’ that meant people didn’t want to be part of a bigger structure they felt didn’t belong to them (S:228-230). The Council for Geosciences informant also argued that the workers:

“...don’t have belief in these projects. Each wants to work by themselves. They don’t trust each other...” (Y:38).

This perception of individualism is not straightforward however and the examples given by the participants seem to confuse problems that are more likely associated with a lack of worker ownership of support initiatives (discussed further later) than with the unwavering individualistic attitude that is implied.

6.1.5 Limitations to learning and unwillingness to learn

Some of the participants suggested that there was an unwillingness to learn or to take advice amongst the workers. For the Ticor SA participant this was due to the fact that the miners had already worked for several years using only their own initiative (R:93-95). The Ndwedwe Ceramics Trust member talked about a ‘hard headed attitude’ towards safety clothing and PPE (V:278-280), and in her experience of managing the workers in Ndwedwe ceramics, one of the key informants also said that she had difficulty convincing the workers to wear their PPE:

“...you have to repeat and repeat. They don’t believe you. It’s very difficult. When you turn your back they remove the protective equipment...” (X:92)

Inability to learn due to low education levels was also identified as a problem by the Ticor SA participant who has provided several training sessions to a small number of the Ndwedwe Ceramics staff. However, the Corobrik participant felt this didn’t apply to OHS training which from his experience could be effectively delivered if conducted in the appropriate language, and especially if the workers have the incentive of enterprise ownership.

Accumulated knowledge amongst the miners after years of work experience was on the other hand also blamed for dangerous work practice and the unwillingness to follow safety advice. The SSM official explained that:

“...the reason why they go where it’s most dangerous is often because it’s the most profitable resource, it makes better sense...” (S:369-372).

6.2 The reach of conventional OHS mechanisms

The ability and capacity of conventional OHS mechanisms to protect informal workers was a central topic of concern for the study. An analysis of such mechanisms, considered here to be the mine health and safety systems within the DME, revealed that constraints to the provision of OHS protection extend far beyond those related to the miners and the nature of their work, to include problems of low priority and conservatism within the DME itself.

6.2.1 Low OHS priority for small scale mining within the DME

The interviews suggest that a lack of priority given to health and safety issues within the broader small scale mining assistance strategy, as well as a lack of attention to informal mining within the Mining Inspectorate, largely explain the limited practical OHS activities implemented by the DME at either site. The absence of a specific policy to guide OHS interventions for informal mining is a strong indicator of this and, according to the Mining Inspector, contributes to what he describes as an ad hoc and ineffective OHS approach (N:55-58). The SSM official also indicated that with no policy, bureaucratic processes become an impediment to any desired OHS intervention (S:1015).

The lack of dedicated human and financial resources for OHS activities are two more indicators of this low priority. There is currently only one SSM officer at each regional office and only one Mining Inspector responsible for small scale mining³¹ within the KZN office. Further, the inspector is also a full-time formal mine inspector:

“...You see I am not just dedicated to informal mining, I think that’s a problem. I’ve got files, I’ve got enquiries that I need to do... I’ve got a certain number of kilometres that I can travel per month. I cannot exceed that, and you find those kilometres are actually taken up by the formal work that I need to do as an inspector. So I go there once, I see these guys do this and that, and then I’m gone for 6, 7, 8, 9 months you know...” (N: 399-406).

³¹ The Mining Inspector is officially responsible for ‘small scale mining’ but clarified that his role is to focus on informal mining.

Due to personal and professional commitments the Mining Inspector had not visited either case-study site for over a year (N:515-520). The Inspector also indicated that within the Mining Inspectorate his work on formal mines is consistently prioritised above that for informal mines:

“...so at the moment it’s just an ad hoc thing...if I were to tell my boss I’m going to this informal mine he says “ahhh no, no, no, where’s my report? You go there next week, I need that report...” (N:476-478).

Funding constraints were identified by both the Mining Inspector and the SSM official. The former expressed his frustration that there had been no significant OHS achievements because even if he designs a strategy, such as the interim health and safety plan for Blaaubosch, there is no budget set aside for implementation or even for regular inspection visits (N:393-431). The SSM official added that there were no resources to purchase necessary safety equipment for informal miners which they are unable to afford themselves (S:522-528).

The lack of priority given to OHS not only limits what can be achieved but also appears to be threatening to undermine the apparent commitment of the Mining Inspector. Resource constraints and the absence of any policy guidance mean that after each site visit the inspector simply writes a report that is then filed:

“...I hate doing something that you don’t see the result, that’s why I am concentrating on the formal things because on this I can work hard. I’ve got reports and reports on small scale mining, how can I just write reports? I’m not a journalist here. I need to see results... We are not solving the problem here...if someone can just open their eyes and actually show them that people are dying here and one life is one life too many...” (N:486-492).

Another indicator of low OHS priority was the limited interaction between the SSM official and the SSM Mining Inspector indicated by the official’s lack of knowledge regarding the structures and procedures of the KZN Mining Inspectorate. He assumed

that all the inspectors had SSM duties and, when informed otherwise, assumed that the one member of staff responsible was a full-time SSM inspector (S:589-591).

When asked, both representatives said that there was no discussion space for strategising OHS for informal miners within the DME (N:614; S:405). Importantly the SSM official also explained that due to a lack of human resources there was little time to investigate alternative OHS strategies (S:1044) and as a result added that:

“...we tend to actually follow the legislation to the letter and once it’s been prescribed by legislation we don’t apply our minds to looking at other innovative methods...we just deal with it as a soldier deals with whatever instruction that they’ve been given by their superiors...” (S:1048-1052).

The lack of worker participation and communication in the process (discussed further in chapter 7) also indicates that no space has been made within current strategies to facilitate workers to discuss and diagnose their own health and safety problems and to develop their own remedial strategies.

6.2.2 Narrow and inflexible conceptualisation of OHS

The responses suggest that one of the most important and underlying reasons for the low priority given to OHS, and therefore the inadequate extension of existing OHS mechanisms to informal miners, is that within the DME there is a very clear technocratic and legal conceptualisation of OHS that can only be applied through formal employment structures. Indeed, the interview with the Mining Inspector demonstrated an almost complete inability to separate health and safety from the Mine Health and Safety Act. Health and safety is therefore about enforcing a set of rules and regulations.

Numerous references to ‘enforcement’, ‘compliance’ and ‘monitoring’ run through both of the DME participants’ interviews in reference to OHS. The major obstacle to OHS achievements on either case-study site according to the Mining Inspector is the inability to enforce any advice given (N:81-87). According to the SSM official the chief challenge to OHS is raising awareness amongst informal miners that they have to comply and then

ensuring compliance (S: 512-519). Occupational health especially appears to be conceptualised as a system more oriented to resource-intensive monitoring and identifying culpability than health promotion activities, and the inspector cannot therefore conceive of extending such measures to informal miners (N:336-361).

The Mining Inspector also seemed to find it difficult to consider less resource heavy technical and personal protective equipment alternatives to improve OHS (N:600). He added that it would be difficult to donate such equipment because there was no way of 'monitoring' its usage (N:331).

The inability to think about any kind of alternative OHS strategies for informal miners was also evident for both DME participants. The Mining Inspector's response to a question on this subject was that whatever legislation you develop would be difficult to enforce (N:527-530). The only alternative conceived by the SSM official was to make existing requirements less onerous for informal miners (S:495-509).

The conceptualisation of OHS as the enforcement of OHS legislation means that formalisation is the only considered solution for extending OHS to informal workers. This is explicit in the following quote from the Mining Inspector:

"...Once they are formalised it is only then the enforcement, the monitoring the compliance that is required by mine health and safety, it just becomes easier. You know you've got a formal mine, we as the government we've got facilities and bodies like the MQA, where these people can be trained..." (N:530-533).

Indeed, it was made clear that the only formal role for the Mining Inspector in the SSM support strategy was to conduct a site inspection to assess what **would** be required to uphold OHS **once** the operation was formalised (S:310-321).

6.3 Non-conventional OHS stakeholders

Another major objective of the study was to scope out all stakeholders who do, or might conceivably get involved in extending OHS to the informal miners at each site. Due to the lack of actual implementation the discussion on potential OHS stakeholders is largely guided by an exploration of the future potential for involvement within government, the private sector and through worker and sector organisations.

6.3.1 Local Government

The important role of local government in relation to informal workers in South Africa, to the DME's small scale mining support strategy and to OHS, were all highlighted in Chapter 3. In order to explore the potential OHS contributions by local government stakeholders it is important to first assess current levels of general involvement and constraints faced by such actors in relation to each project.

Newcastle Municipality was invited into the Blaaubosch project process by the DME approximately five years ago in order to develop and secure funding for alternative economic ventures for the miners. By contrast Ndwedwe Municipality and Illembe District Municipality have had no real involvement in the Ndwedwe project to date³². eThekweni Municipality contributed to the Ndwedwe project in the late 1990s due to the Small Business Support Department's interest in the kaolin street traders, but their involvement ceased when Mintek took over the project (T:46-53).

While both local municipality participants said they wanted to be more involved in the respective projects, a number of problems were identified that limited such participation.

³² Despite numerous contacts made with members of both Ndwedwe Municipality and Illembe District Municipality, none could confidently direct me to an appropriate person to speak to. Contacts at the district level responded that it was a 'local' issue, and the Ndwedwe Municipal Manager told me to discuss the matter with the Technical Services Department. No one within the latter department had had any involvement in the project.

The young age of the current local governance structures³³ for the areas in which each site is located have raised particular limitations in relation to project involvement. According to the Newcastle participant the historical absence of town planning in the Blaaubosch area, in which different land areas are allocated for different purposes, has limited municipality input guided by existing laws and frameworks (Q:873-875). It was further explained that because the mine is located on private land the municipality is not actually legally permitted to allocate any of its own funds to the project (Q:22). The same participant said that in any case, redressing the severe backlog in the provision of infrastructure and services was currently taking priority (Q:879).

The new municipality in Ndwedwe, like many newly formed rural municipalities, clearly lacks both financial and human resources (R:398; U:46). In contrast to Blaaubosch the kaolin mine is mentioned in the Ndwedwe Integrated Development Plan (IDP)³⁴ (Ndwedwe Local Municipality 2002) with a specific assertion that its potential contribution in terms of job creation and economic development is not known and should be investigated and that, 'at the very least, the working conditions of the already existing miners receive attention'. However, the IDP was without a manager until only eight months ago and continues to lack sufficient funding (U:40-44). In addition the first manager for Economic Development at Ndwedwe was only appointed during the field work period for this study.

Both local municipalities also lacked support from the district level. For Newcastle this was explicitly expressed by the participant who felt that Amajuba District Municipality had a pivotal role to play in the project but had refused because they felt it was a local municipal responsibility (Q:366). The lack of support from Illembe District Municipality was clear from their lack of knowledge of the Ndwedwe project. Further, questions

³³ Both sites are in essentially rural locations that were previously incorporated in to the apartheid designed 'Homeland' areas. In the waves of governance reforms since the 1994 democratic elections Blaaubosch was incorporated into the existing Newcastle Municipality, while a new municipality was formed in 2001 to govern Ndwedwe and surrounding areas.

³⁴ Local municipalities in South Africa are required to produce five year Integrated Development Plans in consultation with forums and stakeholders to provide an overall framework for development. The municipality is responsible for co-ordinating the work of local and other spheres of government towards the goals of the plan in order to improve the quality of life for all the people living in an area.

remain regarding the level of project interest and motivation at the municipal level. The Amajuba Forum³⁵, of which Newcastle Municipality is a part, made the unequivocal decision to exclude mining from its economic development strategy based on the wide scale collapse of the coal industry and perceptions of resource depletion (Q:860-871). The decision is a concern given the large number of abandoned mines in the area and the consequent potential growth of informal mining. The motivation of Newcastle Municipal officials is also in question given their inappropriate efforts to seek membership of the Blaaubosch Mining Trust (to be discussed in Chapter 7). The commitment of Ndwedwe Municipality was questioned by two of the participants who said their repeated attempts to involve officials in the project had failed.

Finally, all local government participants said that their involvement had been restricted due to a lack of communication from the DME. On the other hand, the DME participants described very mixed levels of responsiveness to informal mining amongst local governments more generally, with some contacting the DME for formalisation assistance (N:265) while others failed to even acknowledge or report fatalities (N:258). This maybe a reflection on the local governments themselves but it also seems clear that there is no information or framework in place to guide their responses.

There was some recognition of the interdependence of OHS with local government responsibilities. Both local municipality participants said that they felt the health and safety of informal workers such as the miners was important. For Newcastle the participant went further to say that worker health and safety was positive for the town as a whole in terms of attracting investment and promoting economic development (Q:753). Both also made reference to the fact that the promotion of health and safety was a mandated responsibility for local government. However, doubts were raised regarding the extent to which this practically applied to the working conditions of the informal miners.

³⁵ A Forum for economic development made up of representatives from each of the four local municipalities within Amajuba District

The Newcastle participant raised a number of constraints to OHS intervention including that while the municipal health and safety personnel were equipped with bylaws to “...deal with hazards related to things like broken bricks and glass, there is no Act that deals with illegal mines...” (Q:519). He also explained that the Environmental Health department was ‘seriously under funded’ with only two out of the 15 employment positions currently filled (Q:724). The reason given for this was that:

“...provincial government is busy with key performance areas and health and safety is number five on the list. They have to start looking at other areas first before they can even go there...” (Q:753).

