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DEEP AND DANGEROUS: HEALTH AND SAFETY IN OUR MINES

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SYNOPSIS

Mining is inherently a risky business. It requires enormous upfront expenditure on acquiring machinery, sinking shafts, developing and shoring up tunnels, dealing with under-ground water, holding down dust levels, storing mining waste, and hiring and training mineworkers. Often, it takes years before a new mine or shaft assumes production and begins to generate revenue to offset these heavy costs.[1]

The mining industry in South Africa is nevertheless the bedrock on which the country has been built. Though its contribution to GDP has diminished as the economy has modernised, mining remains vital to employment, investment, tax revenues, and export earnings.[2]

However, the sustainability of many mines is currently under great pressure from lacklustre commodity prices and vastly increased electricity, labour, and other input costs. Many mines are looking to reduce costs by closing shafts and cutting jobs. Some 100 000 mining jobs have been lost over the past seven years – and adverse regulation and other cost pressures could see another 100 000 jobs being shed in the future.[3]

Health and safety on South Africa's mines have long been controversial issues. Since safety is difficult to secure at deep levels, fatalities in South Africa generally far exceed those in other countries. For more than eight decades, they averaged more than 600 a year.[4]

Gold mining is particularly hazardous to health because it generates silica dust from which underground workers cannot easily be protected. Exposure to silica dust often triggers silicosis, a debilitating lung disease which causes great suffering as well as many deaths. At the same time, some 80% of South Africans have latent tuberculosis (TB), which exposure to silica dust can turn into active TB, though many other factors – from overcrowded living quarters to HIV/AIDS infection – can trigger this too.[5]

Health and safety on South Africa's mines have long been controversial issues. Since safety is difficult to secure at deep levels, fatalities in South Africa generally far exceed those in other countries. For more than eight decades, they averaged more than 600 a year.

Current health and safety issues are also bedevilled by the racial discrimination which permeated the industry for so many decades. Black mineworkers, unlike their white colleagues, were poorly skilled migrants who worked on temporary contracts and lived in demeaning and over-crowded hostels, far from their families and homes. Until black wages on the mines began to rise substantially in the 1970s, the average white cash wage (leaving aside the value of accommodation and food in mine compounds) was 16 times higher than the average black wage. Blacks were excluded from skilled jobs and management posts and were long denied trade union rights.[6]

Black mineworkers also bore the brunt of deaths, injuries, and TB on the mines (though silicosis prevalence was initially higher among whites, as further explained in due course). This greater burden of death and disease among black miners was partly because far more blacks than whites worked underground. However, blacks often had dirtier and more dangerous jobs than whites. This legacy of pervasive racial discrimination on the mines casts a long shadow over the industry today, making it all the more difficult to find the right policy balance on health and safety issues.

Why the safety challenge is so great

Mining is always dangerous, but the depths at which it often takes place in South Africa make it uniquely challenging here. Some of the country's gold mines now extend more than 4 kilometres below the surface. At these depths, virgin rock temperatures can reach up to 60°C, while rock faces are subject to great stress.

As mines push deeper, so the pressure of the rock above may rise to some 9 500 tons per square metre, which is roughly 920 times that of normal atmospheric pressure. Worse still, when rock is removed during the mining process, the pressure in the surrounding rock goes sharply up.[7]

Mineral veins are often also narrow. The vein of gold that runs for many kilometres through the Witwatersrand Basin has been compared to 'a page in a very thick book of rock'. This makes the gold seam difficult to find or to exploit. It also means that a ton of rock has to removed and crushed to recover roughly 5 grams of gold.[8]

The deeper the tunnels go, the greater is the weight of the rock above them that needs to be supported. Support systems have been greatly improved over the years, says William Joughlin, principal mining geotechnical engineer at SRK Consulting SA. However, these systems still 'have to be installed manually by people crawling in the narrow stopes'.[9]

The risk of rock bursts and rock falls is compounded by seismicity, which generally stems from the natural movement of the continental plates making up the earth's crust. 'As the plates move and shift in relation to each other, energy is released into the rock mass, causing earthquakes or earth tremors'. But seismicity is often also associated with deep-level mining. As mines go deeper, the stresses from the overhead rock mass intensify. Drilling into rock and setting off (controlled) explosions for mining purposes adds to these stresses and increases the risk of seismicity. However, 'mining-induced seismicity is still not well understood', despite R250m spent on research and major technological advances in seismic monitoring and deep level rock mechanics.[10]

In recent decades, many steps have been taken to make mines safer. For example, before either drilling or clearing occurs, roofs or hanging walls are secured with safety netting fixed to roof bolts, which is strong enough to catch most smaller rocks if they fall. 'Safety nets have proven their worth,' says Professor August Lamos, a mining engineer at the University of the Witwatersrand. 'Nets have caught rocks that would almost certainly have killed.' However, nets can only do so much, as seismic activity can unleash rubble that will overwhelm any net.[11]

As mines push deeper, so the pressure of the rock above may rise to some 9 500 tons per square metre, which is roughly 920 times that of normal atmospheric pressure. Worse still, when rock is removed during the mining process, the pressure in the surrounding rock goes sharply up.

At the same time, compressed-air rock drills have been replaced by faster (and quieter) hydro-powered ones, so drillers can spend less time at the stope face. Where possible, wholly mechanised drills are used instead to help keep mineworkers safe. New blasting methods allow water-based emulsions to be loaded swiftly and safely into blast holes and detonated electronically from the surface at a set time throughout the mine. Teams then wait for four hours to allow the dust to settle and any post-blast micro-seismicity to die down. Broken rock is loaded onto underground trains, which are electronically controlled and equipped with remote sensors to help reduce transport accidents.[12]

Many deep-level mines have tried to mechanise their operations, but this is difficult to achieve as stopes are narrow, uneven, and steep. AngloGold Ashanti, among others, has recently renewed its efforts to mechanise more fully. Its aim is to develop remotely-controlled machines which can mine narrow veins without the help of any mineworkers at deep rock faces.

Mechanisation has already been introduced at some mines, but most of the companies which have tried it have found it too costly and difficult to pursue. At present, thus, working temperatures still have to be reduced to reasonable levels by some of the largest refrigeration plants in the world. Sophisticated ventilation systems are used to provide an adequate air supply at all times, while extraneous water is kept out by powerful pumps. All employees have at their disposal self-contained self-rescue equipment, essentially a

breathing apparatus which provides at least 30 minutes of oxygen while the individual gets to a place of refuge. Explains a gold-mining *Safety Fact Sheet*: 'All underground workings are equipped with refuge bays, which are protected chambers located within 30 minutes of all working places, and which are equipped with fresh air, water, and communication devices.'[13]

All accidents and incidents are carefully investigated, while the lessons learned are shared across the industry. Typically, each shaft has its own health and safety committee, with representatives from both management and unions, and safety briefings take place at the beginning and end of every shift. Regular safety training is provided for all employees. The identification and mitigation of risks is a priority, while all risks identified underground must be communicated to management to resolve. Bonuses and incentives are increasingly being geared to 'prioritise safety over production'.[14]

Mine fatalities have come down sharply in recent decades. From 1910 to 1990, they averaged some 600 deaths a year. Between 1991 and 2010, they came down to an average of 339 a year. By 2000, annual deaths, at 282 in that year, were well down on the 482 fatalities recorded in 1994. After 2010 they decreased further: to 123 in 2011, 112 in 2012, 93 in 2013, 84 in 2014, 77 in 2015, and 73 in 2016.[15] Despite the increasing depth of many gold mines, in particular, the fatality rate on South African mines now compares favourably with international benchmarks set in countries such as Canada and Australia.[16]

At the time of writing, final figures for 2017 were not yet available. By November 2017, however, the number of fatalities had risen to 76 (already more than the 73 deaths reported in 2016). Many of these deaths were caused by seismicity for, despite all the money and effort that has been put into researching this phenomenon, seismic incidents are still impossible to predict or stop. Human error is often also a major factor in fatalities, as it is in other spheres as well.

> *The number of annual fatalities on the mines is now similar to the yearly total of deaths in construction, for instance, but fatalities on building sites pass largely unremarked. So too do an average of 13 500 deaths in road accidents every year. There are also no suggestions that roads notorious for fatal accidents should be closed.*

The number of annual fatalities on the mines is now similar to the yearly total of deaths in construction, for instance, but fatalities on building sites pass largely unremarked. So too do an average of 13 500 deaths in road accidents every year. There are also no suggestions that roads notorious for fatal accidents – for example, the Moloto Road connecting Gauteng, Mpumalanga, and Limpopo, where 158 people have been killed in a little over two years – should be closed. Nor would the closure of the Moloto or other roads be an appropriate way to end or reduce the fatalities.[17]

The accusations made over mine fatalities are often harsh and potentially inflammatory. After four recent deaths in a seismic event 3 000 metres underground, Blessings Maroba, president of the Mining Forum of South Africa, commented that 'mines cannot continue to kill people underground, that cannot be the norm'. The National Union of Mineworkers (NUM) has made similar statements, its general secretary Livhuwani Mammburu saying in 2016 that 'companies are focused on making profits and neglect the health and safety of workers'. Joseph Mathunjwa, president of the Association of Mineworkers and Construction Union (Amcu), also blames the industry, saying 'our fathers spilt their blood for these mines to be where they are today', and 'our blood [is still] spilt for them to continue to be profitable'.[18]

Mine Health and Safety Act of 1996

Initiatives to buttress safety and health on the mines go back to 1894, when the mining industry formed the Rand Mutual Association (RMA) to compensate mineworkers killed or injured in rock falls and the like.

In 1907 a Workmen's Compensation Act provided for the payment of compensation to employees permanently disabled through accidents at work. This was followed by the Workmen's Compensation Act of

1914, which required employers to provide compensation for the injuries suffered by workmen, as well as any deaths resulting from such injuries.[19]

Many other statutes of a similar kind were introduced at many different times thereafter. However, the first major development in the post-apartheid period was the adoption in 1996 of the Mine Health and Safety Act (MHSA). Under this statute, mine inspectors have wide-ranging powers to deal in various ways with dangerous conditions on the mines.

Compliance notices and safety stoppages

Under Section 55, an inspector may issue a compliance notice requiring a mining company to take specified steps to bring its operations into compliance with the MHSA. Under Section 54, an inspector is empowered to close down mining operations, in whole or part, if he has 'reason to believe' that mine conditions 'endanger or may endanger' health or safety.[20]

The Section 54 system seems to assume that mining companies will decline to stop operations for safety reasons unless they are compelled to do so by the government. In practice, however, mining companies often voluntarily implement stoppages because of safety concerns.

In recent years mining companies have become increasingly concerned about the costs of unnecessary safety stoppages imposed by the state's inspectors. In 2015 a leaked Chamber of Mines document showed that safety stoppages had risen sharply over the past four years for roughly 60% of mining companies. Since 2012, stoppages had cost the mines a total of some R13.6bn in lost revenue. The stoppages – and the losses resulting from them – had also been steadily accelerating since 2012, despite the enormous improvement in fatality figures that had been achieved.[21]

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Moreover, when fixed costs were factored in (salaries and other expenses which had to be paid irrespective of whether a mine was producing), along with the heavy costs of resuming operations after a shutdown, the true costs of stoppages were very much greater. With many mines already struggling to remain afloat, prolonged and unnecessary safety stoppages risked tipping them from profit into loss.[22]

Some mining companies see an element of vindictiveness in many of the stoppages. Said one executive: 'When you challenge a stoppage,...there is a sense that you then get bullied, you get audited, and stopped to death... It is such a mess. Nobody is making money; they are struggling to survive and nobody can afford to be singled out for [fear of] more severe treatment.'[23]

Two court judgments illustrate how unnecessary and disproportionate safety stoppages have sometimes been. In the *Bert's Bricks* case in 2010, a brick yard which did not even fall within the jurisdiction of the MHSA was closed by mine inspectors because of a worn (but not dangerous) tread on one tyre on a single forklift truck.[24] In the *AngloGold Ashanti* case in 2016, the company's entire Kopanang mine was closed because a mineworker at one small part of it had failed to return 43 unused explosive cartridges to the explosives box. In addition, four rail switches, out of some 200 across the mine, lacked rail switching devices. Yet rail switching devices simply make it easier to switch a locomotive from one track to another and have no impact on safety. The stoppage cost AngloGold some R9.5m a day in lost production.[25]

In both cases, the courts expressed outrage at what the mine inspectors had done and said they would have held them personally liable for legal costs if this had been requested. Said Judge Roger Southwood in *Bert's Bricks*: 'There were...no objective facts which would lead a reasonable person to believe that the damage to the tread would endanger...health or safety... It seems that not one of the officials properly applied his mind to the operation of the MHSA and that there was a gross abuse of the provisions of the Act.'[26]

Added Judge André van Niekerk in the *AngloGold* case: 'The starting point...is the standard of safety prescribed by the MHSA. Section 2 of the Act makes it clear that the standard is one of reasonable practicality. This is a standard that is consistent with an employer's common law obligation to provide a reasonably safe working place. By definition, this is not an absolute standard, while its nature and scope require an objective assessment of the work concerned and the hazards associated with it.'[27]

Any decision made under Section 54 of the MHSA also 'constitutes administrative action' – which meant such action has to be 'proportional'. This in turn requires 'balance, necessity, and suitability', or (in common parlance) avoiding the 'use [of] a sledgehammer to crack a nut'.[28]

The safety stoppage imposed across the entire mine was 'out of all proportion to the issues identified by the inspectors'. The inspectors were also from the 'same regional office' and were sometimes 'the same individuals' that Judge Southwood had berated in the *Bert's Bricks* case. Yet they persisted in asserting that proportionality was irrelevant and that they were entitled to 'close entire mines on account of safety infractions in a single section' and without 'specific reference to objective facts...that rendered the whole mining operation unsafe'. The MHSA had commendable purposes, the court went on, but 'that did not entitle those responsible for enforcing it to act outside the bounds of rationality'.[29]

By the time the judgment was handed down, AngloGold had lost a total of 82 800 oz of gold production to safety stoppages over the year. In the first six months alone, it had experienced 77 safety stoppages, which had reduced its production by some 44 000 oz and cost it roughly R834m in forfeited revenue. Yet only six of the 77 notices related to fatal accidents. The rest of the notices, said AngloGold CEO Srinivasan Venkatakrishnan, came not even from high-potential incidents, but were rather the result of mass audits and routine inspections. Safety stoppages had become so common that the company could no longer provide a reasonable production forecast for its South African mines, as it could not predict how many more stoppages might lie ahead.[30]

The safety stoppage imposed across the entire mine was 'out of all proportion to the issues identified by the inspectors'. Yet they persisted in asserting that proportionality was irrelevant and that they were entitled to 'close entire mines on account of safety infractions in a single section'. But the MHSA did not entitle those responsible for enforcing it to act 'outside the bounds of rationality'.

Said *Business Day* in an editorial: 'South African gold mines are technological marvels, reaching down to tremendous depths, with AngloGold Ashanti's Kopanang mine more than 4km deep. But this brings a plethora of safety challenges, including seismicity problems, heat and dust. While there is no question that the mining industry needs a firm hand when it comes to regulating safety, safety stoppages have begun to cost the industry billions... Not a single CEO would argue about the need for tough safety interventions where these are justified, [but they question] the heavy-handed approach from inspectors who order the suspension of an entire mine for a localised offence... They argue that work should be stopped in the offending area only.' The newspaper called on the DMR to pay careful attention to Judge van Niekerk's ruling, adding: '[The department] needs to nurture an industry that cannot afford to have billions in revenue stripped out of it by heavy-handed officials acting with a severity that is out of all proportion with the laws they are seeking to enforce.'[31]

Mining companies have given few details of the types of infractions for which safety stoppages have been ordered. Ron Weissenberg, a non-executive director of several mining companies and associate lecturer at Rhodes University, has provided a little more information, saying: 'Operations in which I have been involved have been served with Section 54s for things like a first aid box not being up to scratch and a faulty reverse light on a vehicle, or for the paperwork not being flawless. These things don't pose a danger and are easily dealt with by existing regulations such as Section 55 (which calls for remedial action within a specified timeframe).'[32]

Professor Weissenberg sees two underlying reasons for disproportionate safety stoppages. The inspectorate, he says, generally lacks an understanding of the industry: many inspectors have little practical experience of mining and have an administrative background, which encourages a tick-box mentality. But a deeper factor is also at play.

The government is hostile to the mining industry, which it sees as having profited unduly for decades from the ruthless exploitation of hundreds of thousands of poorly paid black mineworkers. Professor Weissenberg argues that this has made mining 'an industry of retribution'. It is seen as the archetypal villain of South Africa's apartheid past. Many in the government and civil society continue to accuse it of putting 'profits before people' in its selfish pursuit of the mineral wealth it then mostly spirits abroad. From this perspective, the DMR's eager resort to Section 54 is a symptom of a much larger problem. It reflects the government's outrage at the industry – and the DMR's apparent belief that its inspectors have both a moral and a legal duty to bring mining companies to heel.[33]

Health challenges in the mining sector

In South Africa's deep level mines, in particular, the challenges that make safety so difficult to secure often also make it difficult to protect the health of underground mineworkers. Silicosis is a major problem in the gold and coal sectors, in particular. So too is pulmonary tuberculosis (TB), which can be triggered by exposure to silica dust (though many other factors are relevant too). The employees most vulnerable to these diseases are those who blast rock and sand, such as mineworkers and stone cutters.[34]

Said the Johannesburg high court in 2016, in the *Nkala* case (as further described below):[35]

> 'Crystalline silica is a common mineral, also known as quartz, which is found in gold mines. Silica dust is generated and raised into the air by many of the processes associated with mining, such as blasting, drilling, and the handling and transport of rock and soil containing crystalline silica.

Silicosis is a major problem in the gold and coal sectors, in particular. So too is pulmonary tuberculosis (TB), which can be triggered by exposure to silica dust (though many other factors are relevant too).

> 'The process through which crystalline silica dust causes silicosis [is] briefly as follows: when the smallest particles of crystalline silica are raised into the air as part of dust in the mining process, and mineworkers are exposed to that dust, the mineworkers inhale the crystalline silica particles. Once inhaled, the dust particles are deposited in the alveolus region of the lung. Once deposited in the alveolus, the particles attack the lung cells and thus damage the lung tissue, resulting in scarring or fibrosis of the lungs,...which obstructs and impairs the normal functioning of the lung... Silicosis is an irreversible, incurable, and painful lung disease... It can be a completely disabling disease and in many cases it is fatal.'

Silicosis, especially in its most common form ('chronic silicosis'), typically takes 15 years to develop and for its symptoms to become apparent. 'Accelerated silicosis', by contrast, commonly manifests within ten years. Silicosis is a progressive disease which worsens over time, even after exposure to crystalline silica dust has stopped.[36]

As regards tuberculosis (TB), about 80% of South Africans are infected with the TB bacteria, but may not even be aware of this as the disease is latent (rather than active) within them. About 1% of the population develops active TB every year, giving an incidence rate of some 860 per 100 000, which is one of the highest rates in the world. TB is usually spread from person-to-person through the droplet nuclei that are produced with a person with active TB coughs, sneezes, or talks.[37]

TB is particularly pervasive where people live in overcrowded conditions with poor ventilation. Poverty, malnutrition and hunger also increase susceptibility to the disease. People with the suppressed immunity triggered by HIV/AIDS are particularly vulnerable. TB has long been prevalent among mineworkers, partly

because of the overcrowded hostels in which migrant workers have generally lived. In addition, though silica dust does not directly cause TB, exposure to such dust is a risk factor for the development of pulmonary TB. People with silicosis are also more vulnerable to TB infection because their immune systems are suppressed. Writes the Chamber of Mines: 'The often quoted figures are that mineworkers with silicosis are six times more likely to develop active TB, and mineworkers with silicosis and HIV are 18 times more likely to develop active TB.'[38]

South Africa is now committed to the World Health Organisation/International Labour Organisation (WHO/ILO) initiative to eliminate silicosis by 2030. In 2003 the DMR set dust mitigation targets, based on the WHO/ILO initiative, which aimed to ensure that, by December 2008, 95% of all exposure measurement results would be below the milestone level for respirable crystalline silica of 0.1mg/m^3. The further goal was to have no new cases of silicosis among previously unexposed individuals by 2013. The 2008 target was not reached, but it came close to being realised. As Gill Nelson records in a 2013 article in *Global Health Action*, 'the proportion of mines reaching 95% compliance [stood at] around 94% in 2006 [but then decreased] to less than 85% in 2010'. Though this meant the second milestone could not be met by 2013, mining companies have since committed to reducing silica dust levels even further and reaching the goal of zero new silicosis cases by 2024.[39]

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A statutory system for the payment of compensation to miners who contracted silicosis and other occupational diseases on the mines was introduced in 1911, and has thus been in place for more than a century. The initial legislation was amended at various times, and culminated in 1973 in the adoption of the current statute: the Occupational Diseases in Mines and Works Act (Odimwa).[40]

The Odimwa system

Under Odimwa, mining companies are required to pay prescribed levies into a compensation fund. Compensation is payable from this fund to mineworkers who have been found to be suffering from silicosis and other 'compensatable diseases' by a 'medical certification committee for occupational diseases' operating under the auspices of the Medical Bureau for Occupational Disease (MBOD).[41]

Odimwa is administered by the Department of Health. Under its provisions, a Mines and Works Compensation Fund (the Odimwa fund) has been established and operates under the control of the Compensation Commissioner for Occupational Diseases (CCOD). Mining companies pay levies to the Odimwa fund for all employees who carry out 'risk work' – work which could result in their contracting silicosis, TB, and other 'compensatable' diseases.[42]

When Odimwa was adopted in 1973, mineworkers of all races were entitled to its benefits, but the compensation payable to whites was much higher than that available to other groups. This racial discrimination was eliminated in 1993.[43]

Mineworkers who are certified as having contracted a compensatable disease are entitled to reimbursement for their medical expenses. They also have the right to 'one-sum' benefits from the Odimwa fund, which are calculated according to a statutory formula.[44] This formula is set out in Section 80 of Odimwa as '(A x 12) x B'. Here, 'A' represents the mineworkers' monthly wage, but the sum taken into account may not, under the current wording of Section 80, 'exceed an amount of R3 000'. By contrast, 'B' is an amount which varies (in accordance with the severity of the disease and other factors) from a low of 1.3 to a high of 2.917.

The minister of health, with the concurrence of the finance minister, has the power to 'increase any benefit' under Section 80 by notice in the *Government Gazette*. However, he has failed to exercise this power

since 2009, when the R3 000 a month limit on earnings was set. Monthly wages in the mining industry averaged R20 300 at the start of 2016, but the difference between wages actually earned and the statutory maximum cannot be taken into account.[45]

Under the formula, the one-sum benefits claimable under Odimwa are generally as follows. A mineworker who is discovered to be suffering from a compensatable disease in the 'first' (or lesser) degree is entitled to a lump sum of R47 160. A mineworker who is found to be suffering from a compensatable disease in the 'second' (or more serious) degree and has not yet received any other benefit under the Act is entitled to a lump sum of R105 000. This maximum sum is too little to yield a reasonable income. Says Wits Professor Tony Davies: 'Even if every rand were invested, it wouldn't give you a monthly income worth thinking about', especially given high inflation rates over many years.[46]

Largely because the statutory maximums have not been revised upwards by the health minister, the Odimwa fund is grossly under-resourced. A recent study by Yale University's Global Health Justice Project suggests that 'even under the most conservative assumptions, the Odimwa fund is more than R600m below the level required to cover current liabilities. It may in fact be R10 billion or more below the level required to cover the total annual costs to South African society'.[47]

The statutory compensation system under Odimwa for silicosis and TB contracted on the mines is thus flawed and profoundly inadequate. The Odimwa fund, like other statutory compensation funds (including the Road Accident Fund), has also been very poorly administered. As a result, it has failed to keep proper records of mineworkers within and outside the country, and has major backlogs in the processing and payment of miners' claims.