During the course of the interview the Newcastle participant expressed increasing resolve that worker health and safety was not a municipal responsibility. This was despite a clearly expressed understanding that there had been fatalities on site since the municipality became involved, and that the mine was located in a residential area and threatened the lives and health of residents (Q:110-112).

In contrast the Ndwedwe Local Municipality participant’s response when asked if the mine presented any challenges to local government was that there were clear safety issues and that it was the municipality’s responsibility “...to make sure that safety issues are taken into account...” (U:151). However, a deeper exploration into the responsibility issue revealed a lack of knowledge and confidence as to whom exactly would take on the role or who would take responsibility for communicating the problem to others. The Ndwedwe participant also strongly expressed that OHS naturally followed formalisation but, in response to information on accidents that had occurred while waiting for formalisation, he suggested that the Disaster Management Unit at district level could play an interim role. (U:327). Again, there was a lack of conviction in this suggestion and about who would communicate the problem. The participant was frank that there was no straightforward answer to the OHS challenges.

The Newcastle, Ndwedwe and eThekweni participants were clearly pushed out of their comfort zones by questions regarding worker health and safety. Where difficult questions

were raised responses were quickly manipulated back into more familiar areas such as marketing and productivity assistance. More honest responses suggested that municipalities were simply better placed to rather intervene in business promotion activities. As discussions progressed it became more apparent that all local government participants felt OHS for informal miners was primarily and appropriately the responsibility of the DME.

The SSM official's perspective on local government's OHS role revealed an interesting notion that while municipalities do get involved on environmental issues because they are 'closest' to the project and therefore the 'first to know' if there are any pollution or other problems, the same does not apply to human health and safety (S:351-354). His response later indicated that while procedures are in place to respond to environmental issues there is no such guidance for OHS.

6.3.2 Other government stakeholders

Questions were asked and opportunities given within interviews to discuss the possible OHS role of other stakeholders not currently involved in the projects. Again many of the participants, particularly those outside of the DME, found these questions very difficult to answer. Interestingly those departments that were sometimes independently identified as possible stakeholders were those considered in the framework for this study, such as the Department of Health (DoH) and Department of Labour (DoL). Few other stakeholders were identified as possibilities.

Perspectives on the potential role for the DoH varied. While those within the DME made the link between citizen and worker health and felt that the DoH had a clear role to play in monitoring and treating occupational health problems such as silicosis and TB (N:633; S:605), local government participants felt that such an extension of health services was unrealistic and was in any case not a mandated responsibility (Q:594; U:301). The Tigor SA participant said that it would be useful to find out what the DoH had to offer indirectly such as AIDS awareness programmes, but that any direct role in OHS would be beyond their current capacity (R:591).

Many of the participants independently voiced a potential role for Environmental Health. However these suggestions seemed to be based more on the knowledge of Environmental Health's mandated general responsibilities for health and safety rather than a confidence that they could appropriately meet workers' OHS needs. The eThekweni participant was perhaps the only exception as her suggestion was clearly grounded in her experience of eThekweni Environmental Health, who have implemented a health and safety training programme for street vendors in central Durban (T:156-158). One participant did also mention that Environmental Health had the advantage of being a local and easily contactable OHS player which could help overcome the weaknesses of the DME's current approach (V:515).

Only one participant independently suggested the DoL. The SSM official felt that the DoL should "*...play more of a role as the custodians of health and safety...*" and added that "*...they have inspectors, they have money, they could donate safety features. I think with their help we will be able to overcome many problems...*" (S:543-544). Other prompted responses were less clear about what role the DoL could play although one participant felt that they could work to identify an OHS trainer (V:496).

As found for the local government participants, many of the responses regarding other potential stakeholders often veered back to a reaffirmation that given their experience, technical expertise and mine health and safety personnel, the DME was the most obvious and appropriate OHS player for informal miners.

"...it is DME's responsibility, it's a national department...and they do have all the relevant people, health officers...they must really help to promote health and safety..." (V:585-588).

The suggested institutional and disciplinary isolation of OHS from the interviews was further indicated by the failure of area based cross-departmental teams and committees to address OHS challenges. The SSM official explained that through their Regional Committees the DME involves "*...all government departments that have to do with the*

area of land where the mine is located... ” (S:129). However, it was clearly indicated that their involvement relates only to matters to do with the environment and to surface and mineral rights (S:138). The locally based Catchment Forum in Ndwedwe has representatives from various government departments but was also evidently unable to respond to the continuing health and safety concerns raised by the miners themselves in a recent meeting (U:90).

6.3.3 Formal mining companies

The high level involvement of formal mining companies in the support strategies for the two informal mine sites had not been anticipated at the outset of this study and is clearly related to the social and labour plan initiative from the DME which commits mining companies to make contributions to local economic development and social upliftment in the areas in which they operate.

To date Corobrik has only been involved at the negotiation level but is committed to establishing the proposed formal Blaaubosch brick-making enterprise with finance from the DME, and also to providing necessary skills training and equipment. Corobrik also has a vested interest in the venture as it will own 25.1% of the business. Ticor SA on the other hand has already provided some training and mentorship to a small number of the Ndwedwe Ceramics employees and intends to continue and expand on this. Importantly, the Ticor SA participant will also play a significant role in the planning and guidance of the proposed economic venture, but will not have a financial stake in it.

It is clear from the data that for both case-studies the private corporate stakeholder will play the primary health and safety role in the proposed future ventures in terms of training (with allocated funding from the MQA) and establishing any necessary OHS structures and responsibilities. The attitude of both company representatives is encouraging. The Corobrik participant talked independently about the many OHS training needs to be covered and for which a budget has been allocated (M:471-513). The Ticor SA participant seemed to have a good understanding of the basic education requirements of the mine workers at Ndwedwe and is enthusiastic to implement a similar

but adapted health and safety strategy currently employed by Ticor SA itself (R:319-322) in partnership with the Mining Inspectorate. She was confident that Ticor SA will provide money for safety equipment (R:472).

While the mining companies could certainly be described as alternative OHS stakeholders for informal miners, and indeed appear to hold the greatest promise for improving working conditions in the future, their OHS input to date has been limited or non-existent. Despite the Ticor SA participant's attitude that some OHS should have already been extended to the miners, the OHS involvement of the company itself seems to have been at least partly limited by its responsibilities to a large number of other projects. Corobrik's OHS input appears to have been largely constrained by the attitude that formalisation is first required before health and safety can be improved.

6.3.4 Traditional authorities and landowners

While representatives from traditional authorities did not participate in this study they were found to have a significant role in at least the Ndwedwe case. The Inkosi (traditional leader) where the new mine is to be located willingly permitted the use of her land in return for some employment positions for community members. Two of the participants involved in other small scale mining projects also stressed the importance of granting shares to traditional authorities in proposed ventures to guarantee their support and assistance (R:425; P:148). Traditional authorities were not specifically identified by the participants as potential OHS stakeholders however. Indeed one participant felt that they would be unwilling to intervene due to a perceived threat of lost livelihoods as a result of increased labour regulation (P:179).

The four landowners of the Blaaubosch mine play an important role in terms of monitoring and charging for mineral extraction from their land. The Blaaubosch key informant suggested that at least one of the landowners makes infrequent checks on the stability of the land structure where workers operate. The landowner-worker relationships appeared complex in terms of land access and governance, worker hierarchies and the rates and form of payment for land rental and mineral extraction. While these issues were

beyond the scope of this study, it seems clear that where mines are located on private land where the applicability of both local government and DME regulations may be limited, landowners may be important OHS stakeholders and their potential role should be further explored.

6.3.5 Small scale mining and worker organisations

As discussed in the literature, member based worker organisations have a potentially important role to play in providing and/or lobbying for access to OHS. The Intuthuko Blaaubosch Mining Trust was the most significant worker organisation identified in the study and was established in the mid to late 1990s with assistance from the DME³⁶. The Chairperson of the Trust was aware of unsafe practice and said that some of the Trust members had formed groups to mine collectively and that they were employing the safer practice of digging down rather than through the rock to access the coal. One such group is shown in Figure 13. However, as already noted, there was no evidence from those interviewed that membership of the Trust had provided access to OHS assistance.

While the OHS role of the Intuthuko Trust was limited, there was in fact minimal evidence of any other kind of worker organisation on either site at all. In this regard the performance of SAWIMA, which could have potential for ensuring the representation and participation of workers at both mines, has been disappointing. The KZN SAWIMA branch was opened in 2002 and the ceremony included women miners from Blaaubosch and Ndwedwe (V:833). Despite evidence of at least one further SAWIMA meeting at both mines, and even some workers paying membership fees, SAWIMA have been largely absent from the planning of both projects³⁷. The Ticor SA participant, as the previous chairperson of the KZN SAWIMA branch, explained that SAWIMA's members are mainly business women who she feels are often motivated by 'self-gain' (R:223). The SSM official said that SAWIMA was more oriented towards exploiting new business opportunities rather than existing informal mines (S:841).

³⁶ The formation and limitations of this Trust and other attempts at worker organisation are further discussed in chapter 7.

³⁷ The Ticor SA participant is a key member of SAWIMA but heavily criticized SAWIMA's current practice. She explained that her participation at Ndwedwe is not currently supported by the SAWIMA structures.

The South African Small Scale Mining Chamber (SASSMC) was officially launched during the field work period of this study and its offices had not yet been established. According to one key informant the SASSMC will focus on representing, promoting and assisting informal miners and therefore has a potential OHS role. On the other hand, the SSM official suggested that their role will be to try and better manage the activities of the sector through co-ordination and networking, but felt that the focus would rather fall on formal small scale mines (S:849).

6.4 Discussion

There are clearly a number of substantial constraints to extending OHS to informal miners related to the miners themselves and the context in which they work. The instability of both case-study sites due to their location is a particular concern. On the other hand, some of the constraints seem overstated and would need further exploration, especially given that they have been identified by stakeholders who, from evidence presented in the previous chapter, have had little direct experience of extending OHS to informal miners. Further, opportunities in the form of stable worker populations in the Blaaubosch and Ndwedwe context, as well as the fixed location of their work, are clear but not exploited.

For conventional OHS stakeholders the preoccupation with enforcement means that self-employed informal miners cannot be reached because there is no employer to hold to account. In the informal work context the conceptualisation of occupational health as a resource intensive measurement process to identify culpability, appears to detract from its primary objective – the health protection of the worker. The absence of an OHS policy for informal miners, low dedicated human and financial resources, and the lack of space for strategising informal worker OHS and for incorporating worker participation, all indicate a lack of OHS priority within the DME's SSM strategy and may themselves be partly responsible for the failure to consider and develop alternative and more appropriate approaches.

The current governance structures and stakeholder attitudes of both the projects and the locations in which the mines are situated seem to provide little opportunity for addressing work health and safety through any alternative avenues. Responses from non-mining participants exposed a distinct lack of knowledge on health and safety issues and a clear detachment from responsibility that is not so easily observed in discussions on other kinds of assistance to informal enterprises. There may have been an understanding of the problem of poor health and safety on the mines, and in a small number of cases an acknowledgement of the relationship between OHS and the responsibilities of other government departments, but the institutional boundaries within which officials work, and the major financial and human resource limitations they face, appear to be major constraints to them perceiving an OHS role for themselves or other non-conventional stakeholders.

An unexpected exception to this unpromising outlook is the potential role of the corporate stakeholders. However, while their future contribution to OHS for the proposed formal enterprises is clearly established, the likelihood of any OHS intervention from the mining companies before then seems low given their competing demands and interests, as well as conservative OHS attitudes that are presumably grounded in their own experience of OHS regulation.

In sum, the attitudes, resource constraints, lack of OHS knowledge and priority, rigid institutional structures and boundaries, as well as a distinct lack of genuine worker representation identified through the interviews, all contribute to a vacuum of accountability for informal worker health and safety.

CHAPTER 7

EMBEDDING OHS IN THE DME'S SMALL SCALE MINING SUPPORT STRATEGY

Due to the conceptual and sometimes genuine constraints discussed, the majority of participants of this study considered that formalisation was a necessary precondition for the extension of OHS to small scale miners. For many this was demonstrated by an attitude that closure was the only real option available to address safety on informal mines (M, N and P). For other participants the same view was indicated by their attribution of blame to the delays of the legalisation process as a direct response to the question of why more hadn't been done to improve OHS to date (V and U). There was also a very clear indication that a more structured OHS input from the Mining Inspectorate would only occur once they had received assurance from the SSM Directorate that formalisation was a certainty within the next three months (N: 575-582).

Such a position is not left unquestioned in this study but is the present reality for the informal miners themselves. The implication of the 'formalisation first' attitude in practice is that OHS coverage becomes entirely dependent on an efficient, effective, appropriate and inclusive formalisation strategy. Importantly, it also assumes the adequate provision of OHS coverage once formalisation is complete. Delays or threats to the viability of formalisation leave informal workers without protection and vulnerable to injury and illness. On the other hand, if managed and designed well, and with the full participation of the workers themselves, a formalisation strategy has the potential to address a number of the constraints to OHS protection, particularly those related to worker vulnerability, that have been identified in both the literature and findings of this study.

So while the following discussion may appear to stray from the focus on OHS, it became apparent through the research process that the management and nature of the DME's small scale mining support strategy was itself a fundamental factor in the potential for

protecting informal miners from work injury and illness. The discussion is not a comprehensive evaluation of the strategy but rather highlights some important and in some cases substantial challenges to successful formalisation that were identified due to their frequency within the data and the strength with which they were expressed by the participants.

7.1 Management of the small scale mining support strategy

The DME is clearly making substantial commitments to try and legalise informal miners, and there were some signs that the assistance strategy has been well managed or at least that the DME's involvement has been positive. The two mining company participants both had criticisms of the management but said overall they were impressed with the efforts of the DME and their continuing genuine commitment to assist informal miners. There was also praise from the Corobrik participant that the DME was learning from its mistakes and an indication that despite the long delays they had achieved some significant 'behind the scenes' progress at Blaaubosch, particularly in terms of securing funding for the project set up and training (M:337-345).

Despite this praise all of the phase two participants said that the assistance process at both sites had taken too long and that in reality there had been minimal or no operational implementation. This is with the exception of the establishment of Ndwedwe Ceramics as a beneficiation plant, but to date this has only impacted on ten of the Ndwedwe informal miners. There was strong criticism of the delays even from within the DME, particularly given that the participant felt that both case-study sites had been the primary focus of the department's attention at the expense of other informal mines:

"...believe me those are the two areas that everyone is talking about now and even that process is taking long. I know Osizweni things started in 1996, next year is 2006, 10 years and they haven't done a thing..." (N:426-429).

Many of the participants struggled to give detailed explanations for the delays and some simply attributed it to the 'licensing process'. However, two management problems in particular emerged from the interviews that seem at least partly responsible for the

limited progress made to date and that could themselves undermine the viability of formalisation.

7.1.1 Turnover and accountability of DME officials

The most frequently and repeatedly reported problem by the vast majority of participants in relation to management and efficiency was a high turnover of staff within the DME offices and an associated lack of accountability to those stakeholders outside of the SSM Directorate. Many described how they had worked with several DME personnel throughout the life time of the project and that responsibilities changed so frequently that they found it difficult to chase up on delayed or problematic project matters. Indeed many of the participants' most up to date information on who was responsible for each project differed. The reliance on task teams that were repeatedly disbanded and reformed and the absence of dedicated project managers were frequently given as reasons for project delays.

Some participants also said there was a lack of skills and capacity amongst the DME personnel and others felt that some of those in positions of responsibility for small scale mining were either not 'pulling their weight' (N:545) or were simply inappropriate.

Progress was considered heavily dependent on the personalities and commitment of a small number of stakeholders both within and outside the DME rather than institutionalised systems and procedures. The majority of participants identified the same four women within the DME who they felt had been responsible for driving the projects and that since their departure progress and communication had faltered. The latter issue was particularly important for those stakeholders who felt they participated at the fringes of each project (Q, T and V).

7.1.2 Poor stakeholder communication and co-ordination

There were many stakeholder co-ordination and communication problems generally for the two case-study sites, some of which were directly blamed for progress delays. Others

identified were actually unknown by the stakeholders but present potential threats to successful formalisation.

For Blaaubosch, communication has been promoted through a monthly meeting of stakeholders for the last four or five years (M:312). While the Corobrik participant praised the progress made in condensing an unworkable number of stakeholders down to a meeting involving three representatives³⁸, this process appears to have generated a number of serious communication breakdowns, particularly between the DME and the local municipality³⁹. One example was that despite the critical need for co-ordination of activities at the time of the proposed mine closure between the DME, Corobrik and the municipality⁴⁰, the latter was not even aware at the time of interview that the tender for implementation of rehabilitation had already been released. There was also a problematic misunderstanding between the DME and the municipality regarding land ownership following the mine closure that could potentially undermine the viability of some of the proposed economic ventures⁴¹.

The many references to meetings with wide representation suggest that communication between stakeholders of the Ndwedwe mine assistance strategy was quite promising in the early years. However, it seems this broke down when Mintek took over management in 2002 and there is now a problematic absence of information sharing. Interviews revealed quite different ideas about the planned future of the project and the total absence of project information held by the Ndwedwe Municipality is in danger of causing

³⁸ The forum was originally set up and involved the Corobrik team, the DME, the community mining Trust, various National Steering Committee members and consultants and now only involves the DME, the mining Trust and Corobrik.

³⁹ According to the municipality's files the last official correspondence from the DME was in August 2004 and that was a notification postponing a meeting.

⁴⁰ Project documentation emphasizes that all the proposed economic ventures to absorb the displaced miners at the time of mine closure must coincide to ensure that problems do not arise with any miners attempting to continue working at the site.

⁴¹ Interviews revealed that some of the proposed ventures to be managed by the municipality are to be located on the rehabilitated mine site itself. For the municipality to legally invest in such projects the land has to belong to the local council. While the Newcastle participant was under the impression that the DME would purchase the land, the SSM official told me that they had rather reached an agreement with the landowners that they would maintain ownership and would instead be paid rental for the use of the land by the various projects.

duplication of effort as they plan to develop their own strategy to assist the miners in the future (U:117).

Poor stakeholder communication and management have stalled progress and indeed Ndwedwe Ceramics has recently been closed in order to review project failings (R:404). Ironically, while the DME's withdrawal from project activities to secure the mining license has paid off, it now has to withhold the permit until the project is re-started. A cause for concern is that despite the widely held view that Mintek failed in its management of Ndwedwe, the SSM official appeared unaware of this. Indeed, perhaps again due to poor communication and feedback mechanisms the same official talked about a possible greater role for Mintek in the DME's strategy in the future (S:1070).

Finally, the delays caused by management problems threaten the actual viability of formalisation in a number of other ways. According to the interviews these include undermining the trust and buy in of both workers and landowners, causing funding losses due to time-constrained budget spending requirements, and the loss of niche markets for which proposed economic ventures were designed.

7.2 Design and structure of the small scale mining support strategy

The interviews made clear that the majority of work done under the DME's support strategy to date pertains to completing the various technical processes, such as environmental assessment reports and geological investigations, which are required to obtain a mining license. Evidence for this includes the summary given by the only small scale mining official in KZN of his own job description:

"...I contact and assist illegal miners to legalise themselves...that would be registering as a legal entity and getting the necessary documentation of say licenses from the department...there's a lot of technical documentation that needs to be compiled...most of the work we do pertains to licensing..." (S:111-113).

Further, the Mining Inspector described his role in the small scale forums as an observer, rather than participant, in a space that focuses on legal issues:

“...I do attend the meetings and stuff...but that is more the legal issue, that’s why I’m not...I do go just to understand how far they are in the process because we need to know just what’s going on there...but our input is waiting...” (N570-573).

The responses indicated that the underlying and fundamentally important reason for the preoccupation with licensing issues is that for those most involved in the DME’s strategy, formalisation is synonymous with ‘legalisation’. This narrow conceptualisation appears to have distracted attention away from substantial deficiencies within both the shape and characteristics of the small scale mining support framework itself, which make it unable to identify and/or respond to the broader range of challenges and needs associated with a more comprehensive understanding of formalisation. Again, given the prevailing view that formalisation is a necessary precondition to OHS, this finding has important implications for meeting the labour protection needs of the informal small scale miners. The inappropriate characteristics of the support framework in terms of meeting worker needs are therefore further explored before turning to look at some of the important areas of neglect.

7.2.1 Institutional design

The review of the literature suggested that the most effective level of policy intervention for SMMEs and informal workers is at the local, rather than national, scale of government (e.g. Rogerson 2004: 771; Lund 1998). While the DME’s approach is unlike other South African SMME strategies in that it aims to reach rural informal workers, its institutional design appears too centralised at national level to achieve such effective and appropriate local delivery.

As noted, on paper the SSM Development Framework (DME 2000) incorporates the input and services of a wide range of stakeholders within different government levels and departments. From the responses however, decision making and co-ordination for each project appear to remain firmly in the hands of the national office and understaffed regional office. Many of the participants indicated that this ‘management from the top’ (Q:304) approach was proving ineffective and the SSM official said himself that requests

for any kind of implementation at mine level involves a bureaucratic and time consuming route through the national office and various directorates within the DME (S:1016).

The centralisation problem has not been adequately redressed through the appointment of service providers and consultants due to their geographical distance from the projects. For example, while Mintek was appointed to manage the Ndwedwe project, evidence from the participants suggests that they have largely done so from their offices in Guateng (R:35-37; X:47). This distance, combined with the failure to appoint a competent and experienced project manager at either site, results in the SSM official identifying himself as the one person most in touch with the day to day events and requirements of both projects (S:347). According to the Ndwedwe key informant this same official has only visited the Ndwedwe site once in the last five months (XC:23)⁴².

In their defence the DME does stress that local players, such as local economic development departments, will have greater involvement once the new economic ventures for each site are established (S:170). However, the current failure to involve local stakeholders in the planning phase is likely to limit their commitment to implementation. Further, the lack of participation of local players in Ndwedwe Ceramics to date serves to undermine confidence in such claims.

7.2.2 Inappropriate stakeholders

The preoccupation with the legalisation process seems to have influenced which stakeholders outlined in the SSM Development Framework (DME 2000) have been most involved in the support strategy to date. The SSM official explained that implementation was mainly the responsibility of the DME but that other government departments do get involved when necessary in relation to regulatory requirements and land issues (S:124-131). All the small scale mining forums that were described within the interviews appeared to be predominantly concerned with such legal matters. The only exception to this was the Regional Small Scale Mining Committees that were established by the DME.

⁴² This is not surprising given that the Regional SSM official is responsible for the management of all informal mines in KZN.

While essentially a regulatory body the committees also had responsibility for improving communication and co-ordination between the DME and other stakeholders and for facilitating guidance and advice, as well as direct assistance to informal miners themselves (P:88-97). Importantly these committees were later disbanded because, according to the SSM official, it was felt that their work was a duplication of that done by a standing committee on environmental issues already in place (S:124-131). There was no evidence however, that any other forum had taken over these important non-regulatory functions.

While mining technology stakeholders such as Mintek and the Council for Geosciences have had significant influence over the planning, design and, in Ndwedwe's case, the management of the proposed formalisation strategies, there is little evidence that stakeholders who might have more experience or ability to respond to informal worker support needs, have played any significant role to date. Indeed, as mentioned in Chapter 6, some potentially important municipal stakeholders, such as Small Business Support at eThekweni Municipality, have been excluded from the support process (despite them expressing interest) due to a lack of communication from the DME (T:26-28).

The Ticor SA participant blamed a lack of thorough research during the project planning stage for the failure to identify more appropriate stakeholders for implementation. She argued that as a consequence the wrong stakeholders were involved and that is why they were failing to contribute effectively to the project (R:727).

7.2.3 Limited worker participation

Perhaps unsurprisingly, given the distance created between workers and project stakeholders by the institutional design, there has been minimal attention paid to the necessity of genuine worker participation and decision making in the planning and implementation of the support strategy to ensure that it can appropriately and effectively achieve its goals. This is despite the fact that the workers are the major intended beneficiaries of the formalisation process and will indeed be shareholders of the proposed economic ventures.

For Blaaubosch some of the phase two participants were confident that the workers had been properly consulted and made references to meetings in which they themselves had been involved. However, probing for further details revealed in all cases that meetings were generally infrequent and had taken place some time ago.

The descriptions of worker communication that had taken place suggest that most if not all the planning and decision making occurred without the knowledge and participation of the workers. Consultation was a word used by some of the participants to describe what in reality sounded more like a meeting to explain a plan that was already in place:

*“...we’ve actually been on site, we’ve met the people, told them what **we** propose to do and find out what questions they have, and tell them also what **our** requirements are...” (M:108-109) (emphasis added)*

*“...we have talked to the people who weren’t part of the community Trust sometime last year, and said to them listen, this is what **our** plan is...as soon as the DME start their project **we’re** going to take you guys on board and start with the project...” (Q:415-417) (emphasis added)*

For Ndwedwe the Trust member explained that in the late 1990s he invested a great deal of time talking to the workers about formalisation and discussing the benefits of the process (V:21-23). There is little evidence that Mintek continued this process and indeed the key informant explained that Mintek had instructed the manager of Ndwedwe Ceramics to cease organising meetings with all the mine workers because it would lead to conflict (XA:35). One of the key informants also criticised Mintek for failing to take the miners down to the proposed new site to let them judge the quality of the kaolin for themselves (Y:43).

7.3 Neglected challenges to formalisation

The most significant threats to the viability of formalisation that seem to go unchallenged as a result of this inappropriate support framework relate to a range of what might be

called the more human processes associated with informal worker assistance including capacity building and empowerment, as well as the already discussed improvement of working conditions. The need for appropriate financing and legislation also appear to receive little if any attention.

7.3.1 Informal worker support needs

The evidence from phase one and two indicates that there has been minimal if any real attempts by project stakeholders at either site to build capacity amongst the mine workers themselves. This seems to constitute a lack of foresight in terms of how each proposed venture will operate.