Autopsy figures for the period from 1975 to 2007 (taken from the records of 19 150 gold miners, 86% of them black and 14% of them white) show a silicosis prevalence of 3% among deceased black miners in 1975, as against a prevalence of 18% among whites. This changed substantially after 1975, when black mineworkers began obtaining longer contracts.

Failures in the Odimwa system

At the time Odimwa was enacted, silicosis prevalence rates among white miners were significantly higher than they were among blacks. This was largely because whites worked for longer on the mines (an average of some 23 years), while blacks had short contracts. Long employment on the gold mines increased whites' exposure to silica dust as well as the chances of the disease becoming manifest while they were still employed.

Autopsy figures for the period from 1975 to 2007 (taken from the records of 19 150 gold miners, 86% of them black and 14% of them white) show a silicosis prevalence of 3% among deceased black miners in 1975, as against a prevalence of 18% among whites. This changed substantially after 1975, when black mineworkers began obtaining longer contracts. By 2007, thus, the proportion of white gold miners with silicosis had increased to 22%, whereas the proportion of black miners with the disease had risen to 32%. Black miners were generally exposed to higher concentrations of silica dust as the work they did was dirtier and dustier.[48] Their short contracts meant, however, that they often left the mines – frequently for remote rural areas in South Africa or neighbouring countries – in the period when the disease was still latent.

The extent to which silicosis was taking hold among black miners may also have been obscured by seemingly low prevalence rates and long latency periods. The same autopsy data shows, for example, that the proportion of black miners with silicosis reached 2% after they had worked for 15 to 19 years on the mines, whereas the equivalent proportion among whites was reached after 20 to 24 years. This data also shows that the proportion of black miners below the age of 50 who had silicosis was 0.07%, whereas the equivalent figure for white miners was 0.04%.[49]

Another major factor was the migrant labour system. At the end of their contract periods, black miners

generally returned to their rural homes, where health facilities were limited. The silicosis they had contracted on the mines would commonly take ten or 15 years to develop. It was also difficult to diagnose, even with the benefit of x-ray machines, which many rural clinics in any event lacked. Migrants from foreign countries fared even worse.

Even for South Africans, the bureaucratic hurdles remain daunting. Many different documents have to be submitted to the MBOD before it will certify a diagnosis of silicosis. These include not only medical forms, but also ID documents, finger print records, and labour records showing periods worked at relevant mines. Administrative efficiency is low and the MBOD, as the *Daily Maverick* recounts, has 'towering stacks of claim records requiring evaluation, including records filed as far back as the 1950s'.[50]

When applicants eventually receive the MBOD's certification, their claim records must be sent to the Compensation Commissioner for Occupational Diseases (CCOD), who in turn sends a form back for the worker to complete. Comments Professor Jill Murray of Wits University: 'Once you've taken the medical examination, that's only the beginning of the chain of misadventure. Then you've got to get together a sheaf of papers to go with it, and...where do people get these? They don't even have electricity. Now they've got to have records of service and ID documents and all the rest of it.' If a document is missing, a clerk at the CCOD will write to a claimant asking him to supply whatever is needed. But such letters can go astray, or the further documents required may prove too difficult to find. Yet claims cannot be paid unless and until the paper trail is complete.[51]

Attempts to make Odimwa work

By 2008 the failures of the system remained so large that the Chamber of Mines launched a 'Making Odimwa Work' project. This was done in conjunction with the Department of Health and the National Union of Mineworkers (NUM). As part of this endeavour, the chamber contributed some R26m to tracking and tracing former mineworkers who might have become ill since they left the mines. It also helped improve the administration of Odimwa, and tried to ensure that the public health system in labour-sending areas had the capacity to examine people for occupational lung diseases and assist them with compensation claims.[52]

> *In 2012 health minister Dr Aaron Motsoaledi appointed Dr Barry Kistnasamy as the new Odimwa commissioner to help turn the failing system around. As Dr Kistnasamy later told MPs: 'At that stage, its offices held rooms of boxes of disorganised paper records, its phones rang unanswered, and the fund had virtually collapsed.'*

In 2012 health minister Dr Aaron Motsoaledi appointed Dr Barry Kistnasamy as the new Odimwa commissioner and mandated him to help turn the failing system around. By then, the commission had failed to submit its financial statements to Parliament since the 2009/10 financial year. As Dr Kistnasamy later told MPs: 'At that stage, its offices held rooms of boxes of disorganised paper records, its phones rang unanswered, and the fund had virtually collapsed.'[53]

In explaining this disarray, Dr Kistnasamy claims that Odimwa was initially designed to cover whites alone, and was thus unable to cope when some 500 000 or so black mineworkers became entitled to its benefits in 1993. This is not so, however, for Odimwa provided compensation for mineworkers of all races from the start (though with different benefits for different groups). The administrative chaos in the Odimwa system stems rather from other factors. It is in keeping with the inefficiency of the public service in general – and mirrors the malaise that afflicts both the Road Accident Fund and the (Workmen's) Compensation Fund established under the Compensation for Occupational Injuries and Diseases Act (Coida) of 1993.[54]

Yet another turnaround strategy was launched in May 2015, this time in the form of Project Ku-Riha (based on the Tsonga word for 'compensation'). This project aims, in particular, to help the MBOD and CCOD finalise some 100 000 certified, but unpaid, compensation claims, of which about 45% date back to

2000. These claims have not been settled for a range of reasons, including incomplete information regarding claimants, a lack of bank accounts, and the absence of the necessary identity details.[55]

Reporting to Parliament in August 2016, more than a year after the launch of the project, Dr Motsoaledi told MPs that this backlog of some 100 000 unpaid claims had been revealed through a file verification exercise. Some 700 000 additional files, including 500 000 still languishing with the MBOD, were now being examined with the help of the Chamber of Mines. However, much more data had yet to be captured, including source documents for beneficiary claims and reconciliations between the levies paid by mining companies and the payments made from the Odimwa fund.[56]

Some important progress has been made. In November 2016 Mpho Ndaba, director of revitalisation of distressed mining communities at the Department of Planning, Monitoring, and Evaluation, said that the Odimwa fund had paid out a total of some R1.4bn to some 96 770 beneficiaries over a period of some 30 years. Since February 2016, added Mr Ndaba, payments totalling R141m had been made to some 3 520 beneficiaries. More than 1 300 beneficiaries from neighbouring countries had also received a total of R51m. A tracking and tracing process with a call centre had been introduced, while more health clinics had been provided. The deputy minister of mineral resources, Godfrey Oliphant, had also launched outreach and awareness campaigns to help trace former mineworkers, while the World Bank, the Chamber of Mines, and other organisations were providing additional support.[57]

Further progress has since been made, but the data available is often inconsistent. According to a parliamentary briefing in October 2017, payouts totalling some R204m were made to some 5 300 miners and former mineworkers in 2016/17, which was well up on the R80m which had been paid out to some 1 770 claimants in the previous year. However, the commission still had a backlog of some 94 000 claims (down from 106 000 in November 2016), which had already been approved by the MBOD but had yet to be paid out. In addition, the claims of between 300 000 and 500 000 mineworkers still needed to be assessed.[58]

> *The Odimwa fund has paid out a total of some R1.4bn to some 96 770 beneficiaries over a period of some 30 years. In 2016, payments totalling R141m were made to some 3 520 beneficiaries. More than 1 300 beneficiaries from neighbouring countries have received a total of R51m.*

The CCOD's financial records remain chaotic, with major gaps in the recording of revenue received and claims submitted. Its financial statements for 2010/11 and 2011/12 were submitted to Parliament only in August 2017, while the equivalent data for subsequent financial years still has to be recorded and audited.[59]

Since 1999, the government has wanted to integrate the Odimwa and Coida systems, so as to provide a uniform compensation dispensation for all employees, including mineworkers. However, the administrative problems and payment backlogs at both the CCOD and Coida's Compensation Fund must first be resolved, it says.

The persistent failures of Odimwa have helped prompt the bringing of a number of civil suits against mining companies. However, whereas compensation under Odimwa is payable irrespective of whether mining companies have been at fault, any civil claim for damages can succeed only if the plaintiff can prove negligence and wrongfulness on the part of the defendant. This burden of proof is not easy to discharge.

The Nkala *case*

The *Nkala* case (named after the first applicant, Bongani Nkala), began in 2012 and is being brought with the help of Richard Spoor Inc, Abraham Kiewitz, and the Legal Resources Centre. Here, 69 applicants are seeking to bring a class action against 32 gold mining companies as regards the 82 gold mines under their control. The applicants' objective is to claim compensation on behalf of all current and former mineworkers who contracted silicosis or pulmonary TB while working underground on these 82 mines. Where former mineworkers have already died, the aim is to claim compensation on behalf of their dependants. As the first

step in a much longer process, the applicants applied to the Johannesburg high court for an order 'certifying' or authorising the bringing of the class action.[60]

A class action allows one or more plaintiffs to bring a lawsuit on behalf of a wider group or 'class' of people who are similarly situated. Its great advantage is that it 'allows for a single finding on the issues, which binds all the plaintiffs and all the defendants'.[61] In May 2016 the high court ruled that all the requirements for the certification of the class action had been met. This ruling has paved the way for the class action to proceed. Those eligible to join in the action include current mineworkers suffering from the diseases in issue, former mineworkers dating back to 1965, and the dependants of mineworkers who have already died. According to the court, the number of people eligible to participate in the class action could range from 17 000 to 500 000.[62]

The high court judgment has been widely hailed by commentators. However, there are many weaknesses in the ruling which will make the class action very difficult to manage when it comes to trial. It is doubtful too whether the trial court will be able to provide 'a single finding on the issues, which binds all the plaintiffs and all the defendants'. Yet this is what a class action is supposed to achieve.

Particularly noteworthy are the court's rulings that:

1 the overall consolidated class should be divided into two sub-classes, a silicosis sub-class and a TB sub-class, as those suffering from TB would not necessarily have contracted it because of silica dust and the issues for decision would be different as between the two groups;

2 a 'bifurcated' or two-stage process would be used, in which the issues common to both classes would be decided in the first stage, while the issues relevant to each sub-class would be considered in the second;

This ruling has paved the way for the class action to proceed. Those eligible to join it include current mineworkers suffering from the diseases in issue, former mineworkers dating back to 1965, and the dependants of mineworkers who have already died. The number of people eligible to participate could range from 17 000 to 500 000.

3 in the first stage, the common questions of fact would revolve around the extent to which mineworkers had been exposed to silica dust, while the common questions of law would examine whether all the mining companies had breached their legal obligations to their underground employees; while

4 in the second stage, once the common questions of fact and law had been decided (and presuming that these decisions went against the mining companies), the requirements for liability in delict would have to be met. Since such liability depends on the wrongdoing of the particular defendant, claimants would have to show that their particular employers had acted wrongfully and negligently towards them.

Explained the court: The second stage would focus on 'scrutinising and determining' the 'individual culpabilities' of the different mining companies'.[63] The mining companies could not be held 'jointly liable' for the harm suffered by the mineworkers, because the law of delict makes it clear that 'a defendant can only be held liable for his own delict and not that of another defendant'. Hence, 'the liability of each mining company would be determined at the second stage, when all the mineworkers and all the dependants of deceased mineworkers had staked their claims. At that stage, these claims would be paired against the respective mining company(ies) alleged to have committed the delict [and] each mining company would be held responsible for its own actions or unlawful omissions.'[64]

The weaknesses in this decision are legion. A class action is normally brought on behalf of a single class of claimants, but here two classes of claimants have had to be recognised because each class will have to prove a different set of facts. A class action normally involves 'the same claim against a single defendant

arising from a single wrong committed by that defendant'. But the *Nkala* case involves 32 defendants and 82 mines, each of which at different times used different means – with differing degrees of efficiency – to guard against dust and disease.

The great strength of a class action is normally that 'it allows for a single finding on the issues, which finding binds all the plaintiffs and all the defendants'. But, in the *Nkala* case, no single finding can be made.

The supposedly common questions of fact and law may be relatively quickly decided in favour of the plaintiffs – but what is to happen thereafter? As the high court ruled, the mining companies cannot be held 'jointly liable' in delict. In the second stage, each plaintiff will have to prove the delictual liability of the particular company for which he worked. If he worked for more than one company, complicated factual and legal questions as to which of them is to be held liable are sure to arise.

What might initially seem like a single – and perhaps relatively simple – class action will soon fragment into 50 000 (or more) individual claims, each of which will need to be proved and adjudicated on its own particular facts.

Some of the mining companies have petitioned the Supreme Court of Appeal (SCA) for leave to appeal against the high court ruling, arguing that this judgment failed adequately to address a number of important issues. Leave to appeal has been granted and the matter has been set down for hearing by the SCA in March 2018.[65]

Six of the biggest gold mining companies have formed a working group which is seeking to achieve a settlement that will be fair to all and sustainable for the mining industry. The group argues that a reasonable settlement 'would be preferable to a lengthy court engagement that would benefit only the lawyers'. Settling out of court would also provide more certain benefits to the mineworkers, as a court action always generates both 'losers and winners'.[66]

> *The mineworkers should long since have received the compensation due to them under Odimwa. Instead, the statutory system has largely collapsed under the weight of increasing administrative incapacity, 'leaving thousands of sick and injured workers in the lurch'.*

The six mining companies plan to establish a legacy fund to provide compensation to mineworkers made ill by silica dust. What size this fund will need to be remains uncertain, as no one yet knows how many claimants might need to be helped. By September 2017, the six major companies had set aside some R5bn for this legacy fund, while attorney Richard Spoor said that 'broad agreement' on the terms of a settlement had been reached.

The class action has focused global attention on South Africa's gold mining companies and their apparent failures to help the sick and suffering. The extent to which particular companies acted wrongfully and negligently has still to be decided by the courts (unless a settlement is indeed reached). But the mineworkers should long since have received the compensation due to them under Odimwa. Instead, the statutory system has largely collapsed under the weight of increasing administrative incapacity, 'leaving thousands of sick and injured workers in the lurch', as Mr Spoor has pointed out.[67]

Finding the right policy balance

Health and safety challenges have long been acute in South Africa's often deep and dangerous mines. They have been a profound concern for both governments and mining companies for well over a century. To a large extent, and particularly in the last 20 years, they have also been successfully addressed by the mining industry through comprehensive research, sophisticated technology, and increasingly stringent health and safety protocols, backed by employee incentives and bonuses that seek to prioritise safety over production.

The industry has embraced 'zero harm' targets for both fatalities and new cases of silicosis, and these targets are coming closer to being met by 2020 and 2024, respectively. Deaths in deep mines, given seismicity and human error, will always be difficult to prevent. But mine fatalities (at an average of some 90 deaths a year since 2012) are not much greater than those in construction and far below the average of 13 500 deaths on the roads each year.

Policy and regulation have an important part to play in safeguarding lives and health. Mining companies have always had a common law duty to provide a reasonably safe working place. The MHSA reflects and repeats that obligation. But the statute also has various provisions which are overly broad and lend themselves to selective enforcement and even to abuse.

Some safety stoppages have clearly been imposed for trivial reasons. Such abuses must stop. The relevant wording in the MHSA should be tightened up to make sure that this occurs. Inspectors who order stoppages for no rational reason should be held personally liable for any legal costs incurred in court applications to have their instructions set aside. In particularly egregious instances, they should also be held personally responsible for at least some of the enormous costs of unnecessarily halting production.

As regards silicosis and pulmonary TB, every effort must be made, as the mining industry is already intent on doing, to reduce dust emissions and protect mineworkers. The government's key obligations are to support these initiatives, applaud all successes, and resort to penalties only where these are objectively required.

The government must also maintain (if necessary, via public-private partnerships) a statutory compensation system that provides adequate compensation and is highly efficient. It should long since have increased the maximum monthly wage used in computing compensation under Odimwa from R3 000 to R20 000, which would be far closer to the current average monthly wage in mining. It should immediately take steps to integrate Odimwa with Coida, so as to the make Coida's more generous compensation formula available to mineworkers too. If the major backlogs under both these systems must indeed first be resolved, then every effort must be made to ensure that this is swiftly done.

Some safety stoppages have clearly been imposed for trivial reasons. Such abuses must stop. Inspectors who order stoppages for no rational reason should be held personally liable for any legal costs incurred in court applications to have their instructions set aside.

In the interim, the government's failure to get Odimwa working has encouraged a number of civil claims against the gold mining sector, where silica dust has always been difficult to control. However, whereas compensation under Odimwa is payable irrespective of whether mining companies are at fault, any civil claim for damages can succeed only if the plaintiff can prove negligence and wrongfulness on the part of the defendant. This burden of proof is not easy to discharge.

Great efforts and resources have been put into the *Nkala* case, which began in 2012 and was certified by the Johannesburg high court in 2016, so paving the way for this major class action to proceed. However, as earlier noted, this judgment is deeply flawed. The great strength of a class action is normally that 'it allows for a single finding on the issues, which finding binds all the plaintiffs and all the defendants'. In the *Nkala* case, however, there are two classes of plaintiffs, a plethora of defendants with differing records on dust control, and no prospect of a single judgment that will be binding on all.

The *Nkala* ruling has raised great hopes of a quick and easy resolution to the plight of thousands of people. However, if the class action proceeds to trial, those hopes are likely to be dashed. It is also unlikely that a trial will ensue, as mining companies will want to avoid the reputational damage such litigation is sure to generate. A settlement is being sought and is thus likely to be reached. Yet any settlement of this kind

is likely to provide the catalyst for many other class actions, which may also have to be settled to avoid adverse publicity.

Who knows where this process could end? What is clear, by contrast, is that the mining industry in South Africa is already in significant financial difficulty. Commodity prices remain constrained; input costs are going up (electricity alone by 19.9% in 2018 if Eskom has its way); proposed amendments to the MPRDA could yet impose both price and export controls on a host of minerals; and the 2017 mining charter, if implemented in its current form, will so erode the security of mining rights as to make the industry 'uninvestable'. Already, thus, major potential investors are turning away from South Africa to other countries where the government is less hostile and mining legislation is more stable, competitive, and certain.

Protecting health and safety in South Africa's deep and often dangerous mines is vital. But policies and laws must strike the right balance. The government should recognise and applaud all that the mining industry has done to reduce fatalities and diminish dust. DMR inspectors should not be allowed to order safety stoppages for trifling reasons, or otherwise abuse their regulatory powers. The government (with private sector help) should maintain an adequate and efficient statutory compensation system for those who contract debilitating diseases underground. And class actions should be certified only where the core requirements for such litigation, as set out by the Supreme Court of Appeal in the *Children's Resource Centre* case, have very clearly been met.

> *Says Bernard Swanepoel, a former CEO of Harmony Gold, 'If we are continuously going to look at the past, at what went wrong, we'll kill the industry. Because if you want today's investors to pay for all sins of the past, they are going to run away. And you are going to have no funding and you are not going to build the next generation of mines.'*

The legacy issues that have tainted the industry and eroded trust need also to be acknowledged. But a constant focus on the evils of the past will deter fresh investment and make it harder still for the industry to survive and thrive.

Bernard Swanepoel, a former CEO of Harmony Gold, says that 100 years of exploitative labour practices are part of the industry's problem, along with acid mine drainage and often 'inexcusably high remuneration' for executives. But he also says: 'If we are continuously going to look at the past, at what went wrong, we'll kill the industry. Because if you want today's investors to pay for all sins of the past, they are not going to do that. They are going to run away. And you are going to have no funding and you are not going to build the next generation of mines.'[68]

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DEEP AND DANGEROUS: HEALTH AND SAFETY IN OUR MINES

A risky and contentious business

Mining is inherently a risky business. Any mining investment generally starts with time-consuming and costly prospecting to identify the location, depth, and potential market value of mineral deposits. Geological mapping has become much more sophisticated over time, but it still remains an inexact science. Hence, neither the richness of ore bodies nor the practical difficulties in extracting them can easily be predicted.

Mining often also requires enormous upfront expenditure on acquiring machinery, sinking shafts, developing and shoring up tunnels, dealing with under-ground water, holding down dust levels, storing mining waste, and hiring and training mineworkers. Often, it takes years before a new mine or shaft assumes production and begins to generate revenue to offset these heavy costs. Moreover, in the words of investment analyst Neville Chester, 'once the capital has been committed, and the earth moved, and buildings and shafts built, this infrastructure is fixed and cannot be moved'.[1] This makes the mining industry particularly vulnerable to 'obsolescing bargain risks', where the host government begins to change the regulatory rules in ways that undermine the security of mining titles or greatly add to operating costs.

The mining industry in South Africa is nevertheless the bedrock on which the country has been built. Though its contribution to GDP has diminished as the economy has modernised, mining remains vital to employment, investment, tax revenues, and export earnings.

The mining industry in South Africa is the bedrock on which the country has been built. Though its contribution to GDP has diminished as the economy has modernised, mining remains vital to employment, investment, tax revenues, and export earnings.

South Africa has the benefit of virtually unparalleled mineral riches, a Citibank survey in 2010 estimating the value of its mineral resources at $2.5 trillion. This put the country far ahead of both Australia and Russia, whose resources are estimated at $1.6 trillion each. But, despite its extraordinary mineral wealth, South Africa's mining industry has performed well below its potential for the past 16 years. Even during the global commodities boom from 2001 to 2008, the country's mining industry shrank by 1% a year, while mining sectors in other states expanded by 5% a year on average.

The National Development Plan (NDP), endorsed by the ruling African National Congress (ANC) as the country's overarching policy blueprint in December 2012, recognises this poor performance as 'an opportunity lost'. The NDP acknowledges that much of the fault lies with the vague and uncertain terms of the Mineral and Petroleum Resources Development Act (MPRDA) of 2002 and its accompanying mining charter, both of which came into effect in May 2004. It thus urges that the MPRDA be amended to 'ensure a predictable, competitive and stable regulatory framework'.

However, this essential reform has yet to be achieved. Instead, the ANC is busy piloting through Parliament an amendment bill calculated to give the mining minister, Mosebenzi Zwane, an even greater range of discretionary powers, including the capacity to impose price and export controls on many mineral products. A revised version of the mining charter, gazetted by Mr Zwane in June 2017 and currently on hold pend-

ing a court challenge to its validity, is likely to made the mining industry 'uninvestable' if implemented in its current form.

The sustainability of many mines is currently also under great pressure from lacklustre commodity prices and vastly increased electricity, labour, and other input costs. In 2016 the mining industry's net profit was a mere R17bn, while in 2015 it suffered a R46bn loss. Small profits in earlier years (R5bn in 2014 and R2bn in 2013) have not sufficed, even with the better gain chalked up in 2016, to cancel out this deficit. In real terms, when the gains made are adjusted for inflation, they denote stagnation.[2]

In these adverse economic circumstances, many mines are looking to reduce costs by closing shafts and cutting their labour forces. Some 100 000 mining jobs have been lost over the past seven years, and the adverse impact of the mining charter, for one, could see another 100 000 jobs being shed.[3]

Health and safety on South Africa's mines have also long been controversial issues. Since safety is difficult to secure at deep levels, fatalities in South Africa generally far exceed those in other countries. For more than eight decades, moreover, they averaged more than 600 a year. Gold mining is particularly hazardous to health because it generates silica dust from which underground workers cannot easily be protected. Exposure to silica dust often triggers silicosis, a debilitating lung disease which causes great suffering as well as many deaths. At the same time, some 80% of South Africans have latent tuberculosis (TB), which exposure to silica dust can turn into active TB, though many other factors – from overcrowded living quarters to cigarette smoking and HIV/AIDS infection – can trigger this too.