For Ndwedwe, all the participants directly involved with the project, with the exception of the SSM official, blamed Mintek's ineffective and inappropriate management style for the neglect of the capacity building⁴³ and empowerment needs of the factory workers, as well as the apparent total neglect of the mine workers themselves. Further evidence from the key informant suggested that Mintek followed a very disempowering approach by refusing to inform the manager on budget matters let alone allow her to participate in budget decisions (X:33). While Ticor SA have stepped in to provide some training, to date this has only reached a limited number of the factory personnel⁴⁴.

The Ndwedwe case also indicates an unacceptable and detrimental lack of attention within the support strategy to the economic vulnerability of the workers. This was due to Mintek's frequent failure to pay the wages of the factory workers⁴⁵. Mintek's behaviour in this regard not only increased the vulnerability of the workers who agreed to abandon their mine work with the promise of achieving the opposite, but, as indicated from the phase one interviews, widespread community awareness of the situation was clearly

⁴³ The Ticor SA participant was particularly critical of Mintek's disregard for the business and management skills required by the appointed factory manager (R:39). The criterion for appointing the factor manager was that the person be from the local area. A former teacher was appointed with no previous experience.

⁴⁴ The Ticor SA participant said that the company was committed to the project but that there was a limit to the time and resources they have been able to volunteer to date because of other project responsibilities in other areas.

⁴⁵ Interviews from phase one and two confirmed that the workers had not been paid from July to at least November in 2005.

undermining the trust and buy-in of the mine workers in relation to the proposed economic ventures.

The lack of attention paid to worker needs by those stakeholders who are given considerable project responsibility within the support strategy is problematic. With this in mind it would certainly be useful to further explore the DME's recent decision to terminate Mintek's contract⁴⁶ and shift management responsibilities to the Council for Geosciences (CoG). While the Ticor SA participant seems confident that the Director of the CoG is competent for the position (R:63), it remains unclear whether an institution primarily involved in geological investigations has the experience, interest and capacity required to manage a formalisation project and meet worker needs.

7.3.2 Appropriate financing

Unni (2004) argues that appropriate financing for informal workers and enterprises requires credit policies with differential rates of interests and financial institutions that are able to cater to a variety of needs. According to the SSM official and Corobrik participant, the funding negotiation for the Blaaubosch project took nearly three years and this is largely attributed to the onerous conditions required and inferior rates offered by the chosen funder, the Industrial Development Corporation (IDC) (M:95; S:700). The Corobrik participant said that the returns the IDC required would have undermined the feasibility of the project (M:97). Despite the suggested inappropriateness of this apparently centralised and inflexible financial institution for informal or formalising small enterprises, it was clear that the SSM Directorate planned to continue utilising its services within the SSM assistance strategy.

7.3.3 Mining legislation

Some of the participants felt that the current legislative framework is too onerous and inappropriate for the survivalist informal miners and itself will ultimately threaten the

⁴⁶As already noted, Mintek's contract has only been terminated for Ndwedwe. The SSM official said that Mintek would continue to be a key service provider within the SSM Development Framework.

ability to formalise. Of particular note was the view of the mining consultant who had assisted a number of informal miners with mining licence applications:

“...in the present system you cannot license informal miners, the environmental report, the rehabilitation guarantee alone is R50,000. I mean two hundred people at Osizweni can’t raise R400 together...” (Y:67).

“...it is not realistic, you will never achieve it if you try and implement the same legislation...” (R:623).

While it is understandable that the DME aims to uphold the same regulatory standards for all types of mining it is not clear that any other more appropriate avenues to achieving such standards for informal miners have been explored. This is despite the identified need for such a review in the DME’s White Paper (1998, Section 3.1.4).

The length of time involved and the current costs to the DME of the licensing process for the two case-study sites alone, as well as the continuing substantial and expensive requirements to be met by the mines themselves once formal, suggests the current approach is likely to be prohibitively complex and resource intensive to reach large numbers of informal miners. It seems sensible to commit to review the legislation and legislative process more thoroughly.

7.4 The potential exclusion of vulnerable workers from assistance

There were some strong indications within the data that the DME’s failure to attend to some deficiencies within the SSM support structure has not only resulted in a lack of response to the needs of informal workers and the proposed enterprises, but also directly threatens to exclude some workers from formalisation assistance altogether. This is problematic in itself but also means that those workers will have no access to OHS protection. Problems identified relate to poor worker organisation and representation on those sites currently being assisted, the focus of assistance on only those mines that are economically viable, and the lack of efforts to redress the marked absence of any comprehensive or credible data on informal mining in South Africa.

7.4.1 Worker organisation and representation

The lack of genuine worker participation in the design and content of the SSM support strategy, as well as in specific relation to the extension of OHS, has already been discussed. However, democratic worker representation also has a crucial role to play in ensuring fair access to the benefits of formalisation assistance. The DME's strategy at both case-study sites did to a limited extent recognise the need for organisation of workers. However, the data raises some concerns over how such organisations were formed and now operate, and whether a lack of attention to power and inequality amongst the workers is now in danger of excluding the most vulnerable from the formalisation process and, in turn, jeopardizing their access to OHS.

The data for Blaaubosch gives cause for concern regarding the formation of the Intuthuko Blaaubosch Mining Trust in the late 1990s which, at the time, was to include all those that would benefit from the formalisation process. Phase one participants identified a number of problems with the Trust formation process ranging from the failure to inform workers on time about the important meeting where membership was decided, to the active exclusion of those workers considered outspoken or too old. All explanations of the formation given by participants in phase two differ but none reassure that the process was fair and transparent and that it was safeguarded against the influence of powerful community members. Indeed the Corobrik participant said that some years into the process they found out that a number of Newcastle Municipality officials had managed to join the Trust despite having never worked on the mine (M:271)⁴⁷.

There is no evidence that any other kind of organisation has been formed by or for those workers due to be absorbed in the other proposed economic ventures at Blaaubosch. With the imminent closure of the mine, only a head count performed to date (Q:678), and the DME's position that the workers must decide amongst themselves which project they are to work on (S:782), it is a concern that no mechanism is in place to ensure the

⁴⁷ Corobrik refused to continue with the project until these members had been excluded from the Trust.

employment opportunities are not taken by more powerful or outspoken members of the community.

There is much less information available on organisation and transparency for Ndwedwe. Ndwedwe Ceramics has been set up as a formal enterprise but to date the mine workers themselves do not seem to have been included as shareholders. Instead it is intended, but not agreed, that the workers will become shareholders of the new mine operation once opened. Again, how the workers will be identified to be included is not clear because current plans are based on a list of 115 names and addresses collected from workers some years ago (XA: 42), yet worker numbers have almost doubled since this time.

Despite the DME's policy commitment to a gender sensitive approach there is little indication that any convincing attempts have been made at either site to ensure gender representation. Indeed the chairpersons of the Blaaubosch Trust and the Ndwedwe Ceramics Board of Directors are men. This, and the lack of evidence that any of the women miners play an active role in negotiation of project planning, raises a concern that any existing gender inequalities might lead to the exclusion of some women from assistance.

7.4.2 Economic viability fundamental to assistance

The DME's strategy to assist informal miners is focussed entirely on the formalisation and beneficiation of their mining activities. While this makes sense in many respects the Mining Inspector explained that such a focus actually excludes from assistance all informal mines that are not economically viable for formalisation due to the absence of sufficient mineral resources (N:163). According to the Inspector, the DME's strategy therefore excludes around 90% of informal mining activity in the province, the majority of which takes place at abandoned formal mines with depleted resources (N:183).

In the case of identified informal mining activities that cannot be formalised the general advice from the Mining Inspectorate is to close the mine and prevent access. However, the participants raised a number of obstacles to closure in such cases. Firstly, and only

applicable to abandoned formal mines, is that while the previous owner is legally responsible for mine rehabilitation, due to the large scale closure and often bankruptcy of formal mines in South Africa, tracing owners is often extremely difficult (N:191). Even if owners are traced it can take many years to process such legal demands (N:193). Secondly, and heavily criticised by the Mining Inspector, is the lack of policy or funds allocated for the closure and rehabilitation of such informal mines by the DME itself (N:434). Thirdly, and an obstacle voiced most strongly by the majority of participants, is that closure is not possible because it would threaten the livelihoods of the informal miners. Finally, in the absence of any funds to effectively close the mines, the majority of participants felt that poverty would undermine any half measure efforts that could be taken to prevent workers returning to the mine sites.

The solution according to a number of the participants is for the DME to work with other stakeholders to implement alternative non-mining employment generating projects (N, P, Q, R). The ability of the DME to do this is demonstrated by their current, if poorly co-ordinated collaboration with the Newcastle Municipality to employ the majority of workers from the Blaaubosch site. However, the evidence suggests this is not an approach that has yet been considered on mines where absolutely no formalisation of mining is possible.

The inability and unwillingness to close non viable informal mines and the failure to adequately explore possible alternatives means that such workers continue to work in often extremely hazardous and unhealthy working conditions. In a number of abandoned mines mineral depletion is so severe that the only resources remaining are the pillars left in situ to support the structure of the mine (N:73). In these cases the informal miners are stripping the pillars and are therefore directly undermining structural safety.

Another important issue that requires further exploration on this subject is how decisions are made as to what is considered a viable mineral resource for the purposes of formalisation. The mining consultant participant advised caution on this issue because what might be considered an insufficient financial return for a private investor such as

Corobrik or a stakeholder such as the Industrial Development Corporation, might actually constitute a significant step towards economic security for those workers involved (P:200). This point reconfirms the importance of involving both workers, and appropriate stakeholders who are able to cater for the needs of such workers, in the support strategy.

7.4.3 Lack of research and data

The dearth of information and knowledge on informal mining in South Africa (discussed in chapter 3) on which to base support strategies, not only serves to undermine their effectiveness but leaves large numbers of informal miners unidentified and therefore unassisted. The participants in this study were not aware of any comprehensive research that identified the numbers or types of informal mines in the province or country. The information held within the DME Regional Office, aside from that about mines currently being assisted, could almost be described as anecdotal.

There appears to be no formal strategy for identifying and researching informal mines in KZN. While the Mining Inspector is working through a list of 59 abandoned mines sites to investigate the existence of informal activity, there is currently no such system to identify mines such as Blaaubosch and Ndwedwe that have always been informal.

Several participants spoke of the particular difficulties in identifying the latter type mines which include their typical remote locations and the fact that workers often do not identify themselves as miners. Indeed, the Mining Inspector said that more often than not one normally only gets to know about an informal mine when there is an accident and someone dies (N:248). Another significant constraint claimed is that the large formal mine companies often fail to report informal mining activities that they are aware of because they want to avoid the responsibilities of rehabilitating their own disused mines (P:348).

Many of the participants noted the absence of a clear definition of what informal mining actually is and, just as with informal work generally, this proves a substantial impediment to effective data collection. The SSM official said that the large number of possible

variables including labour force, capital, profit and type of production has made one definition impossible and that instead the general and clearly inadequate rule employed is:

“...informal mining, you identify it when you see it...” (S:99).

7.5 Inadequate OHS coverage following legalisation

Given the clear perception amongst the majority of the participants that it is only possible to extend OHS to the informal miners once they have been formalised, it is imperative to briefly explore the question of how comprehensive OHS protection will be in the proposed Ndwedwe and Blaaubosch formal economic ventures⁴⁸. Knowledge on this can really only be based on the spoken intentions of those key stakeholders involved.

As noted in the previous chapter, the mining company stakeholders will play the primary health and safety role in the future ventures and the attitude and understanding of both representatives was encouraging on this matter. From the DME’s perspective, once operations have been formalised the Mining Inspectorate will play its normal inspection and enforcement role, though the SSM Directorate will also assist with any changes required before penalties are imposed (S:338-341). As the SSM official explains, *“the legislation doesn’t differ, it’s as rigorous for small scale mines as it is for large”* (S:417).

While the general evidence from this study is hopeful, there remain a few serious concerns regarding the coverage of OHS in the proposed ventures. The allocation of primary health and safety responsibility to newly appointed mine managers at each site by many of the participants places a substantial burden on such employees. While it is understood that an existing manager from Corobrik will be deployed for the Blaaubosch venture, the SSM official indicated that an existing project member, and perhaps even the current Ndwedwe Ceramics Manager, will become mine manager at Ndwedwe. His reasoning was that mining kaolin is relatively simple (S:329). Mining health and safety on the other hand can be complex and an underestimation of the qualifications needed

⁴⁸ In the case of Blaaubosch this discussion will only look at the OHS coverage within the Corobrik joint venture because the other ventures will not involve mining activities.

would be to the detriment of the workers. Balancing the desire to employ someone locally to ensure benefits accrue to the community, with the need for a manager with health and safety qualifications and experience to ensure worker protection, clearly requires more thorough consideration by the DME and project stakeholders.

Another concern is that formalisation does nothing to address the clear lack of human and financial resources within the DME's regional office or the perceived preoccupation of the Mining Inspectorate with large scale underground mining (P:527; Y:101). One of the participants felt very strongly on this issue and argued that “...*whoever gives them [Blaaubosch and Ndwedwe] a license will stand responsible for a couple of corpses...*” (Y:98). The damning account of health and safety coverage on a sample of recently formalised small scale mines presented in the CSIR study (2000), including common problems of frequent rock falls, deficiencies in risk assessment, hazard monitoring, medical surveillance and training, and limited access to technical expertise, management systems and affordable appropriate technologies, serves to further undermine confidence that the Ndwedwe and Blaaubosch workers will be adequately protected by existing regulatory OHS mechanisms.

7.6 Discussion

The attitude that formalisation is a necessary precondition to OHS protection for small scale miners means that delays and threats to the viability of formalisation will also delay and threaten access to OHS. The current and seemingly unresolved management problems within the DME strategy in the form of a high staff turnover, a lack of accountability, the dependence on personalities rather than institutionalised systems and poor communication that causes time wasting and duplication of effort, all mean that delays to project implementation are likely to continue.

Threats to the successful transition to, and viability of, the proposed formal economic ventures are varied and numerous. Of particular importance is the failure to acknowledge and respond to worker needs and vulnerabilities and to review the appropriateness of the current financing and legislative framework for small scale survivalist miners.

Underlying and responsible for many of the problems is the DME's narrow preoccupation with the process of legalising informal mining. This argument is not intended to undervalue the importance of, or hard work that goes into, securing a mining license, but to instead highlight that this legal preoccupation has produced a support strategy and framework characterised by centralised and inflexible management structures, the appointment of inexperienced and inappropriate stakeholders in positions of considerable worker responsibility, and the lack of adequate space and support for both worker participation to ensure workers' interests are incorporated, and genuine representation to prevent any worker exclusion. The likely consequences of pursuing such an inappropriate strategy are suggested by the current situation at Ndwedwe Ceramics where the factory has been closed and the employees are out of work.

Significant delays in project implementation and the lack of attention to the need for improved data on informal mining suggest that the number of workers that could be assisted under the current strategy is limited. Further, in the absence of a strategy to deal with informal mining activities which are not economically viable, some of the most dangerous informal mines in the region, and therefore some of the most vulnerable informal miners, are also excluded from assistance. While the attitude that the closure of such mines is not possible due to the likely poverty consequences is laudable, the current approach of doing nothing is neither an appropriate nor acceptable alternative.

Finally, the failure of the small scale mining support strategy to redress some continuing and significant barriers to the effective extension of existing OHS regulatory mechanisms to both the proposed Ndwedwe and Blaaubosch ventures and to so-called 'formal' small scale mining generally, raises fundamental doubts about the DME's assertion that OHS challenges will be solved upon formalisation and therefore the usefulness of drawing a distinction between formal and informal small scale mines based only on a licensing technicality. The DME's perspective is not only naive given the poor health and safety record of mining generally in South Africa (e.g Leon Commission 1995 and IMC 2003), but also highlights the important influence that limited definitions of formality can have

on the fulfilment of workers' rights and needs. Using the more worker oriented 'employment status' definition of informality advocated by WIEGO, one could argue that the current DME approach misses the point that informality will not be addressed until more appropriate and effective methods of providing labour protection on all small scale mines are identified and implemented.

CHAPTER 8

CONCLUSIONS AND RECOMMENDATIONS

Work-related injuries and illnesses are a major potential, but largely under explored source of informal worker vulnerability. If unprotected in terms of insurance or compensation, the common consequences of injury and illness in the form of lost work time, rising health care costs, reduced productivity and even job loss, are all likely to reduce the economic security of workers and increase their risk of poverty. The rapidly rising number of informal workers worldwide highlights the importance of preventing or providing protection against these and other forms of insecurity arising from the nature and conditions of work, in both poverty reduction and economic development strategies.

For work health and safety, mainstream regulatory mechanisms appear inherently limited in the protection they can provide to informal workers. This is not only as a result of the international decline in state funding for OHS (ILO 2004), but, more fundamentally, because such mechanisms operate through formal employment relationships. However, the ability of such mechanisms to re-orientate themselves to the changed world of work, and the contribution that other actors and institutions can make to improve the health and safety of the informally employed, are little understood.

By exploring the theoretical and practical relationship between informal small scale miners in South Africa and a range of both existing and potential OHS stakeholders that impact on the context and nature of their work, this study has revealed a significant institutional gap in the provision of work health and safety protection to informal self-employed workers. The gap exists for a number of reasons.

The characteristics of conventional OHS mechanisms for the mining sector identified here reflect those found in the literature internationally. They are centralised, vertically driven, resource intensive and technocratic (e.g. Peltomäki 2003; Nuwayhid 2004; Shukla

et al 1991). As such they are both inappropriate for and inflexible towards meeting the challenges presented by informal work.

On the other hand, in a minority of cases the interdependent links between non-conventional OHS stakeholders and informal worker health and safety were minimally understood by the participants in this study. In practice however, and as found by Nuwayhid (2004) and van Eerd (1997), the potential multiplier impact opportunities of such stakeholders working together to improve OHS are overlooked.

Finally, while institutions at national, provincial and local level may be slowly beginning to recognise the importance of the informal economy, and are developing support policies and strategies that may even be motivated by a desire to improve working conditions, the design and implementation of such strategies tend to be focussed on a limited range of more familiar and recognised needs such as credit and skills training (Salter 1998) and often fail to reach those operating at survivalist level (Rogerson 2004). In the case of the DME's support strategy for informal small scale mining, enterprise registration was the dominant preoccupation. It seems an inherent but unfounded assumption of such strategies is that improved labour protection will be an automatic by-product of other kinds of support.

A closer analysis of the specific ways in which these institutional positions play themselves out in the context of informal small scale mining in South Africa reveals a number of significant constraints to the reorientation of such institutions to the OHS needs of informal workers, but also some potential areas of opportunity that need further exploration.

8.1 The reach of conventional OHS mechanisms

The range, number and severity of work-related illnesses and injuries experienced by the small sample of worker participants in this study alone suggest that conditions at both the Ndwedwe and Blaaubosch mine sites are extremely hazardous and significantly contribute to both health and economic insecurity. The risk of serious injury causing lost

work time, disability and even death was high but, as identified from other studies of informal workers (e.g. Loewenson 1999 and Rosskam 2003), problems relating to poor work organisation, poor access to clean water and sanitation, ergonomic hazards and exposure to dusts, were reported more consistently and were likely to have a significant impact on worker well-being and productivity.

The lack of response from conventional OHS mechanisms to these identified problems was largely due to a narrow and inflexible conception of the function and practice of OHS within the DME, and in particular to the preoccupation with technical instruments and methods designed to identify culpability rather than directly promote worker health. This finding reinforces the arguments of van Niftrik et al (2003) and Peltomäki (2003) that the current mainstream practice of OHS leads to the neglect of cheaper, simpler and more appropriate approaches, such as changes in behaviour and work organisation, which could potentially achieve substantial improvements for large numbers of informal workers.

Many of the identified wider sources of informal worker vulnerability that can influence health and safety were found in the case of small scale mining. The insecurity of work premises was a disincentive to the investment of resources to improve site conditions (e.g. Rongo et al 2004); the urgency of earning an income was directly undermining safe practice, and was leading to self-exploitation and increased exposure to risk in the form of long working hours (e.g. Shukla et al 1991). Despite an acknowledgement of many of these worker limitations, the DME's approach mirrored the shortcomings of several informal worker OHS interventions reviewed by Rinehart (2005) by failing to take them into account within the design of the OHS strategy itself.

This conservatism seems to lose sight of the primary objective of OHS – to protect the health and safety of the worker. The notion of location specific OHS for example is arguably only applicable to some aspects of structural safety and overlooks a range of relatively cheap and simple interventions to change individual and group practice that could be viewed as investments to be taken with the workers to the new sites.

Suggestions that low incomes prevent workers buying necessary safety equipment immediately raises the question of whether cheaper alternatives or alternative funding sources have been investigated. Perceived barriers such as low education levels and stubborn individualistic attitudes could potentially be overcome and challenged by appropriately designed OHS strategies themselves. Poverty drives hazardous time-saving work practice but a better indication of lost work time, and therefore income, due to injuries or illnesses might help to motivate behaviour change.

While there is of course a genuine concern that a lack of ability to formally monitor and enforce OHS leaves workers facing unacceptable risks, the current situation of doing little or nothing to promote health and safety is even less desirable. Indeed, the lack of action indicates that little progress has been made in fulfilling the commitments laid out in the Minerals and Mining Policy (1998) to both provide guidance and advice to small scale miners to comply with OHS standards, and to review the practical applicability of current OHS legislation. Nor have the commitments endorsed by South Africa in ILO Convention 155 (including the right to OHS training) been fulfilled for the Ndwedwe and Blaaubosch workers.

Primary constraints to the development of more appropriate and responsive OHS strategies include the lack of space and resources provided for thinking about and implementing alternatives and, as found for many conventional OHS mechanisms, the complete absence of worker participation (Pringle and Frost 2003). One way forward for the DME might be to explore and learn from worker-led approaches promoted by an organisation in India called PRIA. For the last two decades PRIA has run self-diagnosis workshops and developed participatory risk management strategies to encourage self-regulation of health and safety in the informal economy (PRIA 2004). The DME could organise an exchange visit to learn from PRIA's work and try out these ideas in a pilot project. The work done by the ILO SafeWork Programme could also assist in identifying more affordable OHS methods, including those outlined in their manual on health and safety on small scale surface mines (ILO 2001a).

For this to happen there is a crucial need to raise the profile of small scale mining generally within the Mining Inspectorate and to remove the artificial and unhelpful barrier between legal and informal mines. OHS is poor in both, and often for similar reasons. It makes sense to tackle these under one strategy that recognises the many distinct challenges of the sub-sector and of small scale enterprises more generally. A failure to do this will mean that while on paper small scale mining is regulated under national OHS legislation, the reality is little different to the majority of countries where small enterprises are officially exempt from OHS requirements altogether (Barten et al 1996). In the same way as for those countries then, the continuing neglect of OHS within small scale mining raises serious ethical questions about the DME's approach to promote employment growth in a sector it cannot protect.

Genuine and immovable constraints to extending OHS to informal miners do however remain in some circumstances. Mining the support pillars left in situ in abandoned mines for example, is inherently unsafe. With the exception of some general guidance and support nothing can be done to protect against these kinds of extreme risks. The common high turnover of workers on these kinds of mines increases the problem. Such constraints clearly highlight the limits of what OHS mechanisms can achieve on their own. In this regard the study has identified a serious gap in the DME's current support strategy because it applies only to the suggested minority of informal mines located in areas where viable mineral resources exist. The idea raised by some of the participants to get local and other spheres of government involved in these circumstances to identify alternative economic ventures seems sensible but is not easy in a country suffering high unemployment.

8.2 The role of non-conventional OHS stakeholders

Constraints to the involvement of non-conventional OHS stakeholders in the extension of OHS to informal workers appear substantial. The lack of expertise and knowledge on OHS issues and on mine health and safety in particular, and the absence of any sense of responsibility to independently intervene to improve conditions on either mine, all suggest that the importance of the Mining Inspectorate as a central player cannot be

avoided. This makes sense (if their approach is changed as recommended) due to their mining expertise and the DME's more general strategy to promote small scale mining. It does not however, have to lead to the exclusion of other stakeholders and, given the nature and number of OHS challenges faced by informal miners, it seems sensible to further consider their potential contribution.

A number of studies have identified significant spill-over effects of poor OHS in informal enterprises on both public and environmental health and have argued for an appropriate response from those institutions concerned (e.g. Matte 1989; Barten 1992; Shukla et al 1991). The location and nature of the mine work, poor levels of sanitation, and the involvement or presence of children and other members of the community all present substantial environmental and public health and safety challenges at both of the case-study sites. Despite this, only a limited number of the participants recognised any interdependent relationship between the protection of worker health and safety and the responsibilities of other government stakeholders. The suggestions made about the potential role of the Department of Health in monitoring and treating occupational health problems, the comparative advantage that Environmental Health might have as a local and easily contactable OHS player and the potential extension of local government's health and safety mandate to cover work activities all warrant further exploration, but were raised without convincing confidence and often revealed mistaken assumptions. Further, it was the view of the study participants that given current mandates and priorities, as well as available resources, it was unlikely that such non-conventional stakeholders could accommodate an OHS role.

Underlying the difficulties the majority of participants had in conceptualising these interdependent links appears to be a deep divide between what are considered public, citizen or social issues, such as health, and those issues to do with workers and their economic activity. This not only applied to the suggested absence of a worker focus within the Department of Health, but also to the inability of local government to fully understand or act upon the links between its own mandated responsibilities for both local economic development and the promotion of a healthy and safe environment. These

findings suggest the need to reframe the problem at the level of both policy and implementation and reassess such links. The planned work of the World Health Organisation (WHO) under a Global Commission on Social Determinants of Health (CSDH), and specifically their focus on the role of working conditions, has a potentially important role to play in this regard. The Commission plans to gather evidence on inequities in working conditions and occupational health outcomes and will work toward identifying and advocating interventions and policies that can address these factors from a variety of different institutional positions (CSDH 2005). The great challenge in this type of work, if it is to have influence of any scale, is to institutionalise the approach, rather than the specific recommendations, in the governance structures of different economic sectors and geographic areas.

Breaking down the components of the OHS problem in a more immediate and practical way in some form of policy dialogue, may also help to demonstrate the ways in which government departments can get involved on their own terms and using their own expertise. An obvious example from this study is the absence of water and sanitation facilities on site that could be provided under local government's service delivery strategy. The problem of contaminated water at Blaaubosch could also be tackled under the remit of environmental health or water affairs.