Health and safety issues are also bedevilled by the racial discrimination which permeated the industry for so many decades. Black mineworkers, unlike their white colleagues, were poorly skilled migrants who worked on temporary contracts and lived in demeaning and over-crowded hostels, far from their families and homes. Until black wages on the mines began to rise substantially in the 1970s, the average white cash wage (leaving aside the value of accommodation and food in mine compounds) was 16 times higher than the average black wage. Blacks were excluded from skilled jobs and management posts and were long denied trade union rights.[4]

Health and safety issues are also bedevilled by the racial discrimination which permeated the industry for so many decades. Black mineworkers were poorly skilled migrants who worked on temporary contracts and lived in demeaning and over-crowded hostels. Until black wages on the mines began to rise substantially in the 1970s, the average white cash wage was 16 times higher than the average black wage.

Black mineworkers also bore the brunt of deaths, injuries, and TB on the mines (though silicosis was initially higher among whites, as further explained in due course). This greater burden of death and disease among black miners was partly because far more blacks than whites worked underground. However, blacks often had dirtier and more dangerous jobs than whites. The legacy of pervasive racial discrimination on the mines casts a long shadow over the industry today, making it all the more difficult to find the right policy balance on health and safety issues.

This issue of *@Liberty* seeks to explain current safety and health rules and explore the ways in which they are being implemented. Against this background, it aims to identify some policy reforms that might help strike a more appropriate balance in safeguarding both the country's mineworkers and the sustainability of the mining companies for which they work.

Why the safety challenge is so great

Mining is always dangerous, but the depths at which it often takes place in South Africa make it uniquely challenging here. Some of the country's gold mines now extend more than 4 kilometres below the surface. At these depths, virgin rock temperatures can reach up to 60°C, while rock faces are subject to great stress. As mines push deeper, so the pressure of the rock above may rise to some 9 500 tons per square metre,

which is roughly 920 times that of normal atmospheric pressure. Worse still, when rock is removed during the mining process, the pressure in the surrounding rock goes sharply up.[5]

Mineral veins are often also narrow. The vein of gold that runs for many kilometres through the Witwatersrand Basin has been compared to 'a page in a very thick book of rock'. This makes the gold seam difficult to find or to exploit. It also means that a ton of rock has to removed and crushed to recover roughly 5 grams of gold.[6]

Dr Declan Vogt, director of the Centre for Mechanised Mining Systems at the Wits School of Mining Engineering, says that South Africa's deep gold mines face three major technical challenges. First, rock at the depths being mined is under great pressure, which can easily lead to rock bursts (spontaneous violent fractures of rock). Moreover, the deeper the tunnels go, the greater is the weight of the rock above them. Increasingly sophisticated mechanisms are needed to ensure sufficient support for this great mass of rock. Support systems have been greatly improved over the years and have significantly reduced the risk, says William Joughlin, principal mining geotechnical engineer at SRK Consulting SA. However, these systems 'have to be installed manually by people crawling in the narrow stopes'.[7]

The second major technical challenge, says Dr Vogt, is increasing rock temperatures at greater depths. Good refrigeration is vital to make working conditions bearable, so ice and water are pumped into underground reservoirs at costs that typically make up 20% or more of the running costs of a mine. Thirdly, as mines expand underground, working areas become further and further away from the shafts which service them. Mineworkers often spend three hours out of an eight-hour shift travelling underground, while breakdowns or shortages of supplies cannot be quickly remedied. 'Even if needs can be communicated by telephone, it may still be the next day before necessary supplies arrive at the workplace'.[8]

Rock bursts are compounded by seismicity, which generally stems from the natural movement of the continental plates making up the earth's crust. But seismicity is often also associated with deep-level mining. As mines go deeper, the stresses from the overhead rock mass intensify. Drilling into rock and setting off (controlled) explosions for mining purposes adds to these stresses and increases the risk of seismicity.

Four major gold mining companies, AngloGold Ashanti, Gold Fields, Harmony, and SibanyeGold, identify two primary causes of injuries and fatalities: 'fall of ground' and accidents linked to transport and machinery. As their 2014 *Safety Fact Sheet* records, 'the term "fall of ground"...relates to unexpected movement of the rock mass and the uncontrolled release of debris and rock'. This can result simply from the pressures of gravity or from rock bursts.[9]

Rock bursts are compounded by seismicity, which generally stems from the natural movement of the continental plates making up the earth's crust. 'As the plates move and shift in relation to each other, energy is released into the rock mass, causing earthquakes or earth tremors'. But seismicity is often also associated with deep-level mining. As mines go deeper, the stresses from the overhead rock mass intensify. Drilling into rock and setting off (controlled) explosions for mining purposes adds to these stresses and increases the risk of seismicity. However, 'mining-induced seismicity is still not well understood, despite major technological advances in seismic monitoring and deep level rock mechanics'.[10]

According to the *Safety Fact Sheet*, 'all seismic activity in South Africa is monitored and recorded by the Council for Geoscience, which is part of a global seismic monitoring network. Internationally, seismologists concur that the timing, magnitude and exact location of a seismic event cannot be predicted with any certainty. As a result, in previous decades, events were unexpected and devastating, and caused many fatalities and injuries in the workplace. In the past 20 years, more than R250m has been spent on research by the industry, resulting in a far greater understanding of the risks of seismicity and....leading to better ways of mitigating and avoiding occurrences.'[11]

Seismic monitoring is carried out by installing state-of-the-art equipment at surface stations within min-

ing districts. These stations send data in real time to the central data centre in Pretoria, where it is automatically located and the information can be monitored on a dedicated website. More seismic stations are being established in the Bushveld Igneous complex to help the industry gain a greater understanding of the factors making for rock falls.[12]

In the last ten years or so, adds Mr Joughlin, Japanese and South African researchers have been working together to analyse mining-induced seismicity. Japan brings funding, seismological expertise, and new technology, while South Africa's deep level mines offer Japanese researchers the opportunity to install instrumentation close to the source of small earthquakes and use this to monitor the ground response in great detail. The Safety in Mines Research Advisory Committee established under the Mine Health and Safety Act of 1996 has also launched a research project into permanent areal support systems, such as welded mesh installed against overhead rock surfaces between other supports. Says Mr Joughlin: 'Permanent areal support systems could address rock falls and rock burst damage that occurs in between rock bolts or timber props. [But] these support systems are very difficult to implement in narrow stopes, with current mining methods'.[13]

Transportation accidents are the second major cause of fatalities and injuries. Generally, these involve trackless mobile machines and underground rail systems, but they can also arise from collisions between people in confined areas or close to moving equipment. Underground fires can also cause injuries and deaths, often from smoke inhalation which ventilation systems cannot clear.[14]

In recent decades, many steps have been taken to make mines safer. For example, before either drilling or clearing occurs, roofs or hanging walls are secured with safety netting fixed to roof bolts, which is strong enough to catch most smaller rocks if they fall. 'Safety nets have proven their worth,' says Professor August Lamos, a mining engineer at the University of the Witwatersrand. 'Nets have caught rocks that would almost certainly have killed.' However, nets can only do so much, as seismic activity can unleash rubble that will overwhelm any net.[15]

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At the same time, compressed-air rock drills have been replaced by faster (and quieter) hydro-powered ones, so drillers can spend less time at the stope face. Where possible, wholly mechanised drills are used instead to help keep mineworkers safe. New blasting methods allow water-based emulsions to be loaded swiftly and safely into blast holes and detonated electronically from the surface at a set time throughout the mine. Teams then wait for four hours to allow the dust to settle and any post-blast micro-seismicity to die down. Broken rock is loaded onto underground trains, which are electronically controlled and equipped with remote sensors to help reduce transport accidents.[16]

Many deep-level mines have tried to mechanise their operations, but this is difficult to achieve because stopes are narrow, uneven, and steep. AngloGold Ashanti, among others, has recently renewed its efforts to mechanise more fully. Its aim is to develop remotely-controlled machines which can mine narrow veins without the help of any mineworkers at deep rock faces. As Dr Vogt reports, 'AngloGold Ashanti is developing reef boring as a technique on its deep gold mines, [while] Sibanye and Gold Fields [are] also likely to move to fewer people directly involved in underground mining. Instead, operators will sit on the surface working remotely, and artisans will maintain machines in safe, cool workshops underground.'[17]

Mechanisation has already been introduced at some mines, but most of the companies which have tried it have found it too costly and difficult to pursue. At present, thus, working temperatures still have to be reduced to reasonable levels by some of the largest refrigeration plants in the world. Sophisticated ventilation systems are used to provide an adequate air supply at all times, while extraneous water is kept out

by powerful pumps. All employees have at their disposal self-contained self-rescue equipment, essentially a breathing apparatus which provides at least 30 minutes of oxygen while the individual gets to a place of refuge. Explains the *Safety Fact Sheet*: 'All underground workings are equipped with refuge bays, which are protected chambers located within 30 minutes of all working places, and which are equipped with fresh air, water, and communication devices.'[18]

All accidents and incidents are carefully investigated, while the lessons learned are shared across the industry. Typically, each shaft has its own health and safety committee, with representatives from both management and unions, and safety briefings take place at the beginning and end of every shift. Regular safety training is provided for all employees. The identification and mitigation of risks is a priority, while all risks identified underground must be communicated to management to resolve. Adds the *Safety Fact Sheet*: 'All production bonuses at every level are strongly influenced by safety performance. Safety is also a key performance indicator for supervisors, managers, and executives.' Bonus and performance incentive are also now being revised (under a 'cultural performance framework' endorsed in 2011) to ensure that they 'prioritise safety over production'.[19]

Stringent safety requirements are set out in the Mine Health and Safety Act (MHSA) of 1996. This gives the Mine Health and Safety Inspectorate of the Department of Mineral Resources (DMR) important responsibilities in safeguarding the well-being of mineworkers. The Chief Inspector of Mines is empowered by the MHSA to scrutinise mines for safety risks and close down mining operations, in whole or part, where necessary (see *Compliance notices and safety stoppages*, below). A tripartite Mine Health and Safety Council has also been established under the Act to help counter safety risks. It includes representatives of the government, the mining industry, and organised labour, and is chaired by the Chief Inspector of Mines. Its primary role is to advise the mining minister on health and safety requirements. It also works closely with the Mining Qualifications Authority (MQA), which helps address skills shortages in the mining industry and ensure that it has sufficient numbers of competent people trained in mine safety requirements.[20]

Figures on mine fatalities in South Africa can be tracked over a period of more than a hundred years. Between 1991 and 2010, they averaged 339 a year. By 2000, annual deaths, at 282 in that year, were well down on the 482 fatalities recorded in 1994. After 2010 they decreased further: to 123 in 2011, 112 in 2012, 93 in 2013, 84 in 2014, 77 in 2015, and 73 in 2016.

Mine fatalities over the years

Figures on mine fatalities in South Africa can be tracked over a period of more than a hundred years. According to these statistics, annual mining deaths in the period from 1911 to 1930 averaged 587. Thereafter, they averaged 611 a year for the next 20 years (from 1931 to 1950), 606 a year over the following two decades (from 1951 to 1970), and 624 a year for the next 20 years, from 1971 to 1990. Between 1991 and 2010, they averaged 339 a year. By 2000, annual deaths, at 282 in that year, were well down on the 482 fatalities recorded in 1994. After 2010 they decreased further: to 123 in 2011, 112 in 2012, 93 in 2013, 84 in 2014, 77 in 2015, and 73 in 2016.[21]

However, fatality figures of this kind do not take account of how the workforce may have expanded or decreased over time. Fatalities are thus commonly also measured as a ratio of deaths per hundred thousand employees in service. On this basis, the fatality rate on South Africa's gold mines dropped from 4.67 in 1905 to 1.27 in 1995. On coal mines, it decreased from 6.38 to 0.53, while on other mines it declined from 2.60 to 0.26. On a different measure – the number of deaths per million hours worked – the overall fatality rate in the mining industry has fallen significantly in recent years: from 0.3 in 2003 to 0.08 in 2014, 2015, and 2016.[22]

Fatalities through falls of ground have deceased by 93% over the past 20 years, mainly through improvements in rock engineering techniques and the use of safety nets at stopes to catch rocks before they

plummet to the ground. In 2003, falls of ground accounted for 131 out of 267 deaths, but in 2015 they caused 22 deaths out of 77. Similarly, of the 73 deaths in 2016, only 24 (33%) resulted from falls of ground, while 10 (14%) resulted from accidents with machinery and transportation and 15 (21%) from accidents of other kinds. Almost 80% of these 73 deaths (57 fatalities) took place in South Africa's gold and platinum mines, where depths are generally greatest. Despite the increasing depth of many gold mines, in particular, the fatality rate on South African mines now compares favourably with international benchmarks set in countries such as Canada and Australia.[23]

In 2003, when fatalities totalled 267, the mining industry pledged to bring down deaths by 20% a year to an ultimate goal of zero. In 2014, at a 'health and safety tripartite summit', the industry reaffirmed that the goal of zero fatalities would be achieved by 2020. Fulfilling this commitment will require major improvements in mining methods. It will also require mechanisation and new technologies that remove individuals as far from the rock face as is possible. But most gold and platinum seams are too narrow and steep for machines, while technology cannot remove human error. According to Professor Lamos at Wits, the government and the industry are strongly committed to the goal of zero harm. However, he warns, mining conditions in the country are so challenging that 'you won't ever get a year in South African mining without fatalities'.[24]

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At the time of writing, final figures for 2017 were not yet available. By November 2017, however, the number of fatalities had risen to 76 (already more than the 73 deaths reported in 2016). Among those killed were five employees at Harmony Gold's Kusasalethu mine (outside Carletonville on the west Rand), who died following a seismic event roughly 3 000 metres below the surface. In another major incident, four mine workers died at Heaven Sent's Tau Lekoa mine when there were trapped underground after another seismic event. Responding to the deaths at Kusasalethu, Mr Zwane stressed that it was time to put an end to mine fatalities. An investigation had been launched, which he hoped would prove 'a turning point' in halting further accidents and deaths. DMR spokesman Fidel Hadebe added that the department would 'certainly be stepping up efforts around this issue, including closing operations for non-compliance with safety regulations'.[25]

However, despite all the money and effort that has been put into researching seismicity, seismic incidents are still impossible to predict or stop. Human error is often also a major factor in fatalities, as it is in other spheres as well. The number of annual fatalities on the mines is now similar to the yearly total of deaths in construction, for instance, but fatalities on building sites pass largely unremarked. So too do an average of 13 500 deaths in road accidents every year. There are also no suggestions that roads notorious for fatal accidents – for example, the Moloto Road connecting Gauteng, Mpumalanga, and Limpopo, where 158 people have been killed in a little over two years – should be closed. Nor would the closure of the Moloto or other roads be an appropriate way to end or reduce the fatalities.[26]

The accusations made over mine fatalities are often also harsh and potentially inflammatory. After the Kusasalethu seismic event, for instance, Blessings Maroba, president of the Mining Forum of South Africa, commented that 'mines cannot continue to kill people underground, that cannot be the norm'. The National Union of Mineworkers (NUM) has made similar statements, its general secretary Livhuwani Mammburu saying in August 2016, for instance, that it was unacceptable for mineworkers to continue dying while no action was taken against the companies involved. 'Companies are focused on making profits and neglect

the health and safety of workers,' he claimed. Joseph Mathunjwa, president of the Association of Mineworkers and Construction Union (Amcu), also blames the industry, saying 'our fathers spilt their blood for these mines to be where they are today', and 'our blood [is still] spilt for them to continue to be profitable'.[27]

Mineworkers sometimes also put the blame primarily on mining companies, saying they are 'pressurised to reach production targets' and face disciplinary charges if they refuse to work in areas they consider unsafe. Paul Mardon, head of occupational health and safety at Solidarity, a trade union, adds that the pressures on employees can often be complex and contradictory. People may be disciplined for refusing to carry out drill instructions they consider dangerous, but they can also face penalties for 'going into a workplace that they know is unsafe'. The upshot, he says, is that 'they just keep quiet and go in and do the work'.[28]

Recent retrenchments have reportedly added to the pressures on mineworkers. Mines have retrenched to cut labour costs, but also need to show investors they can deliver on turnaround strategies and meet production targets. This, says the NUM, puts great pressure on employees to ignore safety measures, such as mandatory rest periods underground, so they can keep volumes up.[29]

Production bonuses, some mineworkers say, also encourage people to cut corners to earn extra money. This may happen, for example, when a stope has to be made safe after blasting. To save time, the roof bolts needed to buttress the overhead rock may be placed wider apart than safety standards require. This is likely to make the area more vulnerable to subsequent seismic events. To counter-balance such incentives, production bonuses are generally accompanied by safety bonuses for employees, which are reduced when safety standards are compromised. But human agency may again weaken the system. Says Mr Mardon: 'If you pay people a health and safety bonus, they do not report the incidents.'[30]

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Mine Health and Safety Act of 1996

Initiatives to buttress safety and health on the mines go back to 1894, when the mining industry formed the Rand Mutual Association (RMA) to compensate mineworkers killed or injured in rock falls and the like. (In 1911 the government adopted legislation to help mineworkers infected with silicosis and other occupational lung diseases, see *Silicosis and pulmonary TB*, below, while the RMA developed insurance cover for mineworkers exposed to other occupational diseases, including heat stress, hearing loss, and exposure to toxic vapours.)[31]

On the strength of having established the RMA, the mines were exempted from the various workmen's compensation statutes that were enacted from 1907 onwards.[32] (In 1907 a Workmen's Compensation Act provided for the payment of compensation to employees permanently disabled through accidents at work. This was followed by the Workmen's Compensation Act of 1914, which required employers to provide compensation for the injuries suffered by workmen, as well as any deaths resulting from such injuries.)[33]

Many other statutes of a similar kind were introduced at many different times thereafter. However, the first major development in the post-apartheid period was the adoption in 1996 of the Mine Health and Safety Act. Under this statute, mine inspectors have wide-ranging powers to deal in various ways with dangerous conditions in mines.

Compliance notices and safety stoppages

Under Section 55, an inspector may issue a compliance notice requiring a mining company to take any steps that he considers necessary to bring its operations into compliance with the MHSA. Under Section

54, however, an inspector is empowered to close down mining operations, either in whole or in part, so as to uphold the health and safety of mineworkers. To implement a safety stoppage under Section 54, the mine inspector must have 'reason to believe that any occurrence, practice or condition at a mine endangers or may endanger the health or safety of any person at the mine'. This test includes an objective element, but is inordinately broad. Provided it is met, the inspector is empowered to issue a variety of instructions. He may order that:[34]

- 'operations at the mine or a part of the mine be halted;
- 'the performance of any act or practice at the mine be suspended or halted';
- the employer take specified steps within a stipulated period to rectify the situation; or
- all affected persons (other than those needed to carry out the specified steps) be moved to safety.

An inspector's instruction takes effect from the time fixed by him. It must, however, be confirmed as soon as practicable by the Chief Inspector of Mines, who may opt to vary or rescind it.[35]

When the MHSA was first adopted, it included provisions barring the issuing of a stoppage instruction until the inspector had allowed both managers and employee representatives 'a reasonable opportunity to make representations'. This right applied unless the inspector had 'reason to believe that the delay caused by allowing representations could endanger the health or safety of any person'. These clauses were deleted from Section 54 in 2008.[36]

Mining lawyers have queried whether inspectors are striking the right balance between Section 55 (the issuing of a compliance order) and Section 54 (a partial or entire closure instruction). Stoppages in themselves can add to safety risks: once a mine is restarted, there is an increased risk of seismic shifts, which may result in rock falls and fatalities.

Mining lawyers have queried whether inspectors are striking the right balance between Section 55 (the issuing of a compliance order) and Section 54 (a partial or entire closure instruction). Said Warren Beech, head of mining at global law firm Hogan Lovell, in 2014: 'Section 54 work stoppages may have improved attitudes towards safety and helped generate a safety culture over the past few years. However, there are cases where a Section 55 could have been issued by an inspector, as opposed to closing down an entire mining operation in terms of Section 54.' Some safety challenges were also better addressed under Section 55, he added. By contrast, a safety stoppage under Section 54 was a drastic measure that could have many adverse impacts on mineworkers. Such stoppages undermined employee morale, upset the production rhythm of teams, and reduced remuneration, which 'often included a safety bonus component'. Stoppages in themselves could also add to safety risks: once a mine was restarted following a shutdown, there was an increased risk of ground disturbances and seismic shifts, which might result in rock falls and fatalities.[37]

The Section 54 system seems to assume, moreover, that mining companies will decline to stop operations for safety reasons unless they are compelled to do so by the government. In practice, however, mining companies often voluntarily implement stoppages because of safety concerns. In 2014, for instance, Gold Fields CEO Nick Holland shut down most of the South Deep mine for three months because he was unhappy about its support systems. The costs of the stoppage were high, but 'hard decisions on safety' sometimes had to be taken, he said.[38]

In recent years mining companies have become increasingly concerned about the costs of unnecessary safety stoppages imposed by the state's inspectors. In 2015 a leaked Chamber of Mines document showed that safety stoppages had risen sharply over the past four years for roughly 60% of mining companies. Since 2012, stoppages had cost mines (which were already struggling under diminished commodity

prices) a total of some R13.6bn in lost revenue. The stoppages – and the losses resulting from them – had also been steadily accelerating since 2012, despite the enormous improvement in fatality figures that had been achieved.[39]

Speaking on condition of anonymity (for fear of reprisals from the DMR), industry spokesmen told *Business Day* journalist Allan Seccombe in September 2015 that stoppages were increasing at a time when mines were already 'under tremendous financial pressure from weak commodity prices and the retrenchment of thousands of workers'. The costs of stoppages were also rising steadily: from R2.55bn in 2012 to R4.8bn in 2015, which was almost double the 2012 figure. Moreover, when fixed costs were factored in (salaries and other expenses which had to be paid irrespective of whether a mine was producing), along with the heavy costs of resuming operations after shutdowns, the true cost of stoppages in 2015 alone was likely to be R9.7bn. Extrapolated across the industry, that would amount to a R16bn loss in a single year. Using the R12 500 wage demand put forward by the Association of Mineworkers and Construction Union (Amcu), the cost of the stoppages represented more than 106 600 salaries.[40]

James Wellsted, spokesman for Sibanye Gold, added that excessive safety stoppages were putting the future of the industry at risk. 'Revenue from the first 20 days of any month goes solely to covering fixed costs. Any work stoppage (or strike action) slashes the revenue production needed to develop and even to sustain the mines,' he said.[41]

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Chamber of Mines CEO Roger Baxter said his organisation supported safety stoppages where these were necessary to protect mineworkers. But 'Section 54s were applied inconsistently and unfairly' and 'often involved shutting down unaffected areas as well'. In many cases, he added, a Section 55 compliance notice would have sufficed to secure remedial action and resolve the safety problem.[42]

One of the mines affected in 2015 was Impala Platinum (Implats), which had 54 safety stoppages in the first six months of the year and lost 52 000 ounces of platinum group metals, worth R720m. The salaries paid to employees who were not producing, coupled with other costs in maintaining operations, amounted to some R600m at suspended mines. It also took several days to restore output levels after shutdowns, adding to their overall costs. Implats CEO Terence Goodlace said the company 'supported every single stoppage where there was a danger to safety and health'. He urged, however, that stoppages should be localised instead of compromising entire shafts.[43]

Some mining companies believe there is an element of vindictiveness in many of the stoppages. Said one executive: 'When you challenge a stoppage,...there is a sense that you then get bullied, you get audited, and stopped to death... It is such a mess. Nobody is making money; they are struggling to survive and nobody can afford to be singled out for [fear of] more severe treatment.'[44]

Mining lawyer Hulme Scholes agrees that Section 54 notices are sometimes used to 'victimise' mining companies which have spoken out against the DMR. But the chief inspector of mines, David Msiza, denies this, saying that all the Section 54 notices issued in 2014, for instance – which numbered close on 1 100 – had been 'issued as a corrective measure to protect the lives of mineworkers'. The stoppages were also proving effective, he went on, for fatalities were now well down, with 84 deaths in 2014 as opposed to 615 in 1993.[45] However, this assessment ignores the steady improvement in fatality figures evident for many years before the safety stoppages accelerated in 2012.