The suggestions made about the potential role of the Department of Health, and Environmental Health in particular, could be more usefully explored in a future study of this kind by further breaking down the various components of existing health policy to find where elements of OHS can most easily be incorporated. The nature of the OHS problems identified in small scale mining suggests that in addition to environmental health, and as found in other studies on OHS and informal work, further overlapping interests might be found in public health (e.g. Nuwayhid 2004), health promotion and in primary health care (e.g. London 1993).

The analysis of the interaction between government and non-governmental stakeholders in the small scale mining support strategy revealed a more substantive and sector specific

opportunity to extend OHS to informal miners that takes advantage of the identified OHS potential of the formal mining company stakeholders. This opportunity, outlined below, is currently being overlooked by the DME.

Small scale mining is promoted by the DME through different avenues but primarily by encouraging large formal companies to engage small registered enterprises, through outsourcing or leasing arrangements, in mining residual mineral deposits that are no longer economically viable for large scale operations. These initiatives have produced very mixed results and only a minority of success stories (Kruger 2003). Perhaps why the involvement of Ticor SA and Corobrik in small scale mining seems more promising is that their roles have been largely guided by the social and labour plan they are required to fulfil in order to be granted a mining license.

The social and labour plan seems an interesting and laudable component of DME policy that requires proactive strategies from mining companies to, among other things, promote local economic development, including support for SMMEs, in the areas and communities surrounding their operations. It is also required that companies work within the framework of local government Integrated Development Plans (IDPs). What has been overlooked, except it seems in the case of Ndwedwe and Blaaubosch, is that the DME's attempts to get big mining companies involved in promoting small scale mining could be more closely coordinated through the social and labour plans rather than under the ambit of business. The opportunity also then exists for this involvement to be oriented to meeting the OHS needs of mine workers.

A gap in this model is that the current IDP process is not informed or guided by the DME's strategy to promote economic development through small scale mining or by the opportunities presented by the social and labour plans. So while there is a clear opportunity to more closely co-ordinate the activities of local government, the DME and mining companies, for the benefit of small scale miners, methods are first required to encourage local government to value the potential of the sector.

Given local government responsibility for economic development one method might be to estimate the contribution that small scale mining makes to the local economy by capturing the supply and sale of the mineral resource, or even the activities of the whole value chain. Another related method could be to research the characteristics of the value chain, including its employment potential, to demonstrate to government how its own activities at one point, if well designed, could have potential multiplier impacts along the chain and contribute to economic development. The research conducted by the Institute of Natural Resources (2003) on the value of the traditional medicine sector within eThekweni, and the consequent support provided to the sector by local government provides an important and relevant example. By promoting this sector the municipality has reached and benefited large numbers of farmers, harvesters, traders and practitioners along the mostly informal value chain (Chen et al 2005). Indeed, if Ndwedwe itself was identified and recognised as an important supplier in this chain, it might well raise the profile of the mine within local government. For Blaaubosch on the other hand, it might be useful to investigate how local government decisions on sourcing building materials for the purposes of housing delivery could have a positive impact on the economic and employment potential of the Blaaubosch mining activities.

This study has identified local government as an important player in the support of small scale mining for a number of reasons. Firstly, local governments can often offer more appropriate and effective support to survivalist enterprises and informal workers (Rogerson 1999 cited in Rogerson 2004; Lund 1998). Secondly, the DME, at least on paper, highlights the crucial role local government must play in the SSM support strategy. Thirdly, the influence local government has on the immediate environment in which informal workers operate, and its responsibility to promote a healthy and safe environment, have both been identified as potential routes to the extension of OHS. With all this in mind it is important to highlight a further significant barrier to the involvement of local government in supporting small scale mines identified through the study which might also have implications for the assistance and labour protection of informal enterprises more generally, and particularly those located in rural areas in South Africa.

The issue relates to the governance of land and, in particular, the incorporation of former 'Homeland' designated areas into newly formed municipal boundaries.

According to the Newcastle Municipality representative, when privately owned, local government is not legally allowed to invest resources in any activity taking place on that land. Secondly, due to the historical absence of any town planning for the same land area, the local government lacks any tools in the form of local bylaws to influence how it is used. Therefore, when such land is utilised for the purposes of unregistered economic and, in this case, dangerous activity, local government can apparently neither directly support nor regulate those involved. While it is beyond the scope of this study to confirm the legal accuracy on this issue, it was a position shared by both of the local municipality participants and, if true, has important ramifications for the majority of municipalities. If, as national government demands, local governments are to play a greater role in both economic development and the promotion of small and survivalist enterprises, serious attention must be paid to this issue.

8.3 The framework for informal worker support

The sector specific nature of mine health and safety, as well as its institutional location within a department that also aims to support the formalisation of small scale mining, arguably present some unique advantages for the extension of OHS to informal miners. Such a framework holds the potential to tackle those broader sources of worker vulnerability identified, such as poverty and lack of knowledge, which themselves can be responsible for dangerous working conditions. It might also be able to provide the kind of structure necessary to encourage and coordinate the OHS role and input of other stakeholders. This study found however, that these opportunities have been overlooked.

Aside from a variety of common but serious management deficiencies that cause delays and threaten the viability of formalisation, a broader look at the current DME strategy revealed that it is guided by a narrow conceptualisation of what is needed to support informal small scale miners. The structure of the framework built to deliver the SSM strategy shares some of the characteristics, and therefore some of the same limitations, as

the national government framework for SMME support reviewed by Rogerson (2004). It is characterised by centralised and inflexible management structures, by the appointment of inexperienced and inappropriate stakeholders in positions of considerable decision making responsibility, and, perhaps most clearly, by its distance and lack of accountability to the workers it aims to assist. These factors mean that not only does the strategy fail to attend to workers' needs and a wide range of other barriers to the successful achievement of formalisation associated with those operating at survivalist level, but that the DME continues unchallenged in its neglect of such issues. While the literature and findings of this study revealed that OHS cannot be tackled as an isolated problem, the lesson to be drawn from the DME's approach is that if you cannot get the framework of general informal worker support right, there is little hope for the inclusion of OHS at all.

In attending to these limitations the DME must draw from the approaches, experiences and lessons of other small scale mining support strategies internationally. One idea might be for the World Bank's 'Communities and Small Scale Mining Network' to set up and facilitate a series of exchange visits and workshops to showcase the most and least successful experiences. Another strategy would be to explore the work of those providing more comprehensive support to informal workers more generally, such as the Self-Employed Women's Association (SEWA) in India. The work of SEWA is particularly important from an OHS perspective because it recognises that a lack of health and safety is both a cause and a consequence of employment and income insecurity (Dayal 2001) and therefore attempts to tackle OHS as just one part of an integrated strategy.

The clear need for fair and accountable worker organisation and representation for the future progress and inclusiveness of the DME's strategy, as well as the effective incorporation of OHS and other worker needs within it, has been a strong and reoccurring theme throughout the literature (e.g. Gallin 2002; Goldman 2003) and findings of this study. None of the worker or member based organisations identified for small scale mining emerged from the workers themselves and a lack of attention to inequality in their formation has left them vulnerable to the interests of the powerful. Identifying who could

provide necessary and appropriate assistance in this area is not easy however because of the dearth of strong informal worker organisations generally in South Africa. The absence of any other promising initiatives, together with the DME's strategy to further promote employment growth in the small scale mining sector, reinforce the argument that attention must be paid to the potentially important role of the formal labour movement. The National Union of Mineworkers did not participate in this study due to their lack of involvement in either study site but their attitude towards informal mining would be useful to investigate further. This is also particularly important due to their high level involvement in the formation of the mine health and safety legislation and their potential ability to organise informal miners around the issue of poor working conditions.

8.4 Further research and information needs

The reality of any kind of action to take advantage of any of the opportunities for change presented in this discussion firmly depends on the priority given to work health and safety for informal workers by all relevant stakeholders and especially by those within the DME. Such priority is undermined by the inadequacy of available data and information at many levels.

The clear lack of reliable and large-scale data on OHS risks in developing countries, and for informal workers in particular, mean that the extent and severity of OHS risks faced by the majority of the working population remain little understood. The lack of research on the links between poor working conditions, poverty and economic growth, also makes it difficult to reframe OHS as an economic and development, rather than welfare, issue, and to therefore convincingly challenge dominant assumptions that labour standards have a negative impact on economic growth (Rodgers 2005) or that OHS is an unaffordable luxury in developing countries (Nuwayhid 2004). It also obstructs attempts to demonstrate the links between OHS and the roles of a variety of non-conventional OHS stakeholders. Given the difficulties associated with accurately measuring costs of OHS and the low level of resources available for such research, it is important that in the future, data collection is strategically coordinated and directed for the purposes of both persuading and motivating appropriate stakeholders to invest in (or lobby for) the

improvement of OHS for all workers, and for providing accurate OHS information for the formulation of effective OHS intervention strategies.

Previously neglected ‘costs’ of worker injury and illness that might be considered in such a process include:

- the impact on the employment of an injured or ill worker
- the income and living standards impact on workers and their dependents
- the burden on health care services
- the impact on and responsibility of unpaid carers within the household
- spill over environmental costs
- spill over public health costs
- the knock-on effects to the state as provider-of-last-resort
- the productivity costs for businesses, including informal enterprises

The lack of attention paid to OHS for informal workers can also be explained by the large scale invisibility of informal work itself in national employment data. For small scale mining the inadequacy of accurate information also applies within the very department responsible for its support. While the constraints to data collection are acknowledged it seems they are in some ways overstated by the participants of this study and are certainly not insurmountable given a well designed strategy with some dedicated resources.

Significant progress made on data collection methods and analysis for informal work and informal enterprises by WIEGO and the ILO-led Expert Group on Statistics for the Informal Economy (ILO 2002a) could assist here. Further, the mining consultant made a useful suggestion that cross-country data collection should be carried out by instructing local governments, municipalities and ward councils, as well as the Department of Education and Health, to identify any informal mining activities operating within their jurisdiction boundaries or close to their buildings or service points. Perhaps if funds were provided by an external agent such as the ILO, and matched by the DME, such an initiative could be piloted first in one province and lead to the development of a national small scale mining database.

8.5 Concluding remarks

This study was small and constitutes only a limited exploration of the opportunities for, and constraints to, extending OHS to informal workers. The study has highlighted some important broader issues however, and not least of these is that labour protection must be understood and tackled in terms of the realities of the changed world of work and the very real challenges of poverty and other sources of vulnerability faced by those in precarious and informal employment. Research and policy approaches that fail to embed themselves in the context within which informal workers operate will lead to inappropriate and ineffective recommendations and strategies.

The usefulness of a sector approach, as applied in studies on informal work and social protection (e.g. Barrientos and Barrientos 2003 and Doane et al 2003), has been reinforced here for exploring potential responses to informal workers' labour protection needs. While many of the suggestions emerging from the literature regarding the conservative nature of conventional OHS mechanisms, as well as the doubtfulness of a proactive response from other potential stakeholders, have been confirmed through this research, working within a sector framework has revealed some important opportunities, including the potential OHS role of formal mining companies, which would otherwise have gone neglected. It has also importantly challenged previous recommendations from within the OHS discipline as overly simplistic and inappropriate. The suggestion that informal workers would be better protected if OHS responsibilities were transferred to primary and public health care services for example (e.g. Barten et al 1996; Loewenson 1999; London 1993 and Nuwayhid 2004), overlooks industry specific OHS challenges that the Department of Health would be unqualified to tackle. Further, the analysis here has identified that while the Department of Health may have an important role to play, it is unrealistic to expect any one stakeholder to take over full responsibility for the labour protection of informal workers. In resource constrained contexts a more grounded and effective response would likely involve breaking down the problem to find where different stakeholders could most appropriately get involved. This approach is not straightforward however, and progress will never be made as long as stakeholders, and

particularly government institutions, remain within the confines of their own vertically driven mandates.

With these clear constraints in mind the continuing importance of existing regulatory mechanisms cannot easily be dismissed. Indeed, as Unni and Rani (2003) argue in their analysis of social security for informal workers, the inadequacy of orthodox methods does not mean abandoning the institutions through which they have been historically delivered but that such mechanisms must be reoriented towards, and be more responsive to, the changing nature of work. In moving towards achieving this position in relation to work health and safety, this study has reinforced the need for a broader conceptualisation of OHS – one that benefits from the technical expertise and knowledge of the OHS profession, but is not constrained by its often technocratic and conventional approach.

The nature of small scale mining in South Africa, and in particular its short and locally oriented supply chains, serves to limit the relevance of the small number of alternative international tools for OHS protection identified in the literature, such as codes of conduct, because they depend on consumer pressure in mainly export oriented sectors. Again, attention is therefore naturally drawn back to the role of existing conventional international OHS mechanisms and particularly those administered by the ILO and the WHO. The study found no evidence of any direct involvement of these two organisations within small scale mining in South Africa and some suggestions have been made as to how they could usefully participate at the sector and local level in the development of more appropriate and co-ordinated OHS strategies. However, given the general and continuing inflexibility of mainstream OHS mechanisms to the needs of informal workers at a much broader level, it is simply not enough for the ILO or the WHO to call for the extension of OHS to all. Rather both organisations have a responsibility to reflect on how their own recommendations and guidelines may work to constrain government responses and reinforce the dependence of OHS regulation on formal employment structures and resource intensive mechanisms. As mentioned, the former point even applies to the ILO's own guidelines on OHS for small open-cast mines (ILO 2001a).

As noted in Chapter 3, the South African government is currently planning to harmonize OHS legislation and create a National Occupational Health and Safety Council. One danger is that if harmonization is simply seen as an administrative procedure it is likely to produce an even more centralised and vertically driven OHS system that will therefore be even less able to respond to informal worker needs. The delays in implementing this harmonization plan (Adams et al forthcoming) mean that now is an opportune time to more thoroughly review the limitations of existing OHS mechanisms in relation to the growing numbers of informal workers in South Africa. The findings of this study emphasize the crucial importance of ensuring that such a review is not simply tagged on as a stated intention at the end of a new policy, as was the case for the 1998 Minerals and Mining Policy (DME 1998), but instead plays an integral role in the formation of the new OHS policy and framework itself.

In conclusion, Skinner (2000) rightly argues that the institutional location of support for and/or regulation of informal workers should reflect their status as credible economic agents. In a context where mainstream conventional labour regulation mechanisms are failing to respond to the changing world of work, this line of thinking must be pursued further to question the appropriate and effective institutional location(s) of informal worker labour protection. Indeed, labour standards and worker security for those employed in the formal economy have been long term concerns for governments internationally. As the economic potential of the informal economy is increasingly recognised in development debates and, in some cases, policies, it is imperative that such concerns are also firmly integrated into the support strategies developed to promote growth opportunities for the working poor.

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Appendix 1

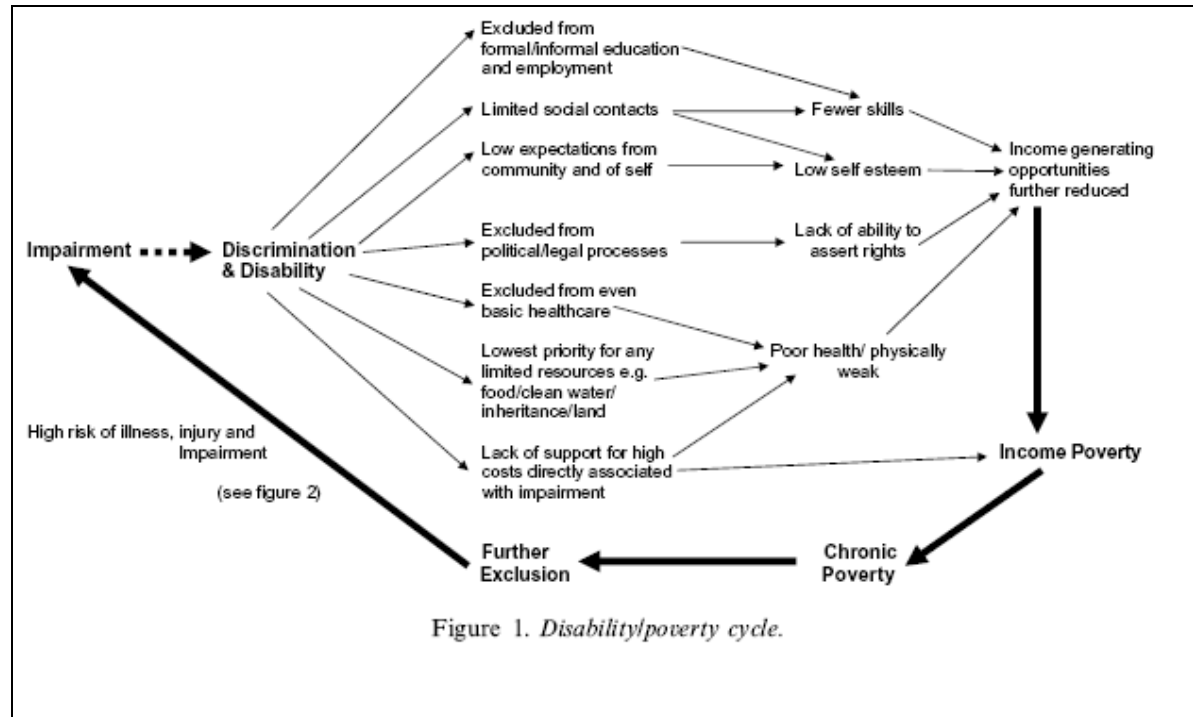
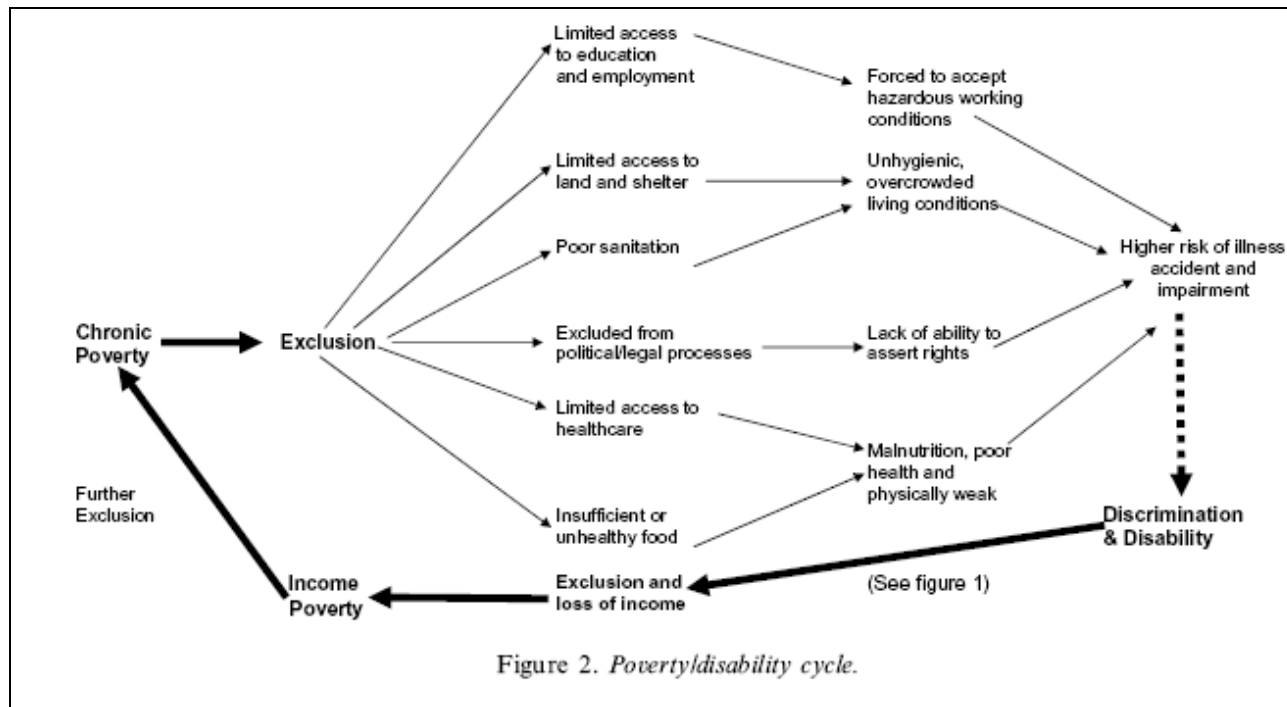


Figure 1. Disability/poverty cycle.

Source: Yeo (2001)

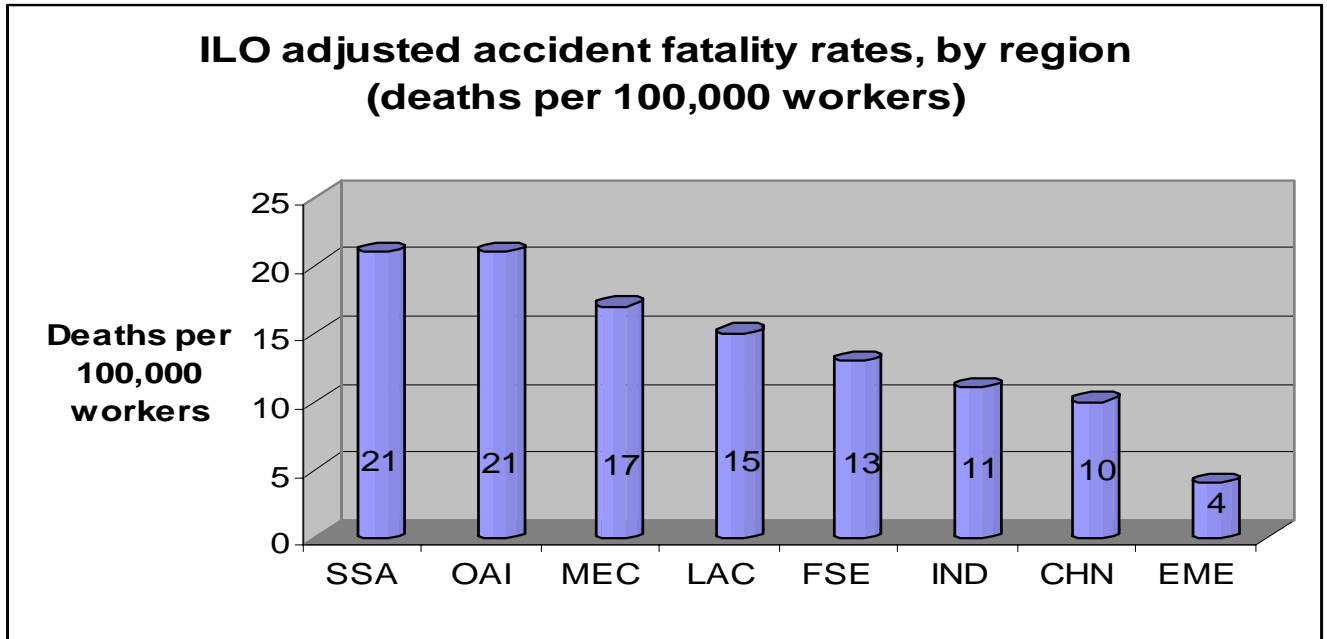


Source: Yeo (2001)

Appendix 2

Occupational Accidents, 2002

The World, according to World Bank Regions, Source: www.ilo.org/safework



World Bank
Regions:

EME Established Market Economies;
FSE Formerly Socialist Economies of Europe
IND India
CHN China
OAI Other Asia and Islands
SSA Sub-Saharan Africa
LAC Latin America and the Caribbean
MEC Middle Eastern Crescent

Appendix 3

Challenges to the protection of mine workers' health and safety in South Africa

Occupational safety	<p>-Figures suggest little change in the average fatality and injury rates since 1994. Gold mining has improved since the Leon Commission (from 77% to 63.2% of mining fatalities), however platinum has deteriorated significantly and now accounts for 17% of mining fatalities (compared to 5% in 1994).</p> <p>-Fatality rates remain high and miners in South Africa face approximately 3 times the risk of being killed at work than do miners in Australia and the US.</p>
Occupational health	<p>The number of workers exposed to hazardous levels of airborne pollutants remains alarmingly high. However, despite criticisms from the Leon Commission, comprehensive and reliable national health data remains largely unavailable. Data from the Compensation Commissioner shows that the number of compensation cases is continuing to rise in all industry sectors, with the exception of asbestos.</p>
Approach to occupational safety hazard reduction	<p>-There is widespread failure to implement existing technological solutions to falls of ground hazards (the largest cause of accidents). This is particularly the case for gold mining. High injury rates could be substantially reduced by improving enforcement of control techniques.</p> <p>-Inspectors largely focus on immediate remedies to identified substandard conditions rather than tackling underlying causes for their existence in the first place e.g. failings in the mine's management systems.</p>
Approach to occupational health hazard reduction	<p>-A large number of inspectors still seem to consider safety issues to be of paramount importance at the expense of occupational health. This appears to be as a consequence of ignoring new guidelines and a continuing perception that health is the responsibility of specialist occupational hygiene inspectors.</p> <p>-There is too much dependence on personal protective equipment in relation to hazards rather than tackling the problem at source.</p> <p>-The attachment of levy rates to compensation claims rather than non-compliance raises the concern that it may be more attractive, in financial terms, for mines to pay compensation levies, rather than control health hazards.</p>
Position of Mine Health and Safety Inspectorate (MHSI) within the DME	<p>The current location of the MHSI within the DME raises the possibility of a perceived conflict between health and safety and the DME's other goals of efficiency and economic growth. Strategies need to be employed to prevent compromising health and safety standards.</p>
Policy Unit	<p>The absence of a policy unit within the MHSI impedes continual development of H&S policy and the integration of mining H&S policy with other government departments' policies and regulations.</p>
Organisation and staffing	<p>-currently no formal training is provided on the role and function of being a mines inspector.</p> <p>-the time spent enforcing standards at mines is limited for a number of reasons. Less than 200 of the MHSI's 256 posts are active field inspectors. Furthermore, this figure includes mine survey, occupational hygiene, occupational medicine and machinery inspectors. Many of the field inspectors are also required to undertake both operational and legislative development duties.</p> <p>-Inspectors in over-capacitated regions (due to mine closure) are not being re-deployed to regions where mining activities are expanding.</p> <p>-centrally located regional offices mean inspectors spend a great deal of time travelling rather than inspecting</p>
Budgets	<p>-Budget allocation from National Treasury was 25% less than requested. Funding shortfalls are likely to limit implementation of statutory MHSI responsibilities and lead to a focus on only the major mining accidents and disasters</p> <p>-The budget for MHSI was fixed by the DME from 1997 and only rises with inflation. This leaves little room for expansion of MHSI services or for enhanced terms and conditions for inspectors. With a total workforce of around 383,000 in 2001 the current budget translates to an approximate expenditure of R200 per head per year on H&S inspection services (this is compared to \$700 (or R7000¹) per head in the US.</p>
Databases and trends	<p>Currently there are no systems available to enable inspectors to readily analyse accident data and trends and to therefore monitor performance and identify problematic mines more rapidly.</p>
Culture and attitude to health and safety	<p>-There is no hard evidence of major attitude changes towards mine H&S within the bigger mining houses. There is still strong evidence of H&S being 'systems' and paperwork driven, rather than adopting the broader 'risk assessment' and 'standards setting' approach.</p>
Worker participation	<p>Full involvement of workers' representatives and effective operation of a mine H&S committee, is a prime indicator of true management commitment to health and safety, and to cultural change. Generally there is inadequate involvement of personnel from company H&S committees.</p>

Adapted from IMC and The Resolve Group (2003)

¹ Currency conversion given from original text. An up to date conversion would be approximately R4400.