There are many examples of safety stoppages having been imposed in the absence of any pressing

threat to the health or safety of mineworkers. Sibanye's Kroondal Platinum mine in Rustenburg (North West), for example, was shut for two days after a vehicle driver failed to brake, injuring himself (see *Sibanye's court application*, below). According to trade union Solidarity, which generally represents highly-skilled mine employees, some members of rival unions 'misuse their relationship with an inspector in order to have a long weekend created through the closure of a mine from a Thursday to a Monday, owing to a fictional or bona fide complaint'.[46]

Court rulings on 'disproportionate' stoppages

In a limited number of cases, businesses have applied to the courts to set aside or otherwise rule on the validity of Section 54 stoppages. One key case involved a company called Bert's Bricks, while the second was brought by AngloGold Ashanti.

The Bert's Bricks case

This case concerned Bert's Bricks, a company which had been conducting clay mining operations on three properties near Potchefstroom (North West). The company also manufactured bricks on a portion of one of these properties, using clay mined from all three of them. In 2009, however, the business was restructured. Bert's Bricks continued with clay mining operations, while a second company, Explo-Clay (Pty) Ltd, took over the brick-making operations. When Bert's Bricks converted its mining permit in accordance with the MPRDA, it excluded the land on which the brick-making operation was conducted. The two businesses were legally and physically separate, with a distance of some 450 metres between them. Bert's Bricks mined the clay and then sold it to Explo-Clay for use in its brick-making operations.[47]

> *In May 2010 DMR inspectors ordered the entire brick yard to close because of a worn tread on one tyre of a single forklift. They also ignored a high court ruling confirming a brick yard is not a mine.*

On a number of occasions after the business was restructured, inspectors from the DMR carried out inspections at the brick yard as well as the mine. They continued to do so even though the Johannesburg high court had confirmed (in the *Terra Bricks* case in 2007) that the provisions of the MHSA do not apply to a brick yard because it is not a mine. DMR inspectors also closed the brick yard down for two days in July 2009, costing Explo-Clay a loss of some R450 000.[48]

In May 2010 DMR inspectors again went to the brick yard, where they inspected a forklift owned by Explo-Clay and used by it to help make bricks. The directors of the company referred the inspectors to the *Terra Bricks* judgment, which the DMR officials dismissed as 'the mere opinion of one judge'. The inspectors then pointed to damage to the tread of one of the forklift's three tyres. Later the same day, Bert's Bricks was given one hour to make representations as to why an order suspending all trackless machinery should not be issued.[49]

The company immediately wrote to the inspectors pointing out that the forklift in issue was used solely in making bricks, rather than in mining; that the suspension of all trackless machinery would result in the immediate stoppage of all brick-making activities ('about 300 employees would stand idle'), and that this would have a devastating impact on the business. Moreover, the tyre with the worn tread had already been replaced.[50]

The following day the inspectors then issued a Section 54 notice which halted all brick-making operations instructing that the use of all trackless mobile machines should be stopped. They claimed that the condition of the machines was also unsatisfactory ('for eg, excessive oil leaks and worn-out tyres') and that operators were not filling in pre-start check lists.[51]

Inspection of the forklift and its worn tyre by experts showed that there was no oil leak and that the damage to the tyre was superficial and posed no safety risk. All worn or damaged tyres on all trackless vehicles were nevertheless replaced, while operators were reminded in writing of the need to complete

pre-start safety checklists. All these measures were taken by 20th May 2010, when a letter was sent to the inspectors reiterating that the MHSA did not apply to the brick-making operation, stating that the inspectors' factual findings were incorrect, and asking that the Section 54 notice be withdrawn. The DMR did not respond to this request.[52]

As a result of the safety stoppage, the brick yard was closed for three days and suffered a loss of close on R915 000. The companies applied to the Pretoria High Court for an order declaring that the MHSA did not apply to the brick works and asking that the Section 54 notice be set aside. The DMR made no attempt to respond and was not present at the court hearing.[53]

Here, Judge Brian Southwood began by ruling that the Section 54 notice had in any event fallen away because the companies had complied with the conditions it laid down. The court also found that the brick making operation was not a mine, and granted an order confirming that it was not subject to the MHSA. But the circumstances in which the Section 54 notice had been issued also merited brief consideration, said the court, because the inspectors had 'egregiously' failed to comply with the statutory requirements.[54]

Section 54, the court went on, authorised safety stoppages only if an inspector had 'reason to believe' that health and safety might otherwise be endangered. Continued Judge Southwood:[55] 'This clearly means that –

(1) objectively a state of affairs must exist which would lead a reasonable man to believe it may endanger the health or safety of any person at the mine; and

(2) the inspector may only give an instruction which is necessary to protect the health and safety of that person.'

The inspector had failed to consider whether the brick yard was a mine, inspected only a single forklift, and done nothing to establish that 'the damage to the tread of [one] tyre...would endanger the health or safety of any person'. This was 'a gross abuse of the provisions of the Act'.

Here, the inspector had failed to consider whether the brick yard was a mine, inspected only a single forklift, and done nothing to establish that 'the damage to the tread of [one] tyre...would endanger the health or safety of any person'. Said the court:[56]

> There were therefore no objective facts which would lead a reasonable person to believe that the damage to the tread would endanger...health or safety... There were also no objective facts to justify suspending the operation of the forklift, let alone all the trackless mobile vehicles... If only the one forklift was involved, it was not necessary to suspend the operation of all the other trackless mobile vehicles. The order/direction was clearly out of all proportion to what the two [inspectors] found.
>
> It seems that not one of the officials properly applied his mind to the operation of the MHSA and that there was a gross abuse of the provisions of the Act. This is most disturbing. This litigation has resulted in a waste of the state's funds (taxpayers' money) and a waste of the court's time. It is striking that, throughout these proceedings, the DMR's officials have failed to give proper consideration to the [companies'] complaints and have not deemed it necessary to dispute their factual allegations.

Overall, said Judge Southwood, there had been such a gross abuse of the provisions of the MHSA that he would have granted a costs order against the inspectors in their personal capacity, if the companies had asked for this.[57]

The AngloGold Ashanti case

On 17th October 2016 a senior inspector of mines in the North West conducted an inspection at level 44

of section 12 of AngloGold's Kopanang mine at Orkney in the province. The inspector found that one miner working at 44 level had failed to return 43 unused explosive cartridges to the explosives box, or take other measures to store them safely. He also found that more than four rail switches lacked rail switching devices. On the same day, the inspector issued instructions under Section 54 which prohibited the use of explosives and all underground tramming operations throughout the mine. (Tramming operations involve the movement of blasted ore and rock via underground rail trucks and the transportation of workers, among other things.) These instructions effectively halted all operations at Kopanang and cost AngloGold some R9.5m in lost production for every day that the stoppage remained in effect.[58]

The following day, AngloGold (with the support of all the trade unions represented at the mine) made representations to the principal inspector of mines in the North West, asking him to set aside the instructions. But the principal inspector refused the request, instead issuing three additional instructions. As the judgment records: 'These included an explosives audit (which included the retraining and reassessment of miners on the proper handling, control and management of explosives), an audit of all underground rails and rail switches (in addition to the retraining and re-assessment of local operators and guards on the procedure for pre-use inspections), and the introduction of measures to ensure that the mine's safety declaration procedure was complied with.'[59]

Said the judge: 'It is patently clear that 44 level comprises a very small portion of the total mining operation and conditions there are not axiomatically representative of conditions elsewhere on the mine.' Moreover, no specific conditions had been found at 44 level which rendered the whole mine unsafe.

The following day the mining company appealed to the DMR's acting chief inspector of mines, but was told he needed time to consider the appeal. On 21st October, the company applied to the Labour Court to have the Section 54 instructions set aside. Later that same day, the chief inspector dismissed the company's appeal and confirmed all the safety instructions previously issued. On 24th October AngloGold secured an interim court order, which allowed it to continue with mining operations pending the hearing of its application. The Labour Court handed down its judgment soon thereafter, on 4th November 2016.[60]

Judge André van Niekerk began his ruling by noting that level 44 was 'minute in comparison with the mining operations' taking place across the whole mine'. Some 90 employees (2% of the total) worked at 44 level, whereas some 4 200 people were employed at the entire mine. There were 28 rail switches at 44 level, as opposed to 206 across the mine. Said the judge: 'It is patently clear that 44 level comprises a very small portion of the total mining operation and conditions there are not axiomatically representative of conditions elsewhere on the mine.' Moreover, no specific conditions had been found at 44 level which rendered the whole mine unsafe.[61]

AngloGold argued, moreover, that the prohibition on using explosives across the whole mine was disproportionate, as 'the non-compliance by the individual miner was an isolated case'. The company did not dispute that the miner had erred by not placing the 43 unused explosive cartridges back into the explosives box. He had also failed to ensure the safe storage of the cartridges or to report the issue to his shift bosses. AngloGold was busy rectifying this by auditing the mine for similar deviations, providing refresher training for all miners on the need to comply with explosive controls, and withdrawing affected miners from the workplace until they had been retrained.[62]

The inspectors had complained that 'more than four rail switches were observed without rail switching devices'. However, the absence of these devices posed no danger, as their purpose was simply (in the words of the court) to 'facilitate the switching of a locomotive from one track to another'. Hence, there was nothing to suggest that 'the transportation of persons by means of locomotives on the whole mine was unsafe'. By contrast, the prohibition of all tramming operations throughout the mine meant that no movement

of vehicles could take place underground. This not only required employees to walk often long distances to stopes, but effectively put an end to all mining operations.[63]

In support of their Section 54 notices, the inspectors claimed that AngloGold had previously been 'a culprit for flouting mine health and safety standards', including 'the regulation dealing with explosives'. But these statements were 'generalised assertions', said the court, which had no bearing on the key issue. This was whether the flaws identified at 44 level 'endangered or might endanger the health or safety of any person at the entire mine'. Under Section 54, an inspector was required 'objectively to establish a state of affairs which would lead a reasonable person to believe' that the health and safety of workers across the mine might be endangered. Any Section 54 instruction also had to be 'limited' in its extent to what was 'necessary to protect health and safety'.[64]

Said Judge van Niekerk: 'The starting point...is the standard of safety prescribed by the MHSA. Section 2 of the Act makes it clear that the standard is one of reasonable practicality. This is a standard that is consistent with an employer's common law obligation to provide a reasonably safe working place. By definition, this is not an absolute standard, while its nature and scope require an objective assessment of the work concerned and the hazards associated with it.'[65]

Said Judge van Niekerk: 'The starting point...is the standard of safety prescribed by the MHSA. Section 2 of the Act makes it clear that the standard is one of reasonable practicality. By definition, this is not an absolute standard.'

Any decision made under Section 54 of the MHSA also 'constituted administrative action' and was subject to review under the Promotion of Administrative Justice Act (PAJA) of 2000. 'Proportionality was [also] an element of the right to reasonable administrative action' under Section 33 of the Constitution, the court went on. The essential elements of proportionality were ' balance, necessity, and suitability', including 'the use of lawful and appropriate means to establish the administrator's objective'. They were summed up in the axiom that 'one ought not to use a sledgehammer to crack a nut'.[66]

The court also referred to the *Bert's Bricks* case, where Judge Southwood had found 'there were no objective facts which would lead a reasonable person to believe that damage caused to a single trackless mobile vehicle necessitated the suspension of the operation of all trackless mobile machinery'. Said Judge van Niekerk: 'The present case is on all fours with this decision. In relation to the rail switching devices, an objective state of affairs did not exist which would lead a reasonable person to believe that it might endanger the health or safety of any person at the mine. Secondly, in respect of both the explosives and the tramming instructions, an instruction that applied to the whole of the mine was not necessary... No circumstances existed on 44 level which rendered the whole mining operation unsafe.' The instructions imposing a prohibition across the entire mine in respect of explosives and tramming were thus 'out of all proportion to the issues identified by the inspectors'. At most, these instructions 'ought to have been confined to level 44'.[67]

The court also referred to Judge Southwood's criticisms of the inspectors in *Bert's Bricks* and his suggestion that 'the responsible officials should bear the costs of the litigation'. Continued Judge van Niekerk:[68]

> 'The present case...involves the same regional office and, indeed, some of the same individuals... The office and officials engaged in it appear not to have heeded the caution issued by the High Court in *Bert's Bricks*. It is also astonishing...that [they] clearly fail to appreciate the conceptual framework within which they are required to discharge their duties. For example, it was submitted that proportionality was irrelevant and that an inspector need not consider that principle when issuing instructions because it did not feature as a criterion in Section 54 of the MHSA. As this case illustrates, the [inspectors] are clearly under the impression that they are empowered to close entire mines on account of safety infractions in a single section or on

a single level, without specific reference to objective facts and circumstances that render the whole mining operation unsafe. The MHSA has as its commendable purpose the promotion of a culture of health and safety and the protection of the health and safety of those employed in mining operations. But that does not entitle those responsible for enforcing the Act to act outside the bounds of rationality.'

Like Judge Southwood in the *Bert's Bricks* case, Judge van Niekerk touched on whether the relevant officials should be held personally liable for the legal costs of the litigation. If AngloGold had sought to hold the inspectors personally liable for these costs, he said, he would have given this 'serious consideration'. However, 'in the absence of any submission that costs should be awarded on a punitive basis', the court instead ruled that 'costs should follow the result' in the normal way. The interim order earlier granted was confirmed, while costs were awarded to AngloGold. By then, the unwarranted safety stoppage had cost the company R48m in lost production, excluding the costs of restoring the mine to full operation.[69]

By the time the judgment was handed down, AngloGold had lost a total of 82 800 oz of gold production to safety stoppages over the year. In the first six months alone, it had experienced 77 safety stoppages, which had reduced its production by some 44 000 oz and cost it roughly R834m in forfeited revenue. Yet only six of the 77 notices related to fatal accidents. The rest of the notices, said AngloGold CEO Srinivasan Venkatakrishnan, came not even from high-potential incidents, but were rather the result of mass audits and routine inspections. Safety stoppages had become so common that the company could no longer provide a reasonable production forecast for its South African mines, as it could not predict how many more stoppages might lie ahead.[70]

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Reported *Business Day*: 'The safety stoppages have long been the bane of executives' lives. When there is a fatality or accident, management agrees to a stoppage to tackle the underlying problem. But to shut down a mine on a technicality comes with many unintended negative consequences.' One of the problems is the length of time it takes to get mines operating again. Says Chris Sheppard, AngloGold's head of South African mines: 'It can take two to three weeks to ramp up from zero to plus 90% of production volume, and that's debilitating for any business.'[71]

Sibanye's court application

In January 2017 Sibanye Gold (now Sibanye-Stillwater, following the company's acquisition of the Stillwater platinum mine in the United States) served summonses on Mr Zwane, the acting chief inspector mines, Mr Mbonambi, and two senior inspectors in North West, claiming R26.8m from them in their personal capacities for an unwarranted safety stoppage at its Kroondal platinum mine in August 2016.[72]

An employee was killed at one of Kroondal's five shafts by a vehicle he failed to immobilise properly with both a handbrake and stop blocks. This prompted an inspection by Clifford Dlamini, inspector of mines in the North West. He found various faults, including sub-standard or missing seatbelts on some vehicles, a missing door latch, and a failure to complete some checklists properly. In addition, one underground haulage way was too narrow for vehicles to pass each other, while a number of fire extinguishers had not been checked during the month.[73]

Between 19th and 26th August, Mr Dlamini, together with the principal inspector of mines in North West, Monageng Mothiba, and the acting chief inspector, Mr Mbonambi, issued various Section 54 instructions in relation to the entire mine. Among other things, they halted the use of all trackless mobile machinery underground and ordered the withdrawal of their operators for retraining. Following legal threats from

Sibanye and talks between the company and the inspectorate, the Section 54 order was changed so as to suspend operations solely at the Bambanani shaft, where the accident had occurred. Sibanye nevertheless suffered damages of R26.8m arising from the closure of the mine, for which it said the inspectors and the minister should be held personally liable.[74]

In its court papers, Sibanye argued that the inspectors had acted in a draconian way by 'ignoring the localised nature of the accident' and acting beyond their powers under the MHSA. It said their actions were 'irrational, arbitrary, capricious, and were taken for an improper purpose, which is not permitted under the Act'. Sibanye CEO, Neal Froneman, added that Kroondal, which employed some 9 500 people, had suffered at least nine safety stoppages in the 18-month period from July 2015 to December 2016. These had cost the mine some R180m, turning it into a marginal operation. He warned that the DMR was 'destroying hundreds of millions, if not billions of rand, in value' through unnecessary safety stops. This was also putting thousands of jobs at risk.[75]

When Sibanye objected to the safety stoppage, the DMR was quick to hit back, saying that 'society can ill afford to compromise human lives in the interest of commercial gains'. In January 2017, when the news of Sibanye's court application broke, the DMR accused Sibanye (along with AngloGold) of 'refusing to comply with the mining laws of the country'. It also stressed that the two companies had 'together...been responsible for the deaths of 19 mineworkers in 2016'. Mr Zwane stated that Section 54 of the MHSA was intended to 'safeguard the lives of employees', adding: 'Profit-making and the health and safety of workers are not mutually exclusive and it is unacceptable that these companies are choosing to cheapen the lives of mine workers in this manner... If companies cannot mine safely, they should not be mining at all, and should allow other potential holders who will respect the laws of our country to continue mining.'[76]

Mr Froneman reacted angrily, saying the accusation that Sibanye did not take safety seriously was 'absolute crap'. The heavy-handed decisions of mine inspectors could tip the mine from being sustainable to being in the red. 'Who loses? The workers, who'll get laid off if those mines become unviable.' He added that the most dangerous part of a miner's job today was travelling on the road to work.[77]

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Impact of safety stoppages on other mines

In 2012 Northam Platinum applied to court to interdict a safety stoppage it regarded as unwarranted. As *City Press* reports, 'this issue was top of the mining sector's agenda until the strike waves of 2012, 2013, and 2014 moved it on to the back burner'. (In 2013, for instance, the mining industry lost some 516 000 working days to strikes, while in 2014 it lost more than 9.6 million working days, largely because of a five-month stoppage by some 70 000 miners on the country's major platinum mines.)[78]

In November 2016 Ben Magara, CEO of Lonmin plc, the third biggest platinum mining company operating in South Africa, said the enterprise had lost 164 production days in its financial year to the end of September through some 50 different Section 54 stoppages. The previous year, the company had lost 173 days of production to 36 stoppages. Added Mr Magara: 'Section 54 stoppages are being enforced more broadly and are taking longer to lift... Not only do safety stoppages affect production, they also have a negative impact on safety routines and care must be taken to safely shut down work areas so that, on their return, workers do not enter a work area that is hazardous.'[79]

Royal Bafokeng Platinum joined in the criticism, complaining of a 'sharp increase in the frequency and severity' of safety stoppages that did not appear to be aligned with tackling non-conformity with safety

standards. The increase in such stoppages was 'very disappointing', it added, and meant that it could no longer offer the same acceptance and support of these orders as it had in the past.[80]

Commented *Business Day* in an editorial: 'South African gold mines are technological marvels, reaching down to tremendous depths, with AngloGold Ashanti's Kopanang mine more than 4km deep. But this brings a plethora of safety challenges, including seismicity problems, heat and dust. While there is no question that the mining industry needs a firm hand when it comes to regulating safety, safety stoppages have begun to cost the industry billions... Not a single CEO would argue about the need for tough safety interventions where these are justified, [but they question] the heavy-handed approach from inspectors who order the suspension of an entire mine for a localised offence... They argue that work should be stopped in the offending area only. Some executives have spoken about the limited skills sets and low staffing levels at regional [DMR] offices where these inspectorates are based.' The newspaper called on the DMR to pay careful attention to Judge van Niekerk's ruling in the *AngloGold* case, adding: '[The department] needs to nurture an industry that cannot afford to have billions in revenue stripped out of it by heavy-handed officials acting with a severity that is out of all proportion with the laws they are seeking to enforce.'[81]

Mining companies have given few details of the types of infractions for which safety stoppages have been ordered. Ron Weissenberg, a non-executive director of several mining companies and associate lecturer at Rhodes University, has provided a little more information, saying: 'Operations in which I have been involved have been served with Section 54s for things like a first aid box not being up to scratch and a faulty reverse light on a vehicle, or for the paperwork not being flawless. These things don't pose a danger and are easily dealt with by existing regulations such as Section 55 (which calls for remedial action within a specified timeframe).'[82]

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Professor Weissenberg sees two underlying reasons for disproportionate safety stoppages. The inspectorate, he says, generally lacks an understanding of the industry: many inspectors have little practical experience of mining and have an administrative background, which encourages a tick-box mentality. But a deeper factor is also at play. The government is hostile to the mining industry, which it sees as having profited unduly for decades from the ruthless exploitation of hundreds of thousands of poorly paid black mineworkers. Professor Weissenberg argues that this has made mining 'an industry of retribution'. It is seen as the archetypal villain of South Africa's apartheid past. Many in the government and civil society continue to accuse it of putting 'profits before people' in its selfish pursuit of the mineral wealth it then mostly spirits abroad. From this perspective, the DMR's eager resort to Section 54 is a symptom of a much larger problem. It reflects the government's outrage at the industry – and the DMR's sense that its inspectors have both a moral and a legal duty to bring mining companies to heel.[83]

Safety stoppages may also have been abused at times to serve the needs of the Guptas, a now notorious family of Indian immigrants who arrived in the country in 1993 and have allegedly enormously enriched themselves through their close connections with President Jacob Zuma and various members of his family. This kind of abuse may have occurred in 2015, when the Guptas wanted Glencore plc to sell them three of its key South African assets: the Optimum coal mine in Mpumalanga, the Koornfontein coal mine, and Glencore's share in the Richards Bay Coal Terminal. Optimum Coal had by then been placed in business rescue, largely because of the pressure which Gupta allies in senior positions in Eskom had brought to bear on the company. But the other two operations were profitable and Glencore had no wish to sell them. At this crucial juncture, however, mining inspectors (possibly acting at the behest of Mr Zwane, who allegedly has close ties to the Guptas) reportedly began visiting Glencore's various mines and looking for evidence

of non-compliance with relevant rules. Glencore soon yielded to the overall pressure and agreed to sell all three of its Optimum assets to a Gupta-controlled company, Tegeta Exploration and Resources (Tegeta).

There is, of course, no proof in this saga of any untoward conduct by the inspectors aimed at benefiting the Guptas. However, since some of the stoppages implemented in the past have clearly been unwarranted, this opens the door to Section 54 being abused to help the Gupta family as well.[84]

A further alleged abuse of this kind has recently come to light. Shortly after Royal Bafokeng Platinum (RBPlat) gave notice to a Gupta-linked company, Aforika Borwa Mining Solutions (ABMS), that it would not be renewing its contract with the firm, mining inspectors ordered Section 54 safety stoppages at both the South and North shafts of RBPlat's Rasimone platinum mine near Rustenburg (North West). According to one of the Section 54 notices, inspectors had red-flagged protruding roof bolts which had not been replaced, along with substandard rails and poor ventilation. The notice instructed RBPlat to withdraw workers and halt all activities at the mine. According to a report in *City Press*, 'a highly placed source within the mineral resources department [said] Zwane [was] seen to have deployed the same tactics as he allegedly used when he intervened in favour of the Guptas before they bought the Optimum [assets] from Glencore. "He used the same inspectors as those he used when he was squeezing Glencore at Optimum, instead of the local ones, as required," the source said'.[85]

Another source said that, ever since RBPlat had served its termination notice on ABMS, officials had been looking for weaknesses in the operations of the Rasimone mine. 'Even when they raided Rasimone, they were specific. It was not an inspection. They just went straight to the area they wanted,' the source stated. DMR spokesman Fidel Hadebe has denied the allegation, saying the inspection was a 'routine audit' that was carried out because of 'non-compliance red flags'. The purpose of such audits, he went on, was simply to 'deal with the ongoing problem of mine accidents. Our purpose is to enhance mine health and safety'.[86]

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Administrative fines for non-compliance

Under Section 55A of the MHSA, any mine inspector may recommend (to the principal inspector of mines in a province) that an administrative fine be imposed on any mining company that has failed to comply either with the Act itself, or with any notice or instruction issued under it. According to Section 91, any failure to comply constitutes an offence and is punishable by such 'fine or imprisonment as may be prescribed'. The principal inspector must consider both the inspector's recommendations and the mine's response, and may then impose an administrative fine of up to R1m. The company must pay this fine within 30 days. If it fails to do so, the chief inspector of mines may apply to the Labour Court to have the fine enforced as if it were an order of that court. However, if the company appeals to the Labour Court, then the obligation to pay is suspended.[87]

In 2013 the principal inspector of mines in North West imposed an administrative fine of R1m (the maximum available) on Impala Platinum. This fine was triggered by the death of an employee who had wandered into an unsealed, abandoned part of the mine where there was a high concentration of methane in the air. It is supposed that he lit a cigarette, which set off the fire that killed him. Impala Platinum appealed to the Labour Court, saying the principal inspector had failed to give it a reasonable opportunity to make representations before deciding on the fine. The inspectors initially opposed the application, but withdrew some days before the matter came to court in August 2016.[88]

In deciding to impose this fine, the principal inspector relied not only on the recommendations of the inspector, but also on a host of other reports and records. On the strength of all these documents, he concluded that Impala had failed to seal off the abandoned area and ensure it was properly ventilated. He also referred to a report on a supposedly similar incident some two years earlier, in which another employee had entered an area that was not adequately barricaded and had suffered a fatal gassing. However, Impala was never told that the principal inspector intended to rely on these documents and so the company did not deal with these reports in making its representations.[89]

Said the Labour Court: 'The mine could not have had an inkling that the principal inspector's decision would rely heavily on documents it was not made aware would be taken into account... As a matter of logic, the mine would not have been aware of the need to address the apparent implications of these documents... On the face of it, what the mine needed to address was what was contained in the recommendations of the inspector and nothing more. It could hardly have been expected to anticipate the need to address issues not canvassed in that recommendation, nor to deal with specific inculpatory evidence it had not been apprised of beforehand. An employer wishing to defend itself against the imposition of administrative fines under the MHSA, the scale of which are not insignificant, should not be required to speculate on the case against it which it needs to answer.'[90]

Said the Labour Court: 'The mine could not have had an inkling that the principal inspector's decision would rely heavily on documents it was not made aware would be taken into account. An employer wishing to defend itself against the imposition of administrative fines under the MHSA, the scale of which are not insignificant, should not be required to speculate on the case against it which it needs to answer.'

Judge Robert La Grange found that the principal inspector had relied significantly on 'material which the mine could not have been aware would be taken into consideration by him in arriving at his decision'. This constituted a breach of the right to a fair hearing under PAJA, and meant that the administrative fine had to be set aside.[91]

As *City Press* reported, 'the reason the fine was overturned was technical – that the inspector had not properly informed Impala about what documentation he would rely on to make a decision'. Whether or not the fine was disproportionate was never canvassed,[92] but this might well have been the case. Few court applications to set aside administrative fines have been lodged or reported upon, making it difficult to assess how often the principles of administrative justice are being undermined. The Impala example nevertheless clearly illustrates the risks in giving major punitive powers to officials who seem to lack a proper understanding of administrative justice – and may at times be motivated by hostility towards the mines.

Other wide powers in the MHSA

Given the dangers intrinsic to mining, especially at the extraordinarily deep levels sometimes found in South Africa, there is an obvious and compelling need for appropriate rules to protect the safety of mine employees. Those rules must also be properly enforced. The MHSA has many sound provisions and some important mechanisms to help ensure their proper implementation. However, it also has various clauses which lend themselves to abuse by hostile or overzealous inspectors and other officials. This analysis does not purport to provide a comprehensive list, but some MHSA provisions seem clearly to be overly broad and open to uneven and selective enforcement.

Sections 2 and 5 of the MHSA are supposed to provide an important counter-balance to these broad clauses. Section 2 requires every mining company to ensure, 'as far as reasonably practicable' that mines are 'designed, constructed and equipped to provide conditions for safe operation'. Section 5 adds that every mining company must, as far as is 'reasonably practicable,...provide and maintain a working environment that is safe and without risk to the health of employees'.[93]

As Judge van Niekerk pointed out the *AngloGold* case in November 2016, Section 2 makes it clear that 'the standard [to be applied] is one of reasonable practicality. This is a standard that is consistent with an employer's common law obligation to provide a reasonably safe working place. By definition, this is not an absolute standard'. However, as the court also noted, the inspectors who had closed down the Kopanang mine for minor safety infractions seemed to believe that Section 2 and 'its standard of reasonable practicality' had no bearing on their powers under Section 54 because this wording 'did not feature as a criterion in Section 54'.[94]

Sections 2 and 5 are supposed to provide the overarching context within which the Chief Inspector of Mines and his subordinates carry out their functions. Yet in practice these officials seem to think that it is only the express wording of particular provisions (Section 54, especially) that needs to be taken into account. This perception on the part of mine inspectors is false and could be corrected by further training on the need to read provisions within their overall context. But it may also be necessary to formulate Section 54 more narrowly and to include an express reference to the test of 'reasonable practicality' that is supposed to apply. This should help strike a more appropriate balance between important mine safety needs and the sustainability of mining operations.

Other overly broad MHSA provisions may also need to be recast, especially given the weaknesses in interpretation that have already come to light. Such provisions include:

> *Section 49(3) empowers the Chief Inspector of Mines to 'monitor and control those environmental aspects at mines that affect or may affect the health or safety of employees or other persons'. This contradicts the 'one environmental system' which the MPRDA and NEMA are supposed to provide. It also adds to regulatory uncertainty.*

Section 49(1)(e), which obliges the Chief Inspector of Mines to 'determine and implement policies to promote the health and safety of persons at mines and any person affected by mining activities'. These clauses are extremely broad, especially as they give the Chief Inspector the power to make rules not only for the mines themselves, but also in a host of other contexts where people might be 'affected' by mining activities;

Section 49(3), which empowers the Chief Inspector of Mines to 'monitor and control those environmental aspects at mines that affect or may affect the health or safety of employees or other persons'. This power is expressly given to him 'despite the provisions of the Mineral and Petroleum Resources Development Act (MPRDA) or any other law'. This contradicts the 'one environmental system' which the MPRDA and the National Environmental Management Act (NEMA) of 1998 are supposed to provide. It also adds to regulatory uncertainty, making it harder for mining companies to predict what further environmental rules might be introduced and with what potential consequences;

Section 49A(1)(d), which indicates that the Mine Health and Safety Inspectorate is to be at least partially funded from 'money raised' under the Act. This provision could undermine the institutional autonomy and individual independence of the inspectorate;

Section 75(1), which empowers the mining minister to 'prohibit or restrict any work...if he has consulted the Mine Health and Safety Council'. This wording allows him to proceed without the Council's agreement. In addition, though three months' notice and the opportunity to make representations are generally required, the minister may issue the prohibition immediately if 'he believes that the public interest requires' this. Given the way in which Section 54 stoppages have been abused, it would be advisable for this broad power to be more narrowly framed;

Section 76, which allows the minister to 'declare that an environmental condition or a substance present

at a mine is a health hazard to employees'. Again, he does not need the Council's consent, and is empowered to issue an immediate declaration if he believes that 'the public interest requires' this. Once a health hazard has been declared, the minister may require a mining company to 'eliminate, control, or minimise' the resulting health risks. The minister also has broad powers to exempt mining companies from this section, which opens the way to selective enforcement and adds to regulatory uncertainty;

Section 86A, which makes a mining company and its chief executive (among others) guilty of an offence if they contravene any provision of the MHSA and thereby cause 'death, serious injury, or illness' to any person. According to Section 86A, 'a defence of ignorance or mistake by any person accused cannot be admitted'. This limitation is extraordinarily wide, for it suggests that strict liability, irrespective of fault, may be imposed for conduct arising from ignorance or mistake. A mining company convicted on this basis may also have its mining right withdrawn. Alternatively, it may be punished by a fine of R3m (no lesser amount applies) and/or imprisonment for up to five years. The notion of automatic guilt implicit in Section 86A is contrary to the rule of law and the principles of due process in the Constitution. The section has not yet been brought into operation and needs to be scrapped or substantially recast; and

Section 92, which sets out the penalties applicable to those convicted of various offences under the MHSA. Imprisonment for up to five years', or a fine of up to R1m, may be imposed for any contravention of:[95]

- Section 2, the obligation to ensure safe operation and a healthy working environment 'as far as reasonably practicable';

> *Under Section 92, a negligent action resulting in the serious illness of a single person may result in the withdrawal of a company's mining right. Again, this seems disproportionate to the gravity of the offence.*

- Section 5, the similar duty to provide, 'as far as reasonably practicable' a working environment that is 'safe and without risk to the health of employees';
- Section 6, the obligation to 'supply all necessary health and safety equipment...and facilities to each employee'; and
- Section 7, the duty to ensure (again within the limits of reasonable practicality) that 'every employee complies with all' the safety and health requirements set in the statute.

Under *Section 92*, a mining company that, 'by a negligent act or by a negligent omission, causes serious injury or serious illness' to anyone at a mine, may be punished by the suspension or withdrawal of its mining right. Alternatively, it may be penalised via a fine of R3m (again, no lesser amount applies) and/or a prison term of up to five years. On this wording, a negligent action resulting in the serious illness of a single person, may result in the withdrawal of a company's mining right. Again, this seems disproportionate to the gravity of the offence.

The same fines and prison terms may also be imposed on 'any person', other than an employer or employee, who 'endangers' the health or safety of anyone at a mine by a negligent act or omission, irrespective of whether any serious injury or illness in fact results. On this basis, a bus driver at a mine who brakes a little late and comes close to hitting a mineworker through his negligence is punishable by a R3m fine and may also be sent to jail for up to five years. This is absurdly draconian.

All these sweeping provisions should be narrowed in appropriate ways, so as to guard against errors or abuses of the kinds witnessed in the *Bert's Bricks*, *AngloGold*, and *Impala* cases. To encourage inspectors to exercise their powers more carefully, the MHSA should also expressly state that, where safety stoppages and other instructions are found by the courts to be disproportionate and unwarranted, inspectors

will generally be held personally liable for the legal costs of the mining companies. In particularly egregious instances, inspectors should also be held personally liable for at least some of the financial losses caused to the mining companies. These remedies should apply irrespective of whether mining companies have requested such relief.

Health challenges in the mining sector

In South Africa's deep level mines, in particular, the challenges that make safety so difficult to secure often also make it difficult to protect the health of underground mineworkers. The primary health challenges vary in different sectors and situations. As the Chamber of Mines records, 'noise-induced hearing loss is a health risk in almost all areas of mining, as it is in all forms of industry'. Silicosis is a major problem in the gold and coal sectors, in particular. So too is pulmonary tuberculosis (TB), which is often triggered by exposure to silica dust. HIV/AIDS is also a major health challenge in the country as a whole, while migrant mineworkers living far from their families have long been particularly vulnerable to the disease.[96] The main focus of this analysis, however, is on the plight of mineworkers suffering from silicosis and pulmonary TB – and how the country's statutory and common law rules have responded to their plight.

Silicosis and pulmonary TB

Silicosis is an occupational lung disease caused by the inhalation of silicon dioxide in crystalline forms such as quartz. The employees most vulnerable to it are those who blast rock and sand, such as mineworkers and stone cutters.[97]

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Said the Johannesburg high court in 2016, in a class action brought against 32 gold mining companies (see *The Nkala case*, below):[98]

> 'Crystalline silica is a common mineral, also known as quartz, which is found in gold mines. Silica dust is generated and raised into the air by many of the processes associated with mining, such as blasting, drilling, and the handling and transport of rock and soil containing crystalline silica.
>
> 'The process through which crystalline silica dust causes silicosis [is] briefly as follows: when the smallest particles of crystalline silica are raised into the air as part of dust in the mining process, and mineworkers are exposed to that dust, the mineworkers inhale the crystalline silica particles. Once inhaled, the dust particles are deposited in the alveolus region of the lung. Once deposited in the alveolus, the particles attack the lung cells and thus damage the lung tissue, resulting in scarring or fibrosis of the lungs,...which obstructs and impairs the normal functioning of the lung... Silicosis is an irreversible, incurable, and painful lung disease... It can be a completely disabling disease and in many cases it is fatal.'

Silicosis, especially in its most common form ('chronic silicosis'), typically takes 15 years to develop and for its symptoms to become apparent. 'Accelerated silicosis', by contrast, commonly manifests within ten years. Silicosis is a progressive disease which worsens over time, even after exposure to crystalline silica dust has stopped.[99]

As regards tuberculosis (TB), about 80% of South Africans are infected with the TB bacteria, but may not even be aware of this as the disease is latent (rather than active) within them. About 1% of the population develops active TB every year, giving an incidence rate of some 860 per 100 000, which is one of the highest rates in the world. TB is usually spread from person-to-person through the droplet nuclei that are produced with a person with active TB coughs, sneezes, or talks.[100]

TB is particularly pervasive where people live in overcrowded conditions with poor ventilation. Poverty, malnutrition and hunger also increase susceptibility to the disease. People with the suppressed immunity triggered by HIV/AIDS are particularly vulnerable. TB has long been prevalent among mineworkers, partly because of the overcrowded hostels in which migrant workers have generally lived. In addition, though silica dust does not directly cause TB, exposure to such dust is a risk factor for the development of pulmonary TB. People with silicosis are also more vulnerable to TB infection because their immune systems are suppressed. Writes the Chamber of Mines: 'The often quoted figures are that mineworkers with silicosis are six times more likely to develop active TB, and mineworkers with silicosis and HIV are 18 times more likely to develop active TB.'[101]

Said the Johannesburg high court in the *Nkala case*: 'TB is a bacterial lung disease which, unlike silicosis, can be treated successfully and cured if detected early. If not cured, it too, can be fatal... It is accepted that silica dust does not cause TB.... [However], exposure to silica dust poses a lifelong risk for the development of TB, even if silicosis is not present in the lungs... The inhalation of silica dust [thus] increases the risk of contracting TB. [But] silica dust is not the only factor that increases the risk: for instance, tobacco smoking, positive HIV status, and cramped and poor living conditions, are also known factors that increase such a risk.'[102]

In combination, these factors have pushed recorded rates of TB among mineworkers in the gold sector in South Africa to the highest in the world. Mortality from TB is higher than that from mining accidents. The prevalence of TB among gold miners increased from 806 per 100 000 in 1991 to 3 821 in 2004,[103] though effective antiretroviral treatment of HIV/AIDS has since reduced this figure.[104]

The Mine Health and Safety Council, as part of its 'silicosis control programme', has helped generate a substantial body of research aimed at improving the control of dust and building awareness of the disease.

Initiatives since 1993

In 1993 the racial discrimination in the statutory compensation system, which had resulted in white miners receiving far higher amounts than black ones, was eliminated (see *The Odimwa system*, below).

Since 1994 the government had made various endeavours to address the health, as well as the safety, challenges on the mines. The 1994 Leon Commission of Inquiry into Safety and Health in the Mining Industry was an important initiative. The commission heard evidence from a wide range of stakeholders, including the National Union of Mineworkers, academics, and activists. Its recommendations led to the adoption of the Mine Health and Safety Act of 1996 and its tripartite Mine Health and Safety Council, which gives representation to labour, government, and industry.[105]

In 1998 the DMR introduced a database, called the South African Mining Occupational Disease database, which now supplements the information gathered through the post-mortems for which the statutory compensation provides (see *The Odimwa system*, below). However, surveillance of occupational diseases on the mines is reportedly still weak.[106]

The Mine Health and Safety Council, as part of its 'silicosis control programme', has helped generate a substantial body of research aimed at improving the control of dust and building awareness of the disease. These research findings have been supplemented by the adoption of widely publicised 'milestones' or targets, the establishment of task teams to disseminate good practice, and campaigns by stakeholders. The Health and Safety Council has also funded and published a large body of research on the control of TB in South African mines.[107]

South Africa is committed to the World Health Organisation/International Labour Organisation (WHO/ILO) initiative to eliminate silicosis by 2030. In 2003 the DMR set dust mitigation targets, based on the WHO/ILO initiative, which aimed to ensure that, by December 2008, 95% of all exposure measurement

results would be below the milestone level for respirable crystalline silica of 0.1mg/m^3. The further goal was to have no new cases of silicosis among previously unexposed individuals by 2013. The 2008 target was not reached, but it came close to being realised. As Gill Nelson records in a 2013 article in *Global Health Action*, 'the proportion of mines reaching 95% compliance [stood at] around 94% in 2006 [but then decreased] to less than 85% in 2010'. Though this meant the second milestone could not be met by 2013, mining companies have since committed to reducing silica dust levels even further and reaching the goal of zero new silicosis infections by 2024.[108]

A statutory system for the payment of compensation to miners who contracted silicosis and other occupational diseases on the mines was introduced in 1911 and has been in place for more than a century. The initial legislation was amended at various times and culminated in the introduction of the current system in 1973.

The beginnings of the statutory compensation system

Soon after gold mining began on the Witwatersrand, it became evident that underground mineworkers were being exposed to silica dust and were at risk of developing silicosis, which was initially called 'phthisis'. From as early as 1902, commissions of inquiry were appointed by the government to investigate the issue, while the mining industry also conducted its own studies and investigations. The commissions identified the inhalation of excessive silica dust as the sole cause of silicosis and recommended that various dust control and dust elimination measures should be introduced.[109]

From as early as 1902, commissions of inquiry were appointed by the government to investigate the issue, while the mining industry also conducted its own studies and investigations. The first statutory compensation fund against phthisis was introduced in 1911, under the Miners' Phthisis Act of that year. In 1912 an amendment act established an insurance fund as well.

The first statutory compensation fund against phthisis was introduced in 1911, under the Miners' Phthisis Act of that year. Mine owners were obliged to contribute to this fund, which was empowered to pay appropriate allowances to affected mineworkers or their dependants. In 1912 an amendment act established an insurance fund as well. The compensation fund was now to be financed by Parliament, while the insurance fund depended on levies contributed by employers.[110]

The relevant legislation was repeatedly amended and updated thereafter. In time, it was replaced by the Silicosis Act of 1946, which likewise provided for the payment of compensation to mineworkers out of the monies provided by the legislature and the levies contributed by mining companies. Various further statutes followed, culminating in the adoption in 1973 of the Occupational Diseases in Mines and Works Act (Odimwa).[111]

The Odimwa system

Under Odimwa, mining companies are required to pay prescribed levies into a compensation fund. Compensation is payable from this fund to mineworkers who have been found to be suffering from silicosis and other 'compensatable diseases' by a 'medical certification committee for occupational diseases' operating under the auspices of the Medical Bureau for Occupational Disease (MBOD).[112] Those who receive compensation under Odimwa are barred from claiming compensation under what used to be the Workmen's Compensation Act of 1941 and is now the Compensation for Occupational Injuries and Diseases Act (Coida) of 1993. Since Coida's benefits are broad enough to apply to diseases such as silicosis, the aim of the prohibition in Odimwa is to prevent 'double dipping' under both statutes.

Odimwa is administered by the Department of Health. Under its provisions, a Mines and Works Compensation Fund (the Odimwa fund) has been established and operates under the control of the Compensation Commissioner for Occupational Diseases (CCOD). Mining companies pay levies to the Odimwa fund

for all employees who carry out 'risk work' – work which could result in their contracting silicosis, TB, and other 'compensatable' diseases.[113]

When Odimwa was adopted in 1973, mineworkers of all races were entitled to its benefits, but the compensation payable to whites was much higher than that available to other groups. White miners were examined at the MBOD itself in central Johannesburg, or at one of the sub-bureaus located near the gold mines, while all their records were kept by the MBOD. Black miners, by contrast, were examined at the mines, while their data was sent to the MBOD if the presence of an occupational disease was suspected.[114]

When Odimwa was introduced, prevalence rates among white miners were significantly higher than they were among blacks. This was largely because whites worked for longer on the mines (an average of some 23 years), while blacks had short contracts. Long employment on the gold mines increased whites' exposure to silica dust as well as the chances of the disease becoming manifest while they were still employed. Autopsy figures from 1975 to 2007 (which were gathered under Odimwa, as further outlined below) show a silicosis prevalence of 3% among deceased black miners, as against a prevalence of 18% among whites. This changed substantially after 1975, when black mineworkers began receiving longer contracts. By 2007, thus, the proportion of white gold miners with silicosis had increased to 22%, whereas the proportion of black miners with the disease had risen to 32%. From the start, moreover, black miners were exposed to higher concentrations of silica dust as the work they did was generally dirtier and dustier.[115] Their short contracts meant, however, that they generally left the mines – often for remote rural areas in South Africa or neighbouring countries – in the period when the disease was still latent.

One of Odimwa's strengths is that it created an autopsy service for deceased miners and former miners, which applied in all circumstances provided that next-of-kin gave their consent. Autopsies had in fact been performed for decades, but until 1975 they were paper-based. From then on, details of each autopsy case were recorded in an electronic database forming part of the Pathology Automation (Pathaut) System. (The autopsy service is provided by the pathology division of South Africa's National Institute for Occupational Health.) The database includes not only data on disease but also demographic and employment information, which helps clarify years worked in different mining sectors.[116]

Mineworkers who are certified as having contracted a compensatable disease are entitled to reimbursement for their medical expenses. They also have the right to 'one-sum' benefits from the Odimwa fund, which are calculated according to a statutory formula.

As Ms Nelson writes: 'The Pathaut database contains the only data on occupational lung disease in the South African mining industry diagnosed by standard pathological methods that are far more sensitive and accurate than chest radiography. It currently comprises more than 105 000 autopsy records of miners from all population groups, all mining sectors, and all regions of South Africa, dating...back to 1975.'[117]

In 1993, the racial discrimination that previously applied under Odimwa was eliminated.[118] All miners are now tested at the mines where they work, and data is sent to the MBOD where an occupational disease is suspected. Once the MBOD has certified the presence of a compensatable disease, the claim is referred to the Compensation Commissioner for Occupational Diseases (CCOD) for payment. The compensation due is the same for all miners, irrespective of race.

The compensation payable

Mineworkers who are certified as having contracted a compensatable disease are entitled to reimbursement for their medical expenses. They also have the right to 'one-sum' benefits from the Odimwa fund, which are calculated according to a statutory formula.[119] This formula is set out in Section 80 of Odimwa as '(A x 12) x B'. Here, 'A' represents the mineworkers' monthly wage, but the sum taken into account may not, under the current wording of Section 80, 'exceed an amount of R3 000'. By contrast, 'B' is an amount

which varies (in accordance with the severity of the disease and other factors) from a low of 1.3 to a high of 2.917. The minister of health, with the concurrence of the finance minister, has the power to 'increase any benefit' under Section 80 by notice in the *Government Gazette*. However, he has failed to exercise this power since 2009, when the R3 000 a month limit on earnings was set. Monthly wages in the mining industry averaged R20 300 at the start of 2016, but the difference between wages actually earned and the statutory maximum cannot be taken into account.[120]

Under the formula, the one-sum benefits claimable under Odimwa are generally as follows. A mineworker who is discovered to be suffering from a compensatable disease in the 'first' (or lesser) degree is entitled to a lump sum of R47 160. A mineworker who is found to be suffering from a compensatable disease in the 'second' (or more serious) degree and has not yet received any other benefit under the Act is entitled to a lump sum of R105 000. This maximum sum is too little to yield a reasonable income. Says Wits Professor Tony Davies: 'Even if every rand were invested, it wouldn't give you a monthly income worth thinking about', especially given high inflation rates over many years.[121]

Largely because the statutory maximums have not been revised upwards by the health minister, the Odimwa fund is also grossly under-resourced. A recent study by Yale University's Global Health Justice Project suggests that 'even under the most conservative assumptions, the Odimwa fund is more than R600m below the level required to cover current liabilities. It may in fact be R10 billion or more below the level required to cover the total annual costs to South African society'.[122]

The R3 000 a month limit on earnings was set in 2009. Monthly wages in the mining industry averaged R20 300 at the start of 2016, but the difference between wages actually earned and the statutory maximum cannot be taken into account.

Odimwa has no provisions allowing its maximum amounts to be increased where the negligence of the employer has contributed to the mineworker contracting the relevant disease. Under Coida, by contrast, the compensation payable is indeed increased if an accident or occupational disease is due to the negligence of the employer. Since negligence on the part of employers is taken into account in this way, Coida bars employees from bringing additional common law claims against their employers. Instead, Coida limits the compensation that employees can obtain to that which is payable under its terms.[123]

The calculation of compensation under Coida is based on the employee's earnings at the start of the disease. As under Odimwa, the amount which can be taken into account is subject to a specified ceiling, but the Coida ceiling is currently set at some R377 100 a year, whereas the Odimwa wage ceiling remains at a paltry R36 000 a year. The compensation obtainable under Coida is thus significantly higher than that available under Odimwa. But this is no help to mineworkers, as Odimwa prevents them from claiming under Coida for silicosis and other occupational diseases contracted on the mines.[124]

The statutory compensation system under Odimwa for silicosis and TB contracted on the mines is thus flawed and profoundly inadequate. The Odimwa fund, like other statutory compensation funds (including the Road Accident Fund), has also been very poorly administered. As a result, it has failed to keep proper records of mineworkers within and outside the country, and has major backlogs in the processing and payment of miners' claims.

Failures in the Odimwa system

In 1975, according to autopsy data extracted from Pathaut in relation to some 19 150 gold miners (86% of them black and 14% white), the proportions of black and white gold miners with silicosis, as earlier noted, were 3% and 18% respectively within this sample. However, though whites seemed to be more badly affected, they were also more easily diagnosed and treated. They generally lived in urban areas with sound

medical facilities and had easy access to the MBOD and its sub-bureaus on the mines.[125] They were also better skilled and more sophisticated, making it easier for them to claim the compensation they were due.

According to the Pathaut data, the prevalence of silicosis among black miners, at 3% in 1975 within this sample, was six times lower than that among whites. However, as the contracts of black miners lengthened after 1975, so prevalence among blacks began to increase. By 2007 (again based on Pathaut data), the proportion of black miners with silicosis had risen to 32%, while the proportion of whites with the disease had increased to 22%. In 2007, thus, silicosis prevalence within the Pathaut sample was 1.5 times higher in blacks than it was in whites.[126]

The extent to which silicosis was taking hold among black miners may also have been obscured by seemingly low prevalence rates and long latency periods. Autopsy data from Pathaut shows, for example, that the proportion of black miners with silicosis reached 2% after they had worked for 15 to 19 years on the mines, whereas the equivalent proportion among whites was reached after 20 to 24 years. The data also shows that the proportion of black miners below the age of 50 who had silicosis was 0.07%, whereas the equivalent figure for white miners was 0.04%.[127]

These figures refer solely to the Pathaut sample, but they are nevertheless relatively low. They also confirm, of course, that black miners, in Ms Nelson's words, had 'higher intensities of exposure' than whites, which no doubt stemmed from the dirtier and dustier jobs that black miners were called upon to do.[128]

Another major factor was the migrant labour system. At the end of their contract periods, black miners generally returned to their rural homes, where health facilities were limited. The silicosis they had contracted on the mines would commonly take ten or 15 years to develop. It was also difficult to diagnose, even with the benefit of x-ray machines, which many rural clinics in any event lacked.

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(The difficulty of accurate diagnosis is illustrated by two studies showing very different silicosis prevalence rates among whites. One study of deceased white miners, who had worked on the gold mines for on average of 23 years between 1940 and 1991, found that 14% of them had silicosis. But another study of essentially the same group, carried out within very much the same parameters – but this time by autopsy – found that 52% of them had silicosis. This difference is remarkable, and underscores the fact that chest x-rays may easily miss the manifestations of the disease.)[129]

Former mineworkers who went home to rural areas and then became ill were thus unlikely to be accurately diagnosed. Even if they were, many of them did not know about Odimwa. (One study, carried out among 205 former miners in the Eastern Cape, found that 203 of them (99%) had no knowledge of the statute.)[130] Even if ill mineworkers did know about Odimwa and wanted to claim for compensation, it was difficult in practice for them to meet all the requirements in a long and convoluted process. The MBOD, with its mounds of paper files to work through, was also very slow at processing the applications for silicosis certification that it received.

Figures from different studies show how few black miners have succeeded in claiming under Odimwa. A study focused on some 300 former gold miners living in Botswana in 1994 found that very few of those with occupational lung diseases (no proportion was specified) had been compensated. Another study which focused on some 240 former gold miners living in the Eastern Cape in 1996 found that 62% of those eligible for Odimwa benefits had not been compensated, while only 2.5% had been compensated in full. Another study of some 2 500 miners who came to autopsy in 1999 found that 19% had occupational lung diseases

which had never been identified or compensated – and that only 7% of their families had received any benefits by 2001. In similar vein, research by consultants from Deloitte, carried out largely in 2003, found that, of some 28 160 certified claims, payouts had been made in only 400 cases, or less than 1.5%.[131]

Migrants from foreign countries fared even worse. The mining industry in South Africa has long drawn a significant proportion of its labour from Lesotho, Mozambique, and Swaziland. In 1920, thus, 57% of black miners came from these countries, rather than South Africa. The equivalent percentages in subsequent years were also high, standing at 49% in 1940, 62%in 1960, 44% in 1980, 58% in 1995, 57% in 2000, and 34% in 2010.[132]

Very few foreign migrants have succeeded in claiming compensation under Odimwa. In February 2014, Paula Akugizibwe, a researcher working at the University of Cape Town (UCT) on a project aimed at identifying 'the distribution and health needs of (ex) miners in Southern Africa', explained it thus: 'The first challenge lies with the lack of surveillance and diagnosis in countries...outside South Africa, such as Lesotho, Mozambique, and Malawi,...especially for silicosis.' Even if people managed to get diagnosed and certified as eligible for compensation, navigating through the many bureaucratic requirements was impossible for most in practice. 'The attendant bureaucracy is complicated enough within South Africa's borders: beyond them, it's much harder... [You also have to] add in the logistical and financial burden of crossing a border to file your claim and then follow up.' Hence, though filing claims from Lesotho is possible, it is not surprising, she says, that 'only six such claims were filed between 1998 and 2003'.[133]

> *Comments Professor Jill Murray of Wits University: 'Once you've taken the medical examination, that's only the beginning of the chain of misadventure. Then you've got to get together a sheaf of papers to go with it, and...where do people get these?'*

Even for South Africans, the bureaucratic hurdles remain daunting. Many different documents have to be submitted to the MBOD before it will certify a diagnosis of silicosis. These include not only medical forms, but also ID documents, finger print records, and labour records showing periods worked at relevant mines. Administrative efficiency is low and the MBOD, as the *Daily Maverick* recounts, has 'towering stacks of claim records requiring evaluation, including records filed as far back as the 1950s'.[134]

When applicants eventually receive the MBOD's certification, their claim records must be sent to the Compensation Commissioner for Occupational Diseases (CCOD), who in turn sends a form back for the worker to complete. Comments Professor Jill Murray of Wits University: 'Once you've taken the medical examination, that's only the beginning of the chain of misadventure. Then you've got to get together a sheaf of papers to go with it, and...where do people get these? They don't even have electricity. Now they've got to have records of service and ID documents and all the rest of it.' If a document is missing, a clerk at the CCOD will write to them asking them to supply whatever is needed. But such letters can go astray, or the further documents required may prove too difficult to find. Yet claims cannot be paid unless and until the paper trail is complete. Some commentators have criticised the many documents required as an unnecessary obstacle. However, Dr Thuthula Balfour-Kaipa, head of health at the Chamber of Mines, notes that a certain amount of documentation is essential to help guard against fraudulent claims.[135]

Attempts to make Odimwa work

In 1999 the government resolved to integrate the Odimwa and Coida systems, so as to introduce a uniform system of statutory compensation with increased benefits for mineworkers.[136] But integration has yet to be achieved. The Department of Labour, which is responsible for Coida, reportedly refused to take on the Herculean task of resolving the administrative chaos at Odimwa. But Coida's Compensation Fund also suffers from a host of administrative problems and has payment backlogs that mirror Odimwa's. The backlogs in both systems must thus be overcome, says the state, before integration can proceed.[137]

The MBOD system remained entirely paper-based until 2004, when the electronic Mine Workers Com-

pensation (MWC) system was introduced. Ms Nelson writes: 'Since then, all new applications to the MBOD are recorded electronically. The MWC system consolidates and summarises information on work histories from the autopsy database (Pathaut), the MBOD files, and other sources. Records are kept for all miners who apply for compensation for a compensatable disease and are linked to the Pathaut database by a unique MBOD number.'[138]

By 2008 the failures of the statute remained so large that the Chamber of Mines launched a 'Making Odimwa Work' project. This was done in conjunction with the Department of Health and the National Union of Mineworkers (NUM). According to chamber spokeswoman Charmaine Russell the aims of the project were to:

- establish occupational health centres at identified government hospitals which could provide medical examinations for former mineworkers;
- strengthen the certification and compensation claims process at the Medical Bureau for Occupational Diseases (MBOD) and the Compensation Commissioner for Occupational Diseases (CCOD); and
- promote sustainable economic projects in labour-sending areas.

As part of this endeavour, the chamber contributed some R26m to tracking and tracing former mineworkers who might have become ill since they left the mines. It also helped improve the administration of Odimwa, and tried to ensure that the public health system in labour-sending areas had the capacity to examine people for occupational lung diseases and assist them with compensation claims.[139]

In 2012 health minister Dr Aaron Motsoaledi appointed Dr Barry Kistnasamy as the new Odimwa commissioner and mandated him to help turn the failing system around. By then, the commission had failed to submit its financial statements to Parliament since the 2009/10 financial year. As Dr Kistnasamy later told MPs: 'At that stage, its offices held rooms of boxes of disorganised paper records, its phones rang unanswered, and the fund had virtually collapsed.'[140]

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In explaining this disarray, Dr Kistnasamy claims that Odimwa was initially designed to cover whites alone, and was thus unable to cope when some 500 000 black mineworkers became entitled to its benefits in 1993. This is not so, however, for Odimwa provided compensation for mineworkers of all races from the start (though with different benefits for different groups). The administrative chaos in the Odimwa system stems rather from other factors. It is in keeping with the inefficiency of the public service in general – and mirrors the malaise that now afflicts both the Road Accident Fund and Coida's Compensation Fund.[141]

The mining companies have persisted in trying to improve Odimwa's operation. In November 2014, eight gold mining companies, ranging from Anglo American to Village Main Reef, launched a broad initiative aimed at helping secure appropriate compensation for occupational lung diseases contracted in the sector.[142] The Chamber of Mines also worked with the Department of Health in establishing 'one-stop service centres' for mineworkers: the first in Carletonville on the west Rand, and the second in Mthatha in the Eastern Cape. These centres offer medical examinations, rehabilitation assessments, health counselling, and referrals to medical specialists where necessary. They also help people prepare and submit claims for compensation to the MBOD and the CCOD.[143]

Another turnaround strategy was launched in May 2015 in the form of Project Ku-Riha (based on the Tsonga word for 'compensation'). This project seeks to overcome the many remaining problems in the Odimwa system, which is still not operating effectively. A particular objective is to put an end to major backlogs in the processing of Odimwa claims.[144]

Project Ku-Riha is thus helping the MBOD and CCOD to finalise some 100 000 certified, but unpaid,

compensation claims, of which about 45% date back to 2000. These claims have not been settled for a range of reasons, including incomplete information regarding claimants, a lack of bank accounts, and the absence of the necessary identity details.[145]

Reporting to Parliament in August 2016, more than a year after the launch of the project, Dr Motsoaledi told MPs that this backlog of some 100 000 unpaid claims had been revealed through a file verification exercise. Some 700 000 additional files, including 500 000 still languishing with the MBOD, were now being examined with the help of the Chamber of Mines. However, much more data had yet to be captured, including source documents for beneficiary claims and reconciliations between the levies paid by mining companies and the payments made from the Odimwa fund.[146]

An actuarial valuation of the Odimwa fund was also being conducted, the health minister went on. The fund's audited financial statements from 2010/11 would be used as the foundation for this exercise, but would have to be supplemented by corrected valuation reports and financial data from the 2011/12 period. (Prior audits had attracted adverse audit opinions because beneficiary files were often missing and the auditor general was unwilling to accept the valuation that officials had placed on the fund.)[147]

Some important progress has been made. However, the commission still has a backlog of some 94 000 claims (down from 106 000 in November 2016), which have already been approved by the MBOD but have yet to be paid out. In addition, the claims of between 300 000 and 500 000 mineworkers still need to be assessed.

Six mining companies, including Anglo American South Africa and African Rainbow Minerals, are now working together with Dr Kistnasamy to help find missing information and further improve administration. The electronic database has been strengthened, while records have been obtained from The Employment Bureau of Africa (TEBA), which was established in 1902 to help the gold mining industry meet its labour needs. (TEBA remains in operation and now provides the mining industry and its employees with various services, in addition to labour recruitment. It is valuable in helping to trace former miners because it assigns each miner a unique industry number that remains his personal number for life, even if he moves from one company to another or from one mining sector to a different one.) Two more 'one-stop service centres' have also been launched: in Burgersfort (Mpumalanga) and Kuruman (Northern Cape), to help former mineworkers and their dependants submit their claims.[148]

Some important progress has been made. In November 2016 Mpho Ndaba, director of revitalisation of distressed mining communities at the Department of Planning, Monitoring, and Evaluation, said that the Odimwa fund had paid out a total of some R1.4bn to some 96 770 beneficiaries over a period of some 30 years. Since February 2016, added Mr Ndaba, payments totalling R141m had been made to some 3 520 beneficiaries. More than 1 300 beneficiaries from neighbouring countries had also received a total of R51m. A tracking and tracing process with a call centre had been introduced, while more health clinics had been provided. The deputy minister of mineral resources, Godfrey Oliphant, had also launched outreach and awareness campaigns to help trace former mineworkers, while the World Bank, the Chamber of Mines, and other organisations were providing additional support.[149]

Further progress has since been made, but the data available is often inconsistent. According to a parliamentary briefing in October 2017, payouts totalling some R204m were made to some 5 300 miners and former mineworkers in 2016/17, which was well up on the R80m which had been paid out to some 1 770 claimants in the previous year. However, the commission still had a backlog of some 94 000 claims (down from 106 000 in November 2016), which had already been approved by the MBOD but had yet to be paid out. In addition, the claims of between 300 000 and 500 000 mineworkers still needed to be assessed.[150]

In April 2017, however, Mr Oliphant had put the backlog at around 700 000 unpaid claims, many of them

relating to former mine workers who were difficult to trace. Data gathered by the health department and the CCOD (and also presented to Parliament in October 2017) indicates that:[151]

- some 33 000 former mineworkers have been certified as having silicosis, of whom roughly 8 900 have not been paid and are entitled to compensation amounting to some R588m;
- about 109 000 have been certified with TB, of whom 61 300 remain unpaid and are due R308m;
- roughly 13 700 have been found to have asbestos-related diseases, of whom 5 300 remain to be paid at a cost of some R196m;
- around 5 100 have been diagnosed with obstructive airways disease, of whom 1 700 have not been paid and are due about R126m; and
- close on 11 000 have been certified as having pneumoconiosis, of whom 1 800 remain to be paid at a cost of R126m.

According to these figures, the number of former mineworkers with compensatable diseases under Odimwa is roughly 79 000, to whom an overall amount of R1.34bn is due.[152]

The CCOD's financial records remain chaotic, with major gaps in the recording of revenue received and claims submitted. Its financial statements for 2010/11 and 2011/12 were submitted to Parliament only in August 2017, while the equivalent data for subsequent financial years still has to be recorded and audited.[153]

> *In April 2015 the director general of labour, Thobile Lamati, acknowledged to Parliament that the Compensation Fund under Coida had an overall backlog of 231 000 outstanding claims, cumulatively amounting to some R23bn. Some of these claims dated back ten years.*

As earlier noted, the government has long wanted to integrate the Odimwa and Coida systems, so as to provide a uniform compensation dispensation for all employees, including mineworkers. However, the administrative problems and payment backlogs in both must first be resolved, it says. The Odimwa backlog has already been outlined, but Coida's Compensation Fund, which falls under the Department of Labour, has major backlogs too. In April 2015 the director general of labour, Thobile Lamati, acknowledged to Parliament that the Compensation Fund had an overall backlog of 231 000 outstanding claims, cumulatively amounting to some R23bn. Some of these claims dated back ten years. Mr Lamati pledged that the backlog would be cleared within two months, but progress has in fact been slow.[154]

Integration is also complicated by the fact that Coida does not offer the post-mortem services that are available under Odimwa (with the consent of families), and which can be valuable to dependants in putting forward claims. However, it would be costly to introduce these rights for the 11m employees falling under Coida, in addition to the 400 000 mineworkers covered by Odimwa.[155]

The persistent failures of Odimwa have helped prompt the bringing of a number of civil suits against mining companies. These have been facilitated by a Constitutional Court judgment in 2011 and now include a major class action against some 30 gold mining corporations.

Civil litigation against mining companies

The Constititutional Court ruling in the Mankayi *case*

In 2006 Thembekile Mankayi, a mineworker who had contracted silicosis after working underground for AngloGold Ashanti from 1979 to 1995, sued the company for R2.6m in compensation. Mr Mankayi had previously claimed some R16 000 (the maximum then possible) under Odimwa. Odimwa itself did not bar the bringing of a civil suit against the mine, but Coida (as earlier noted) extinguishes the common law right of employees to sue negligent employers for additional damages. The definition of 'employee' in Coida is

also wide enough to include mineworkers within its ambit. Both the High Court and the Supreme Court of Appeal (SCA) thus rejected Mr Mankayi's claim.[156]

The matter then went to the Constitutional Court, which at that time had jurisdiction solely over constitutional matters. The court found that Mr Mankayi's case satisfied this criterion, as the Constitution guarantees everyone the right 'to be free from all forms of violence, from either public or private sources'. What 'violence' there had been in AngloGold's failure to provide better protection against silica dust was not explained.[157]

The Constitutional Court went on to stress that Coida's abolition of the common law right to sue negligent employers deprived employees of 'an appropriate and effective remedy'. Its impact on black mineworkers, who had 'contributed enormously to South Africa's economic wealth' at great cost to themselves, was particularly severe.[158]

The compensation schemes provided by Coida and Odimwa were also different, showing that each statute had its own distinct remedies. Coida's prohibition of common law claims was thus intended to apply solely to those who claimed compensation under its terms. But Coida barred mineworkers from claiming under its provisions, which was why Mr Mankayi had claimed under Odimwa instead. Since Mr Mankayi had never claimed under Coida, he was not barred by it from suing his employer at common law.[159]

The judgment has paved the way for class actions to be brought against AngloGold and other mining companies. Estimates of the damages they might have to pay initially ran as high as R600bn – raising questions as to how sums of such magnitude could be financed by an industry already under significant economic pressure.[160] However, justice to ill mineworkers would also have to be done.

The first class action following on from the Mankayi *ruling was brought on behalf of some 4 400 claimants against Anglo American and AngloGold. In 2016 a settlement was reached, under which R464m was paid into a dedicated trust called Q(h)ubeka. The settlement amount was thus roughly R100 000 per claimant, which is much the same as Odimwa would provide.*

The AngloAmerican and AngloGold case

The first class action following on from the Mankayi ruling was brought on behalf of some 4 400 claimants against Anglo American and AngloGold. The case was brought by UK-based law firm Leigh Day and Mbuyisa Neale in South Africa. In 2016 a settlement was reached, under which R464m was paid into a dedicated trust called Q(h)ubeka.[161] The settlement amount was thus roughly R100 000 per claimant, which is much the same as Odimwa would provide.

Since Q(h)ubeka was established, writes journalist Charlotte Mathews in the *Financial Mail*, 'the trust has set up a network of local medical service providers in South Africa and neighbouring states, who are building expertise in testing for occupational lung diseases'. It has also established panels of experts in Johannesburg, Durban, and Cape Town to help make these assessments. By August 2017 the trust had screened some 2 200 claimants and paid close on R67m to close on 630 people. Another 180 or so were expected to receive a total of some R19m, once bank details and biometric identification had been completed.[162]

The Nkala case

The second class action is very much bigger and is being brought with the help of Richard Spoor Inc, Abraham Kiewitz, and the Legal Resources Centre. The *Nkala* case (named after the first applicant, Bongani Nkala), began in 2012, soon after the *Mankayi* ruling had opened the way for it. Here, 69 applicants are seeking to bring a class action against 32 gold mining companies as regards the 82 gold mines under their control. The applicants' objective is to claim compensation on behalf of all current and former mineworkers who have contracted silicosis or pulmonary TB from inhaling silica dust while working underground on

these 82 mines. Where former mineworkers have already died, the aim is to claim compensation on behalf of their dependants. As the first step in a much longer process, the applicants applied to the Johannesburg High Court for an order 'certifying' or authorising the bringing of the class action.[163]

A class action allows one or more plaintiffs to bring a lawsuit on behalf of a wider group or 'class' of people who are similarly situated. Class actions are authorised by the 1996 Constitution, but have seldom been brought. They are intended to cover situations where the plaintiffs are so numerous that it would be almost impossible to bring them all before the courts in a single hearing. Class actions also protect both plaintiffs and defendants from having to participate in a multiplicity of similar actions. At the same time, they reduce the workload on the courts, along with the risk that different courts might reach different decisions on the same issues. By contrast, 'a class action allows for a single finding on the issues, which binds all the plaintiffs and all the defendants'.[164]

Though class actions are still a new phenomenon in South Africa, the SCA has already (in *Children's Resource Centre Trust and others* v *Pioneer Food and others*) laid down a list of seven requirements which the courts should consider in deciding whether or not to certify a class action. Among other things, it should be possible to lay down a factual (objective) test which can be used to identify who belongs to the class. The validity of their legal claims should rest upon questions of fact and law that are common to all of them. The damages they seek must be quantifiable, while an appropriate procedure for dividing up any amount received among the members of the class should also be available. In addition, it must be clear that a class action, rather than individual litigation, offers the most appropriate method for deciding their claims.[165]

The May 2016 ruling paves the way for the class action to proceed. Those eligible to join in it include current employees suffering from the diseases in issue, former employees dating back to 1965, and the dependants of mineworkers who have already died. The number of people eligible to take part in the class action could range from 17 000 to 500 000.

In May 2016 the Johannesburg high court ruled that all these requirements were met in the *Nkala* case and that the class action should thus be certified. Handing down its judgment, the court said that South Africa's gold mining industry 'left in its trail tens of thousands, if not hundreds of thousands, of current and former underground workers who suffered from debilitating and incurable silicosis and pulmonary TB'. Many mineworkers had also died from the disease. The ruling paves the way for the class action to proceed. Those eligible to join in the action include current employees suffering from the diseases in issue, former employees dating back to 1965, and the dependants of mineworkers who have already died. The court added that the number of people eligible to take part in the class action could range from 17 000 to 500 000.[166]

The judgment was widely hailed by commentators. However, there are many weak elements in the ruling, which will make the class action all the more difficult to manage when it comes to trial. It is doubtful too whether the trial court will be able to provide 'a single finding on the issues, which binds all the plaintiffs and all the defendants'. Yet this is what a class action is supposed to achieve. Particularly noteworthy are the court's rulings that:

1 the overall consolidated class should be divided into two sub-classes, a silicosis sub-class and a TB sub-class, as those suffering from TB would not necessarily have contracted it because of silica dust and the issues for decision would be different as between the two groups;

2 a 'bifurcated' or two-stage process would be used, in which the issues common to both classes would be decided in the first stage, while the issues relevant to each sub-class would be considered in the second;

3 in the first stage, the common questions of fact would revolve around the extent to which minework-

ers had been exposed to silica dust, while the common questions of law would examine whether all the mining companies had breached their legal obligations to the mineworkers;

4 in the second stage, once the common questions of fact and law had been decided (and presuming that these decisions went against the mining companies), the requirements for liability in delict would have to be met. Since such liability depends on the wrongdoing of the particular defendant, mineworkers would have to show that their particular employers had acted wrongfully and negligently towards them;

5 in this bifurcated process, potential claimants would have the benefits of 'opting-out' and later 'opting-in'. This would allow them to opt out of participating in the class action in the initial stage, which would protect them from any adverse findings by the trial court on the common questions of fact and law. In the second stage, once these common issues had been decided against the mining houses, mineworkers would be allowed to 'opt in', so that their individual claims against particular mining companies could then be considered and decided;

6 the class action was indeed the most appropriate way to proceed, as impoverished and ill mineworkers would otherwise find it difficult to advance their claims against the mining companies;

Some of the mining companies have since petitioned the Supreme Court of Appeal (SCA) to hear their appeal, arguing that the high court judgment failed adequately to address a number of important issues. Leave to appeal has been granted and the matter has been set down for hearing by the SCA in March 2018.

7 the common law should be developed to allow claims for general damages (for the pain and suffering that individual mineworkers had endured) to be transmitted to their heirs from the date the application for certification had been lodged. Hence, if some of the mineworkers died after this date but before the pleadings had closed (ie, before the plaintiff's opportunity to reply to the defendant's plea had expired), then their wives and children would still be able to claim these additional damages from the mining companies;

8 Two out of three judges ruled that the common law should be further developed, so as to make claims for general damages for pain and suffering transmissible to the heirs of all plaintiffs, from the time their court actions had been lodged. However, one judge dissented on this last point, preferring to confine the transmissibility of claims for general damages to class actions alone and to rule that transmissibility should apply from the date the application for certification is initiated.

The majority decision of a full bench of the Johannesburg high court was handed down by Deputy Judge President Phineas Mojapelo and Judge Bashier Vally. The dissenting judgment, which disagreed with the majority ruling solely on the extent to which claims for general damages should be transmissible, was handed down by Judge Leonie Windell. The particularly noteworthy elements in the judgment, as listed above, are further described in the *Box* on page 62.

In June 2016 some of the affected mining companies sought leave to appeal against the judgment.The high court granted leave to appeal against its new rule on the transmissibility of claims for general damages, but declined to allow an appeal against the certification of the class action. Some of the mining companies have since petitioned the Supreme Court of Appeal (SCA) to hear their appeal, arguing that the high court judgment failed adequately to address a number of important issues. Leave to appeal has been granted and the matter has been set down for hearing by the SCA in March 2018.[167]

Six of the biggest gold mining companies (African Rainbow Minerals, Anglo American SA, AngloGold Ashanti, Gold Fields, Harmony, and Sibanye) have formed an Occupational Lung Disease Working Group, which is seeking to achieve a settlement that will be fair to all and sustainable for the mining industry. The

group argues that a reasonable settlement 'would be preferable to a lengthy court engagement that would benefit only the lawyers'. Settling out of court would also provide more certain benefits to the mineworkers, as a court action always generates both 'losers and winners'.[168]

According to Graham Briggs, a former CEO of Harmony Gold and the chairman of the working group, the number of people who have contracted silicosis is difficult to determine, with estimates ranging from 17 000 to some 500 000 (as suggested by the high court). The class action thus requires renewed efforts to track and trace all the mineworkers who might be eligible to participate, but this will take a long time. 'A court case could go on for another five or ten years', he says, whereas the affected mineworkers are urgently in need of help. The best solution is thus for the industry to work together with the government to resolve the matter. 'Everyone is working towards a solution', he said in February 2017.[169]

The six mining companies plan to establish a legacy fund to provide additional compensation to mineworkers made ill by inhaling silica dust. What size this fund will need to be remains unknown, partly because of the uncertainty as to how many claimants may need to be helped. The aim, however, is that the legacy fund should match whatever the relevant mineworkers are due under Odimwa. Says Mr Briggs: 'Putting a number out there and scaring every investor away because it's such a big number would be crazy because we don't know what the number will be. We haven't got a settlement on the quantum yet, or the number of people who will claim.'[170]

The class action has focused global attention on South Africa's gold mining companies and their apparent failures to help the sick and suffering. But the mineworkers should long since have received the compensation due to them under Odimwa.

In July 2017 *City Press* reported that Anglo American SA had provisionally allocated $101m (R1.3bn) for the settlement of the claim, while the provision made by Gold Fields amounted to $30m (R0.4bn). Various gold mining companies, said Sibanye spokesman James Wellsted, were each coming up with their own independent estimates, while the settlement reached might yet be different. That the companies were seeking to reach agreement also did not mean that they admitted liability. No details of any proposed settlement could be made public, as the negotiations with the lawyers were confidential. In addition, any settlement reached would have to be approved by the high court before it could take effect.[171]

By September 2017, the provision made by the six major companies totalled $390m (R5bn) – while Mr Spoor said that 'broad agreement' had been reached on the terms of a settlement. The Johannesburg high court had stated that the number of claimants could be as high as 500 000, but figures provided by the Department of Health show that some 33 000 miners had been certified as having silicosis in 2014 (see *Attempts to make Odimwa* work above). Mr Spoor estimates that the final number of claimants will be between 50 000 and 100 000.[172]

In an interview with Charlotte Mathews of the *Financial Mail* in August 2017, Mr Spoor added: 'We are under a lot of pressure to achieve a settlement. About 4% of this class is dying every year, which means in the past six years about 25% of possible claimants have been lost. Litigation can drag on for many years and it would not be good for our clients or for the industry. A settlement is in everyone's interests.'[173]

The class action has focused global attention on South Africa's gold mining companies and their failures to help the sick and suffering. The extent to which particular companies acted wrongfully and negligently has still to be decided by the trial court (unless a settlement is instead reached). But the mineworkers should long since have received the compensation due to them under Odimwa. Instead, the statutory system has largely collapsed under the weight of increasing administrative incapacity, 'leaving thousands of sick and injured workers in the lurch', as Mr Spoor has pointed out.[174]

The Odimwa fund currently contains some R3.7bn, which is the sum of the levies (at R8 per miner per underground shift) that mining companies have paid into it over many years. 'That money is sufficient to

cover all those who have silicosis', says Mr Briggs. 'One of the biggest issues,' he adds, 'is that the compensation due [under Odimwa] has not been paid... That R3.7bn is enough to pay the silicosis sufferers. If you look at the mines, every mine has a fee of around R8 per shift per employee. That fee is for compensating the people who get silicosis. It is a fund that is held by the government.'[175]

Though the statutory system is outside their control, mining companies have put great effort over many years into making Odimwa work. They have also spent major sums in trying to track and trace its intended beneficiaries, but this too has been difficult to achieve. 'Finding the miners is complicated,' states Mr Briggs. 'If you go back many years ago, miners were contractors. So they used to work on contract for a year and go back to Lesotho, Mozambique, or the Eastern Cape. When they come back, the company has been bought or the mine has closed. Imagine unravelling all of those employee records.' [176]

Both Mr Spoor and fellow attorney Mr Kiewitz have also put great efforts into tracking down mineworkers who might want to participate in the class action. As the *Financial Mail* reports, the two have 'spent years going from village to village in former labour-sending areas such as the Eastern Cape, Free State, KwaZulu-Natal, Lesotho, Botswana, Swaziland and Mozambique'. They have traced some 30 000 potential claimants, but the x-ray machines and expertise needed for accurate diagnosis of silicosis and pulmonary TB are generally lacking in these remote areas.[177] Claimants tracked down in this way do, however, have some prospect of obtaining compensation: particularly if the class action is settled and the relevant diagnoses can be confirmed.

> *If the class action succeeds, the legal firms which have helped to bring it (Richard Spoor Inc and Abraham Kiewitz) will be entitled to contingency fees amounting to 25% of the total sum awarded or obtained by each mineworker, which is the maximum the Contingency Fees Act of 1997 allows. All the claimants will thus receive 75% of the amounts due to them.*

If the class action succeeds, the legal firms which have helped to bring it (Richard Spoor Inc and Abraham Kiewitz) will be entitled to contingency fees amounting to 25% of the total sum awarded or obtained by each mineworker, which is the maximum the Contingency Fees Act of 1997 allows. All the claimants, as the Johannesburg high court has stressed, will thus receive 75% of the amounts due to them.[178] If these contingency fees become payable, this will help compensate the two law firms (and the US lawyers whose expert guidance they have sought) for the considerable expenses they will have incurred in pursuing the class action.

However, in a recent parliamentary briefing on the *Nkala* case and the status of the Odimwa fund, some MPs queried whether the lawyers acting in the class action might perhaps be seeking to 'mine the miners'. In response, Dr Kistnasamy noted that Odimwa limits the fee that may be paid to any person who helps a mineworker obtain compensation under the statute to 0.5% of the benefit obtained.[179] But the *Nkala* case is different, of course, as it involves civil claims in delict against the gold mines, rather than the pursuit of statutory compensation under Odimwa.

The Sasol case

Following on from the Johannesburg high court ruling in the *Nkala* case, Mr Spoor plans to bring a similar class action on behalf of 22 former coal miners who have contracted occupational lung diseases (coal workers' pneumoconiosis, or black lung disease, and chronic obstructive pulmonary disease). These diseases are similar to silicosis. They commonly also take ten years to develop and continue to progress after exposure has stopped. The case is being brought against Sasol because it owns the various collieries in Mpumalanga where the miners worked. The applicants argue that the coal dust to which they were exposed is a noxious substance which, if inhaled in significant quantities, causes lung disease.[180]

In its court papers, Sasol counters that it is impossible to mine coal without creating dust. However, it

has always tried to keep the dust at safe levels and has trained mineworkers to use protective measures underground. It may also seek to rely on the rules of prescription, under which civil claims expire after three years. It further questions what proof of disease the claimants have when none has yet been certified by the Medical Bureau for Occupational Diseases. Sasol has stressed, in short, that it will rely on all the defences available to it in law. If the claim succeeds, however, it will have major ramifications for other coal-mining companies.[181]

Finding the right policy balance

Health and safety challenges have long been acute in South Africa's often deep and dangerous mines. They have been a profound concern for both governments and mining companies for well over a century. To a large extent, and particularly in the last 20 years, they have also been successfully addressed by the mining industry through comprehensive research, sophisticated technology, and increasingly stringent health and safety protocols, backed by employee incentives and bonuses that seek to prioritise safety over production.

The industry has embraced 'zero harm' targets for both fatalities and new cases of silicosis, and these targets are coming closer to being met by 2020 and 2024, respectively. Deaths in deep mines, given seismicity and human error, will always be difficult to prevent. But mine fatalities (at an average of some 90 deaths a year since 2012) are not much greater than those in construction and far below the average of 13 500 deaths on the roads each year.

Policy and regulation have an important part to play in safeguarding lives and health. Mining companies have always had a common law duty to provide a reasonably safe working place. The MHSA reflects and repeats that obligation. But the statute also has various provisions which are overly broad and lend themselves to selective enforcement and even to abuse.

Policy and regulation have an important part to play in safeguarding lives and health. Mining companies have always had a common law duty to provide a reasonably safe working place. The MHSA reflects and repeats that obligation. But the statute also has various provisions which are overly broad and lend themselves to selective enforcement and even to abuse.

Safety stoppages under the MHSA offer an important way of protecting lives while potentially fatal risks are neutralised and overcome. But safety stoppages which are imposed for trifling reasons and are clearly disproportionate to the dangers in issue are an abuse of power. They also increase the risk of fatalities because the resumption of operations after a stoppage can help to trigger a seismic event.

The costs of safety stoppages are enormous too. Production is lost, fixed expenses (particularly the wages of workers) must be paid in any event, and ramping up production once again at the end of a stoppage is a slow and also costly process. So great are the overall costs that prolonged safety stoppages can push marginal mines from profit into loss. Hence, stoppages should be ordered by officials only where these are objectively required.

Yet some safety stoppages have clearly been imposed for trivial reasons. Such abuses must stop. The relevant wording in the MHSA should be tightened up to make sure that this occurs. Inspectors who order stoppages for no rational reason should be held personally liable for any legal costs incurred in court applications to have their instructions set aside. In particularly egregious instances, they should also be held personally responsible for at least some of the enormous costs of unnecessarily halting production.

As regards silicosis and pulmonary TB, every effort must be made, as the mining industry is already intent on doing, to reduce dust emissions and protect mineworkers. The government's key obligations are to support these initiatives, applaud all successes, and resort to penalties only where these are objectively required.

The government must also maintain (if necessary, via public-private partnerships) a statutory compensation system that provides adequate compensation and is highly efficient. Yet compensation under Odimwa is still based on a maximum monthly wage of R3 000. In practice, average monthly wages on the mines have risen far above this statutory maximum, reaching more than R20 000 from the start of 2016. The minister of health, with the concurrence of the finance minister, has the power to increase the statutory maximum by notice in the *Government Gazette*. He last exercised this power in 2009. He should long since have raised the monthly maximum and so improved the compensation payable to mineworkers afflicted with debilitating diseases.

Odimwa's benefits are also far below those obtainable under Coida. The calculation of compensation here is based on the employee's earnings at the start of the disease. This amount is also subject to a specified ceiling, but the Coida ceiling is currently set at some R377 100 a year, whereas the Odimwa wage ceiling remains at a paltry R36 000 a year. The compensation obtainable under Coida is thus significantly higher than that available under Odimwa. But this is no help to mineworkers, as Odimwa prevents them from claiming under Coida for occupational lung diseases covered by Odimwa.

The government has been planning since 1999 to amalgamate the two systems, so as to give mineworkers the benefit of Coida's higher amounts. But the compensation funds under both statutes are systems are in profound disarray – and these problems, says the state, need to be resolved before amalgamation can proceed.

Significant efforts have been made to reduce these backlogs, but progress has been slow and official data on payments made remains conflicting and confusing. The government's most urgent task is now to resolve those backlogs so that amalgamation can proceed. This will immediately raise the compensation that mineworkers can claim to the higher Coida amounts.

The Odimwa fund, despite strenuous efforts by the mining industry to make the system work, still has a backlog of some 94 000 claims (many dating back to 2000), which have been certified for payment but have yet to be paid out. It also has a much bigger backlog – of up to 700 000 claims – that still need to be assessed. The Compensation Fund in 2015 had a backlog of some 235 000 claims, some of them dating back at least ten years.

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In the interim, the government's failure to get Odimwa working has encouraged a number of civil claims against the gold mining sector, where silica dust has always been difficult to control. However, whereas compensation under Odimwa is payable irrespective of whether mining companies are at fault, any civil claim for damages can succeed only if the plaintiff can prove negligence and wrongfulness on the part of the defendant. This burden of proof is not easy to discharge.

Great effort and resources have been put into the *Nkala* case, which began in 2012 and is being brought with the help of Richard Spoor, Abraham Kiewitz, and the Legal Resources Centre. In 2016, as earlier noted, the Johannesburg high court certified this class action, which 62 mineworkers are seeking to bring against 32 mining companies and the 82 mines under their control.

However, the high court judgment is deeply flawed. The great strength of a class action is normally that 'it allows for a single finding on the issues, which finding binds all the plaintiffs and all the defendants'. In the *Nkala* case, however, there is no single class of plaintiffs, a plethora of defendants with differing records on dust control, and no prospect of a single judgment that will be binding on all.

Instead, once the supposedly common questions of fact and law have been decided against the mining companies in the first stage of 'a bifurcated process', the second stage of the class action will begin. At this juncture, each claimant will be paired with the particular company for which he worked and will have to prove its negligent and wrongful conduct towards him.

What might initially seem like a single – and perhaps relatively simple – class action will soon fragment into 50 000 (or more) individual claims, each of which will need to be proved and adjudicated on its own particular facts.

The high court's *Nkala* ruling has raised great hopes of a quick and easy resolution to the plight of thousands of people. However, if the class action proceeds to trial, those hopes are likely to be dashed. It is unlikely, of course, that a trial will ensue, as mining companies will want to avoid the reputational damage such litigation is sure to generate. A settlement is being sought and is thus likely to be reached. Yet any settlement of this kind is likely to provide the catalyst for many other class actions, which may also have to be settled to avoid adverse publicity.

Who knows where this process could end? What is clear, however, is that the mining industry in South Africa is already in significant financial difficulty. Commodity prices remain constrained; input costs are going up (electricity alone by 19.9% in 2018 if Eskom has its way); proposed amendments to the MPRDA could yet impose both price and export controls on a host of minerals; and the 2017 mining charter, if implemented in its current form, will so erode the security of mining rights as to make the industry 'uninvestable'. Already, thus, major potential investors are turning away from South Africa to other countries where the government is less hostile and mining legislation is more stable, competitive, and certain.

In the Nkala *case, however, there is no single class of plaintiffs, a plethora of defendants with differing records on dust control, and no prospect of a single judgment that will be binding on all. Instead, what might initially seem like a single – and perhaps relatively simple – class action will soon fragment into 50 000 (or more) individual claims, each of which will need to be proved and adjudicated on its own particular facts.*

Protecting health and safety in South Africa's deep and often dangerous mines is vital. But policies and laws must strike the right balance. The government should recognise and applaud all that the mining industry has done to reduce fatalities and diminish dust. DMR inspectors should not be allowed to order safety stoppages for trifling reasons, or otherwise abuse their regulatory powers. The government, with private sector help, should maintain an adequate and efficient statutory compensation system for those who contract silicosis and other debilitating diseases underground. And class actions should be certified only where the core requirements for such litigation, as set out by the Supreme Court of Appeal, have very clearly been met.

The legacy issues that have tainted the mining industry and eroded trust need also to be acknowledged. But a constant focus on the evils of the past will deter fresh investment and make it harder still for the industry to survive and thrive.

Bernard Swanepoel, a former CEO of Harmony Gold, says that 100 years of exploitative labour practices are part of the industry's problem, along with acid mine drainage and often 'inexcusably high remuneration' for executives. But he also says: 'If we are continuously going to look at the past, at what went wrong, we'll kill the industry. Because if you want today's investors to pay for all sins of the past, they are not going to do that. They are going to run away. And you are going to have no funding and you are not going to build the next generation of mines.'

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THE *NKALA* JUDGMENT: WEAKNESSES IN THE HIGH COURT RULING

The Nkala case and its significance

As noted in the main article, the *Nkala* case (named after the first applicant, Bongani Nkala), began in 2012, soon after the *Mankayi* ruling had opened the way for it. It is being brought with the help of Richard Spoor Inc, Abraham Kiewitz, and the Legal Resources Centre. Here, the 69 applicants are seeking to bring a class action against 32 gold mining companies as regards the 82 gold mines under their control. The aim of these 69 people is to claim compensation on behalf of all the current and former mineworkers (or their heirs) who have contracted silicosis or pulmonary TB while working underground at these 82 mines. As the first step in a much longer process, the applicants applied to the Johannesburg high court for an order certifying or authorising the bringing of the class action.[1]

A class action allows one or more plaintiffs to bring a lawsuit on behalf of a wider group or 'class' of people who are similarly situated. Its great advantage is that it 'allows for a single finding on the issues, which binds all the plaintiffs and all the defendants'.[2] In May 2016 the high court ruled that all the requirements for the certification of the class action had been met. This ruling has paved the way for the class action to proceed. Those eligible to join in the action include current mineworkers suffering from the diseases in issue, former mineworkers dating back to 1965, and the dependants of mineworkers who have already died. According to the court, the number of people eligible to participate in the class action could range from 17 000 to 500 000.[3]

> *The* Nkala *judgment handed down by the Johannesburg high court in May 2016 has been widely hailed by commentators. However, there are many weak elements in the ruling, which will make the class action all the more difficult to manage when it comes to trial.*

The judgment has been widely hailed by commentators. However, there are many weak elements in the ruling, which will make the class action all the more difficult to manage when it comes to trial. It is doubtful too whether the trial court will be able to provide 'a single finding on the issues, which binds all the plaintiffs and all the defendants'. Yet this is what a class action is supposed to achieve.

As noted in the main article, nine aspects of the judgment are particularly noteworthy. For ease of reference, these nine points are repeated below, while what the court said on each one of these issues is then further described. A brief assessment of the weaknesses in the judgment follows thereafter.

Summary of the most noteworthy elements in the ruling

As noted on pages 51-52 of the main article, there are nine particularly noteworthy aspects to the *Nkala* judgment. Here, the court ruled that:

1 the overall consolidated class should be divided into two sub-classes, a silicosis sub-class and a TB sub-class, as those suffering from TB would not necessarily have contracted it be-

cause of silica dust and the issues for decision would be different as between the two groups;

2 a 'bifurcated' or two-stage process would be used, in which the issues common to both classes would be decided in the first stage, while the issues relevant to each sub-class would be considered in the second;

3 in the first stage, the common questions of fact would revolve around the extent to which mineworkers had been exposed to silica dust, while the common questions of law would examine whether all the mining companies had breached their legal obligations to the mineworkers;

4 in the second stage, once the common questions of fact and law had been decided (and presuming that these decisions went against the mining companies), the requirements for liability in delict would have to be met. Since such liability depends on the wrongdoing of the particular defendant, mineworkers would have to show that their particular employers had acted wrongfully and negligently towards them;

5 in this bifurcated process, potential claimants would have the benefits of 'opting-out' and later 'opting-in'. This would allow them to opt out of participating in the class action in the initial stage, which would protect them from any adverse findings by the trial court on the common questions of fact and law. In the second stage, once these common issues had been decided against the mining houses, mineworkers would be allowed to 'opt in', so that their individual claims against particular mining houses could then be considered and decided;

The requirements for liability in delict will have to be met. Since such liability depends on the wrongdoing of the particular defendant, mineworkers will have to show that their particular employers had acted wrongfully and negligently towards them.

6 the class action was indeed the most appropriate way to proceed, as impoverished and ill mineworkers would otherwise find it difficult to advance their claims against the mining companies;

7 the common law should be developed to allow claims for general damages (for the pain and suffering that individual mineworkers had endured) to be transmitted to their heirs from the date the application for certification had been lodged. Hence, if some of the mineworkers died after this date but before the pleadings had closed (ie, before the plaintiff's opportunity to reply to the defendant's plea had expired), then their wives and children would still be able to claim these additional damages from the mining companies;

8 Two of the three judges ruled that the common law should be still further developed, so as to make claims for general damages for pain and suffering transmissible to the heirs of all plaintiffs, from the time their court actions had been lodged. However, one judge dissented on this last point, preferring to confine the transmissibility of claims for general damages to class actions alone and to rule that transmissibility should apply from the date the application for certification is initiated.

Further analysis of these noteworthy elements

1 A single class action with two sub-classes

The mineworkers who were claiming compensation for silicosis, said the court, could rely on the indisputable fact that silica dust is the only cause of silicosis. However, those claiming compensation for pulmonary TB were in a different situation, because silica dust does not in itself cause active TB.

It increases the risk of active TB, but so too do other factors (including tobacco smoking, HIV/AIDS infection, and cramped living conditions).[4]

The mining companies argued that 'mineworkers would have great difficulty in proving with certainty that they contracted TB as a result of their exposure to silica dust'. This meant that there was no single 'triable issue' as between those claiming for silicosis and those claiming for TB.[5] But the court rejected this, saying the mining companies did not dispute the fact that exposure to silica dust increased the risk of developing TB. The issue of 'unlawful exposure to excessive levels of silica dust' was thus common to both sets of claimants. Said the court: 'It is this that inseparably conjoins the two classes and allows for a single class action.' It thus mattered little that, 'once these common issues had been dispensed with, the cases of the two classes might diverge'.[6]

The court thus ruled that there should be 'a single class action' encompassing 'two distinct and separate classes'. The first would comprise those suffering from silicosis (or their dependants), provided they had worked underground on one or more of the defendant gold mines after March 1965 and had not already lodged similar claims. The second would comprise those who had contracted pulmonary TB, and had worked underground for at least two years after March 1965 on one of more of the relevant gold mines.[7]

The court thus ruled that there should be 'a single class action' encompassing 'two distinct and separate classes'. The first would comprise those suffering from silicosis (or their dependants). The second would comprise those who had contracted pulmonary TB and had worked underground for at least two years after March 1965.

(The cut-off point of March 1965 was chosen by the applicants, because it coincided with the coming into force of a new regulatory regime under the Mines and Works Act of 1956. The mining companies argued that the 50-year period in issue should be shortened, as 'an overbroad definition would produce significant problems of manageability for the trial court'. However, the high court disagreed, saying that to 'truncate the time period' would be to risk 'disqualifying many mineworkers...from the class action'.)[8]

2 A 'bifurcated' process

The court also ruled that a 'bifurcated' or two-stage process would be used, in which the issues common to both classes would first be determined, while the issues relevant to each sub-class would thereafter be considered.

In the first stage, the mineworkers would need to show that all the mining companies owed a duty of care to their underground workers, which obliged them to take 'reasonable measures to provide a safe and healthy work environment'. Instead, they had all exposed their employees to 'excessive levels of harmful silica dust'.[9]

The first stage would thus canvass the common questions of fact and law that were in issue in all the mineworkers' claims. If the trial court ruled in the mineworkers' favour on these issues, then the class action would proceed to the second stage. In this second stage, each class member would have to prove the damages that he had suffered through the fault of a particular company (as further described below).[10]

3 Common questions of fact and law

The court acknowledged that class actions normally require 'the same claim against a single defend-

ant arising from a single wrong committed by that defendant', whereas the *Nkala* case was being pursued against 32 companies, each with different working conditions on the 82 mines in issue. The case nevertheless qualified for certification, because all the mineworkers had essentially the same claim against the mining houses 'simultaneously'. In addition, their claims were attributable to a single cause: their exposure to silica dust.[11]

In the first stage, the court went on, the mineworkers would start by focusing on the common questions of fact. Here, the mineworkers planned to show that the mining companies had failed to 'prevent or minimise the escape of dust into the air breathed by the mineworkers by introducing appropriate engineering controls'. They had failed to use 'proper ventilation systems to evacuate the contaminated dust' from the very restricted spaces in which people were required to work. They had also failed to provide mineworkers with suitable protective equipment, or to monitor the effects of the contaminated dust. The mineworkers thus planned to argue that 'the mining companies' negligence was not a once-off single event or incident. It was an unlawful practice that was on-going, relentless, intense, profound in its impact,...and industrial in scale'.[12]

The mineworkers thus planned to argue that 'the mining companies' negligence was not a once-off single event or incident. It was an unlawful practice that was on-going, relentless, intense, profound in its impact,... and industrial in scale'.

The mineworkers also planned to argue that the mining companies, through their participation in the Chamber of Mines, had acted in concert on various issues. This was why 'dust levels in all the mines had remained roughly the same over a period of 50 years'. In addition, the companies had disregarded the reports of various commissions of inquiry into silicosis, along with scientific literature confirming that the disease could be prevented through effective engineering controls and good work practices. They had also disregarded studies showing that active TB was more likely to develop in mineworkers who were exposed to silica dust, or subjected to the overcrowded and unsanitary conditions in which many migrant workers were compelled to live. At the same time, they had used the migrant labour system to 'externalise the cost' of disease, so reducing any financial incentive on them to control dust more effectively.[13]

As evidence of these common facts, said the court, the 69 applicants had all submitted individual affidavits describing the conditions in which they had worked. The high court cited the contents of three of these affidavits to illustrate what the mineworkers had said. The first of these three was the (untested) affidavit of Bongani Nkala, the first applicant in the case, which the court described as a 'factual narration...common to many of the affidavits'.[14]

Mr Nkala stated that, when he worked underground in the mines, silica dust was regularly released by activities such as drilling, blasting, and crushing ore; that dust levels were supposedly controlled by spraying the walls with water but this was ineffective; that there was no ventilation system to disperse the dust or breathing apparatus to protect people from it; and that 'lots of dust would settle on his equipment', as well as on his 'hair, face, and clothes'. He left the mine in 1997 and was diagnosed with silicosis in 2012.[15]

A second affidavit, deposed by Bangumuzi Bennet Balakazi, spoke of the overcrowding and lack of privacy in the mine hostel where he lived. According to Mr Balakazi, the training provided to him dealt only with how to prevent rock falls and said nothing about dust. Though he was given a mask to wear, the heat made it impractical to wear masks all the time. The mask also became so dusty over time that he could not breathe through it in any event. Water was sprayed after blasting to help

control the dust, but it made little difference. 'The white miners only returned to the blast area after most of the dust had settled', but the black miners were expected to return to the blast area 'almost immediately'. At the end of their shifts, their clothes and bodies would be full of dust, which then 'created further dust in the dormitories'. In time, Mr Balakazi was found to have contracted both silicosis and TB.[16]

The affidavit of another mineworker, Watu Livingstone Dala, made many of the same points, often in much the same wording. There was often so much dust, said Mr Dala, that 'you could barely see in front of you. The dust was also suffocating and got stuck in our noses and ears. Though water was used to keep the mine surface wet, it did little to minimise the levels of dust. Mine ventilation also did not do much to reduce the dust'. Moreover, mine management had instructed him to wear his mask solely when safety representatives were present. Mineworkers had to 'work like slaves' and were regularly kicked and assaulted. In time, Mr Dala was found to have both silicosis and TB and received compensation totalling some R65 000.[17]

Said the court in response: 'The evidence concerning their working conditions is similar or almost identical in all the affidavits deposed to by the individual mineworkers represented by Spoor and Abrahams. The averments in all the affidavits...divulge the same or similar Victorian-era like working conditions, regardless of which mine the deponent worked for and during which period he worked there...With remarkable consistency, their evidence reveals that the mining companies stripped them of their dignity, and concomitantly compromised their health and safety, with such intensity and ferocity that they were effectively dehumanised.'[18]

The averments in all the affidavits...divulge the same or similar Victorian-era like working conditions. With remarkable consistency, their evidence reveals that the mining companies stripped them of their dignity, and concomitantly compromised their health and safety, with such intensity and ferocity that they were effectively dehumanised.

Once these common issues of fact had been heard, the court went on, the mineworkers would need to establish the common questions of law. Among these was the question whether 'the legal convictions of the community' would justify 'imposing' delictual liability on the mining companies for 'failing to prevent the growth and spread of silicosis and TB'. Other common legal questions to be resolved were:[19]

- the appropriate test for causation (perhaps '*res ipsa loquitur*', Latin for 'the thing speaks for itself');
- whether breaches of relevant health and safety statutes would provide grounds for imposing strict liability on the mining companies; and
- whether 'the breach of one or more of the constitutional rights' guaranteed by the 1996 Constitution would 'automatically give cause for a delictual action'.

These questions of law were 'applicable to the case of each and every mineworker' and would have 'a final and determinative effect' on all their claims.[20] This was another reason why the certification of the class action should be granted.

This description of the common questions of law to be decided is inconsistent with other aspects of the judgment. Earlier, the court had noted that the mineworkers were claiming in delict and would thus, in the second stage of the bifurcated process, have to prove wrongful and negligent conduct

on the part of each mining company. By contrast, the common questions of law it now framed seemed to be aimed at holding the mining companies 'strictly' liable, irrespective of their individual fault. Later, however, in yet another about-turn, the judgment again stressed that mineworkers would have to prove all the usual requirements for delictual liability in order to succeed.[21]

4 Assessment of liability in the second stage

Once the second stage was reached, the claimants would have to provide medical proof that they belonged either to the silicosis or to the TB sub-class. In the first stage, the court explained, any mineworker who seemed to fall within the class (even if he lacked medical confirmation that he had silicosis or pulmonary TB) would be considered to be part of the litigation unless he opted out (as further described below). In the second stage, however, every individual mineworker who wished to claim would have to produce proper evidence that he had indeed contracted silicosis or pulmonary TB and thus belonged to one or other sub-class.[22]

The second stage would also focus on 'scrutinising and determining' the 'individual culpabilities' of the different mining companies'.[23] The mining companies could not be held 'jointly liable' for the harm suffered by the mineworkers, because the law of delict makes it clear that 'a defendant can only be held liable for his own delict and not that of another defendant'. Hence, 'the liability of each mining company would be determined at the second stage, when all the mineworkers and all the dependants of deceased mineworkers had staked their claims. At that stage, these claims would be paired against the respective mining company(ies) alleged to have committed the delict [and] each mining company would be held responsible for its own actions or unlawful omissions.'[24]

> *The mining companies could not be held 'jointly liable' for the harm suffered by the mineworkers, because the law of delict makes it clear that 'a defendant can only be held liable for his own delict and not that of another defendant'. At the second stage, claims would be paired against the respective mining company and each mining company would be held responsible for its own actions.*

5 An opportunity to opt-out and later to opt-in

The court noted that the mineworkers wanted the class action to proceed in two phases: 'the first would be an opt-out stage and the second an opt-in one'. During the first stage, potential claimants would be able to opt out, and would then not be bound by any adverse findings by the trial court on the common issues of fact and law. However, if the findings on these common questions were favourable to the mineworkers, then 'the opt-in phase would take effect'. During this opt-in phase, the individual miner could still decline to be part of the class action if he thought he might fare better by proceeding on his own.[25]

The court endorsed this proposal, while going on to explain how the opt-out and opt-in procedures would work. At the start, a notice would be sent to all 'putative members of the class and would give each of them an opportunity to opt-out' within a specified period. As a result, 'any mineworker who did not opt-out would be bound by the findings made by the court during the first stage'.[26]

If the mineworkers were 'blessed with any success in the first stage, they would then issue a second notice informing the mineworkers of the outcome of the first stage and would offer each of them an opportunity to opt-in to the class action', again within a specified time. 'At the end of this period, the total number of class members would be revealed', while those who chose not to opt-in would still be able to pursue their own claims. Said the court: 'The obvious attraction of this double-

barrelled approach is that it ensures that the individual mineworkers are afforded the widest possible choice.' This would also 'serve the interests of justice', it said.[27]

The mining companies' objections to this approach were downplayed and brushed aside. So too was the earlier statement by the court that the key rationale for a class action is that 'it allows for a single finding on the issues, which finding binds all the plaintiffs and all the defendants'.[28] Allowing potential plaintiffs to opt out and later to opt in fundamentally contradicts this core principle.

6 A class action the most appropriate way to proceed

The mining companies argued that class actions are usually allowed where many people have the same claim against a single defendant, arising from a single wrong committed by that defendant. Here, 32 companies were being sued, while the working conditions at their 82 mines not only varied from one another but had also changed at different times over the 50-year period in issue. This would make it difficult to decide all the relevant factual and legal questions in the way a single class action would normally do. It would also make the class action unwieldy and unmanageable. It might also prejudice some mineworkers, whose claims against particular companies might be stronger than those of others within the broad class.[29]

The mineworkers countered that, if a class action was not allowed, then each of the claimants would have to present essentially the same evidence before the courts, while the mining companies would also have to defend themselves each time. By contrast, a class action would allow all the relevant evidence to be presented and disputed in a single proceeding. The court agreed, adding that a class action would 'enhance judicial economy'. It would also safeguard 'judicial integrity' by excluding the risk that different courts might come to conflicting decisions on the same evidence.[30]

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The mineworkers also argued that, if the class action was not allowed to proceed, they would have no alternative remedy. 'They were poor, lacked the sophistication necessary to litigate individually, had no access to legal representatives, and were continually battling the effects of two extremely debilitating diseases.' The court agreed, saying the mineworkers had already 'made out a prima facie case', but would nevertheless be deprived of their right of access to court if they were left to sue individually. They would then have 'no remedy for the pain and suffering [they had] endured while battling the growth of fibrotic forests in their ever depleting lungs'.[31]

7 Transmissibility of the mineworkers' claims for general damages

Under the common law, when an individual has a claim in delict for patrimonial or financial loss (for medical or funeral expenses resulting from the negligence of another person, for instance), the claim may be transmitted to his heirs, who may still demand the payment of these expenses after the individual has died. By contrast, a claim for general damages is a claim for compensation for the pain and suffering the individual has endured – and this claim generally dies together with the individual and cannot be transmitted to his heirs.

However, as an exception to this general rule, the common law has long allowed a claim for general damages to be transmitted to the individual's heirs if, by the time of his death, a civil claim for

compensation against the alleged wrongdoer has been lodged and the pleadings in the case have closed. (In South African law, pleadings are normally considered closed when the period for filing a replication – the plaintiff's reply to the defendant's plea – has expired. Alternatively, the parties may agree that the pleadings are closed or 'the court, on application, may declare that the pleadings are closed'.)[32]

In the *Nkala* case, the mineworkers feared that some potential claimants might die before the pleadings in the case had closed, which would not happen for some time given the complexity of the litigation. In this situation, their dependants would no longer be able to claim general damages for the pain and suffering the deceased had endured. Instead, their dependants would be confined to claiming for medical expenses, funeral expenses, and loss of support. The mineworkers argued that this limitation would cause 'immense injustice to them and their heirs'. To avoid this, they asked the court to 'develop' the common law so that their claims for general damages would be transmissible from the time the certification application had been launched. The mining companies opposed this.[33]

In considering this issue, the court noted that some judicial development of the common law to take account of changing times and circumstances has always been allowed. In addition, South Africa's Constitution now encourages the courts to develop the common law so as to promote 'the spirit, purport, and objects of the Bill of Rights'. The mineworkers argued that the existing common law rule violated many of their guaranteed rights, including their rights to equality, human dignity, and access to court. 'As the common law presently stood, it unjustifiably took away from them their right' to see their dependants 'receive the benefit of the compensation they...would themselves have received but for their premature deaths'. The rights of their children would also be compromised, whereas the Constitution states that the 'best interests' of children must always be 'of paramount importance'.[34]

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The court stated that other countries, including Australia and the United States, had adopted legislation providing for the transmission of general damages before the closure of pleadings. South Africa's common law rule thus 'failed to reflect the *boni mores* [high ethical standards] of a modern society organised along the principle of the rule of law'. In the mineworkers' case, it also gave unfair advantage to the mining companies, who were 'the only ones to benefit...and [did so] at the expense of deceased mineworkers and their dependants'.[35]

Said the court: 'There is no doubt...a huge injustice would result if the general damages that would have been due the now deceased class member are denied simply because he succumbed to his disease before his case has reached the stage [of pleadings having closed]... The mining companies [will] secure a benefit from the very harm they caused the deceased class member, [while] the loss of the general damages...will be borne by his widow and children,...[who are] the indigent, the weak, and the vulnerable in our society.' The need to develop the common law to allow what the mineworkers sought was thus clear.[36]

9 Overall transmissibility of claims for general damages

Having decided that the mineworkers' claims for general damages should indeed be transmissible, two of the three judges added that the change should not be confined to plaintiffs in class actions. This would be unfair to other people, who would be denied the benefits of 'the new modern law on

the transmissibility of general damages' prior to the close of pleadings. Such an outcome would contradict the equality clause and would not be in keeping with 'the spirit, purport, and objects' of the Constitution.[37]

The majority judgment thus laid down a new principle of law, saying that plaintiffs who had already 'commenced suing for general damages' would be able to pursue their claims even if they died before the close of pleadings, while any general damages awarded would go to their estates. In the *Nkala* case, however, the mineworkers were prohibited from suing for such damages until their proposed class action had been certified. In fairness to them, their claims for general damages should thus be transmissible from 'the date when the certification application was launched'.[38]

(How this new rule would be applied to potential plaintiffs who opted out of the first stage of the class action, and opted in only at the second stage, was not explained. Presumably, however, any plaintiff who decided to join in the proceedings at the second stage would have the benefit of it.)

One judge dissented from the majority ruling on a single issue only: the transmissibility of general damages before the closure of pleadings. The new rule laid down by the majority would have 'far-reaching implications'. The mineworkers had wanted a new rule that would apply only to class actions. However, the court had gone significantly further than this – and without the benefit of argument or research on the issue. The implications would be considerable, particularly as regards road accidents, which were one of the leading causes of death in the country. The economic viability of the Road Accident Fund might also be affected.[39]

One judge dissented from the majority ruling on a single issue only: the transmissibility of general damages before the closure of pleadings. The implications would be considerable, particularly as regards road accidents and the economic viability of the Road Accident Fund.

The US and Australian statutes to which the majority judgment had referred generally excluded the transmissibility of general damages for pain and suffering (though Australia allowed transmission in the case of deaths resulted from dust-related diseases). Moreover, the court had not had 'the benefit of a complete comparative analysis' of the relevant rules in other countries.[40]

In addition, the power of South Africa's courts to develop the common law was best 'exercised in an incremental fashion' and solely 'as required by the facts of each particular case'. In this instance, 'the facts were sufficient to justify the development of the common law in relation to class action proceedings'. General damages should be transmissible, as the majority judgment had ruled, from the date the certification application had been lodged. However, it was neither relevant nor necessary to deal with 'the transmissibility of general damages in all actions generally'.[41]

Weaknesses in the judgment

The weaknesses in the high court's decision to certify the *Nkala* class action are legion. A class action is normally brought on behalf of a single class of claimants, but here two classes of claimants have had to be recognised because each class will have to prove a different set of facts.

A class action normally involves 'the same claim against a single defendant arising from a single wrong committed by that defendant'. But the *Nkala* case involves 32 defendants and 82 mines, each of which at different times used different means – with differing degrees of efficiency – to guard against dust and disease.

The great strength of a class action is that it 'it allows for a single finding on the issues, which finding binds all the plaintiffs and all the defendants'. But here many of the plaintiffs will be able to

escape that single finding by opting out of the proceedings in the first stage (while the supposedly common questions of fact and law are decided) and only thereafter opting in.

This 'double-barrelled' approach will indeed give maximum choice to the plaintiffs, but it goes against the principles on which class actions are based. It also contradicts the established jurisprudence, under which plaintiffs in class actions have a single choice to make and must then stick to the option they have chosen. They may opt-out of the class action (as in the United States) if they think this will serve them better, or they may opt-in to the class action (as in the United Kingdom), if that is their preference.[42] Either way, plaintiffs in these jurisdictions must then keep to the choice they have made. They cannot opt out at one stage of the class action and then opt in at another.

A class action normally advances 'judicial economy' by allowing all the relevant evidence against a single defendant to be presented at one time, while giving the defendant the opportunity to rebut all these allegations at the same time. But here once the (supposedly) common questions of fact and law have been decided, each mineworker's claim for damages must be paired against the company for which he worked, so that the particular company's liability for delict can then be evaluated and decided.

There will be no 'judicial economy' in this approach. If 50 000 plaintiffs decide to opt in at the second stage, their individual claims against the particular companies for which they worked will have to be individually heard and adjudicated. Very much the same evidence will have to be presented against each defendant to prove that the company in question acted negligently and wrongfully towards that particular plaintiff. On this basis, what amounts to 50 000 individual claims will need to be argued and decided – and the proceedings could easily drag on for five to ten years.

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'Judicial integrity' could also be at risk, for each plaintiff's case will be slightly (or substantially) different. Hence, perceptions may easily arise that the trial court has decided inconsistently as between one plaintiff and another.

What all these points confirm, in a nutshell, is that the *Nkala* class action should never have been certified. There are too many plaintiffs with divergent claims and too many defendants with differing defences. A class action might at first glance seem to offer a short-cut way to proceed, but this is an illusion. The supposedly common questions of fact and law may also be relatively quickly decided in favour of the plaintiffs – but what is to happen thereafter?

As the high court ruled, the mining companies cannot be held 'jointly liable' in delict. In the second stage, each plaintiff will have to prove the liability in delict of the particular company for which he worked. If he worked for more than one company, complicated factual and legal questions as to which of them is to be held liable are sure to arise.

What might initially seem like a single – and perhaps relatively simple – class action will soon fragment into 50