Appendix 4

Table of phase two interviewees

Interview code	Position	Department/Organisation	Location	Date
M	Manufacturing Manager	Corobrik	Corobrik KZN office, Durban	
N	Mining Inspectorate with responsibility for small scale mining	Mining Inspectorate, Department of Minerals and Energy	DME Regional office, Dundee	11/10/05
P	Mining Consultant, also previously Director of DME KZN Regional Office until 2000	Environmental & Mineral Development Consultants cc Trading as Enviromin	Dundee	11/10/05
Q	Development Officer	Economic Development, Newcastle Local Municipality	Newcastle Municipal offices, Newcastle	11/10/05
R	External Relations Manager founder member of KZN branch of SAWIMA	Ticor South Africa	Ticor South Africa, Empangeni	14/10/05
S	Deputy Director of Small Scale Mining (SSM regional official)	Small Scale Mining Directorate, Department of Minerals and Energy	University of KwaZulu-Natal, Durban	20/10/05
T	Small Business Support Officer	Small Business Support, eThekweni Metropolitan Municipality	Small Business Support offices, Durban	24/10/05
U	Planning Manager	Ndwedwe Local Municipality	Ndwedwe Local Municipality offices, Ndwedwe	25/10/05
V	Environmental and Water Affairs Officer and Chairperson of Ndwedwe Ceramics Board of Trustees	Department of Environmental and Water Affairs, and Ndwedwe Ceramics	Department of Environmental and Water Affairs, Durban	31/10/05
W	SMME Officer	Mining Qualifications Authority	Telephone interview	24/10/05
X	Key Informant	Ndwedwe Ceramics	Various	
Y	Key Informant	Council for Geosciences	Telephone interview	
Z	Key Informant	Intuthuko Blaaubosch Mining Trust	Various	

Appendix 5

Example Worker Interview Script for Blaaubosch

<p>Interviewer name _____ Date _____ Interview location _____</p> <p><i>Read and ask respondent to sign informed consent form before proceeding with interview.</i></p> <p>A. General Information: Age: _____ Sex: _____ Highest Education Level: _____</p> <p>B. Employment Information:</p> <p>1. Can you explain to me the work that you do? [Process to get the clay/coal and make bricks; tools; work on and off the mine; how many bricks made]</p> <p style="padding-left: 40px;">How many years? How many hours each day? Days off? Rest time? How much do you earn?</p> <p>2. Is the work you do today different in anyway to the way you worked when you first started? [details]</p> <p>3. Why did you start working here?</p> <p>4. Do you work for yourself or are you employed by someone else?</p>	<p>5. Does anyone help you to do this work?</p> <p>6. Do you have any children that help you do this work? How do they help?</p> <p>7. Do any members of your family or household also do this work?</p> <p>8. How did you learn how to do this work?</p> <p>9. Have you received any kind of training for the work? [if so give details, training from who?]</p> <p>10. Is there anything that you would like to learn more about to improve your work?</p> <p>11. What do you like about your work?</p> <p>12. What aspect or part of your work would you like to change? How could it be changed? Who could change it?</p> <p>13. How much do you earn from doing this work? [make sure you ask how often this amount is earned, weekly, every two weeks, per month]</p> <p>14. Do you have to pay for the land (and materials for the bricks) with this money?</p>
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15. You have told me how much you earn, how many people do you support from your income?

16. Do you do any other work to support yourself and your family?

17. How long do you think you will continue doing this work?

C. Health and safety:

1. Are there any parts of your work that you find difficult or you dislike?

2. Is there any aspect of your work that is dangerous or harms your health?

If yes, specify what it is. What harm does it do to you?

3. Have you ever suffered any accidental injury while at work in the last year?

Yes___ No___

If yes, how many times and details of how it happened

4. Have you ever suffered any other accidental injuries while at work in the past (i.e. before last year)?

Yes___ No___

If yes, what kind of injuries, how many times and how did they happen

If yes to either 3 or 4:

Have you ever had an injury that stopped you from working for any length of time in the last year? (if yes, and how long?)

Ever?

Have you ever had an injury at work that caused you to consult a doctor or to visit a health clinic or hospital in the last year?

Ever?

Do any of your injuries still interfere with your ability to work now? (If yes, how?)

5. Do you know any other worker who in the last year suffered from any injury while at work? *(if needs prompting go through list and if yes to any ask how many times, give any details of how any significant injuries occurred and major causes of any common minor injuries in box below)*

a) Broken bones/fractures		b) Sprain, strain, dislocation	
c) Concussion, internal injuries		d) Amputation	
e) Crushings or blows		f) Bruising	
g) Damage to the head		h) Other wounds, superficial injuries e.g. cuts	
i) Poisoning/exposure to toxin		j) Burns/scalds	
k) Viral, bacterial, infectious illness		l) Eye injury	
m) Electric shock		n) Asphyxia (lack of oxygen)	
o) Other, specify			

Details of how major injuries occurred and common causes of minor injuries

I am now going to ask you about health problems or illness due to work.

6. In the last 12 months would you say that your health has improved, stayed the same or got worse? Why?

7. Have you had any health problems or illnesses during the past 12 months that were related to your work? If yes, give details

8. Have you had any health problems or illnesses during the past 12 months that you think were made worse by your work? If yes, give details

9. The list below asks about specific health problems. For each, ask if they have these problems, if yes ask if they think they are caused or made worse by their work or work environment and how:

Have you suffered any.....	Work related?	If yes, how is it related to your work or work environment?
..pain or problems in your throat, nose or sinuses?	Y/N	
..breathing difficulties or lung pain (e.g. asthma, TB, pneumonia)	Y/N	
.. hearing loss	Y/N	
..pain or problems in you neck, shoulder, arm, wrist or hand	Y/N	
..pain or problems in your back or hips	Y/N	
..pain or problems in your legs or feet	Y/N	
..eye strain or problems	Y/N	
..damage to internal organs (e.g. liver, kidney)	Y/N	
..skin diseases or infections	Y/N	
..headaches	Y/N	
..heart or blood pressure problems	Y/N	
..work related stress or depression	Y/N	
Other, specify the problem(s)		

10. Has anyone at work been affected in the same way?

Yes___ No___ If yes, Number:_____

Details

11. Has anyone at your work passed away due to an accident at work?

Yes___ No___ If yes, Number:_____

Details

12. Has anyone in your workplace passed away due to an illness related to work?

Yes___ No___ If yes, Number:_____

[Details]

13. What do you think should be done to help prevent these kind of problems in the future?

14. If respondent has demonstrated that they are aware that there work is unsafe in the last section, either through injury or health problems for themselves or other workers, ask the following:

You have told me about some of the dangers to health and safety of your work, can you explain to me why you and other people continue to work in these conditions?

15. Where do you get drinking water from while you are working?

16. What toilet facilities do you use while you are working?

17. Do you or does anyone else at your work ever use any kind of safety equipment while working? [e.g. mask, helmet, boots] if no, why not?

[if no] **Has anyone ever supplied you with such equipment? Why don't you use it?**

[if yes] **what kind and who supplied them?**

18. What kind of safety equipment would you like to make your work safer or easier?

19. Have you ever received any information or training on how to improve health and safety at work? [if yes ask question a and b]:

a) Who gave the training and what was it?

b) Did you make any changes at work following the training?

20. Has anyone else ever tried to show you how to do your work differently to improve your health and safety?

21. What things to do with your health and safety would you like to know more about?

22. Who do you think should help to improve your health and safety?

23. If you see any hazards or something that is unsafe on the site what would you do?

24. Is there any person that you would report the hazard to?

25. Do you or does anyone else on the mine have any first aid training?

[if yes] **Who gave the training?**

26. In your visits to any health services have you ever been given any advice on how to improve your health and safety at work? [if yes, details]

27. Are you ever visited at work by a community health worker? Advice?

28. Do you know if any children (under 16) are working on the mine?

[if yes] **What kind of work do they do?**

29. Other than any working children, are there any children present in the different places that you work?

[If yes] **Do you think they are safe in the workplace?**

30. Do you have any comments about your health and safety at work, or how it can be improved?

D. Organisation

1. Have any of the workers on the mine formed any kind of organisation?

[If yes] **What is the main thing the organisation(s) do(es) for its members?**

2. Do you belong to any kind of organisation with the other workers? [Details]

3. Do you have any formal gatherings or discussions with all or most of the other workers? [If yes] What are they about?

4. If you have a problem with your work or with any of the other workers is there anyone you can go to help you?

5. If any official or outsider to your work wants to get a message or some information to all of you workers, do you have any representatives they can talk to?

6. Do you know about Intuthuko Blaaubosch Mining Trust?

[if yes]

What do they do?

Are you a member?

Why are some workers members and others are not?

Is there anything you think the Trust should do differently?

7. Is there any other mining association or workers union that you have heard of that you would like to join?

E. Contact with stakeholders

1. Does the mine belong to anyone?

2. When you first started working on the mine did you have to seek permission from anyone to work here?

3. During the time that you have been working here what has been done to try and help you or any other worker?

4. Are you aware of any one or any organisation that has tried to improve your work or the income of you workers? [If yes] who and how?

5. Are you aware of any one or any organisation that has made your work more difficult? If so, who and how?

6. What (else) do you think should have been done to help the workers here on the mine?

7. Are you aware of anyone or department in local government or the municipality that has tried to improve your work or the income of you workers? [If so] Who and how?

8. What help should the government give to the workers here?

9. Have you ever attended any formal meeting or gathering with the other workers about the future of the mine and your work?

[If yes]

Who else was present apart from the workers?

What were the main things that were talked about at the meeting?

Did any of the workers speak at the meeting? [if so] what did they speak about?

F. Move to new site:

1. Do you know about a plan to close the mine in Blaaubosch?

[if yes]

Why do you think they are planning to close the mine?

2. Have you attended any meetings about the move? [Give details]

3. If the mine is closed what will you (and any other family members) do for work?

**4. Do you think the mine should be closed for safety reasons?
(If no) Are there any alternative ways to improve health and safety without closing the mine?**

5. Do you think there is any possibility you will be able to work at the new site?

6. What are the advantages of working at the new site?

7. What are the disadvantages of working at the new site?

8. Will your work be different if you move to the new site?

9. Do you think that your health and safety will improve, stay the same, or get worse at the new site? Why?

G. Conclusion

I have come to the end of my questions, is there anything else that you would like to ask me or tell me about?

Appendix 6

Ifomu yesivumelwano sengxoxo (Informed consent form in isiZulu)

Igama lami ngingu Anna Marriott. Ngenza ucwaningo ngezindlela abantu abasebenza ngazo emayini. Lolucwaningo lwenganyelwe ngu Professor Francie Lund emnyango we School of Development Studies, University of KwaZulu Natal. Yimina engiphethe lolucwaningo, uma kukhona imibuzo ungangithinta kulezizinombolo:

School of Development Studies, University of KwaZulu Natal, Durban
Tel: 031 2027831 Cell: 0823552135 Email: 204507782@ukzn.ac.za

Ngiyabonga ngokuvuma ukuxoxisana nathi kulolucwaningo. Ngaphambi kokuba siqale ngithanda ukuba wazi ukuthi:

- ukuzibandakanya kwakho kulolucwaningo akunanzuzo ozoyithola
- unelungelo lokunqaba ukuphendula imibuzo
- unelungelo lokuyeka noma inini

Ingxoxo phakathi kwethu iyimfihlo futhi iyosetshenziswa abantu abaqondene nocwaningo kuphela. Igama lakho liyosetshenziswa ngesikhathi sisaxoxa emva kwalokho akukho lapho liyovela khona. Ngabe uzimisele yini ukuthi imininingwane osinikayona ukuthi isetshenziswe kulolucwaningo.

Ngicela wenze isivumelwano sokuthi ufunde kahle yonke into futhi uyavumelana nalokhu okubhalwe lapha.

.....(sayina)(usuku)

.....(igama eliphelele)

Bhala ikheli lakho ngezansi uma ufuna ukuthola ibhukwana uma ucwaningo seluphelile: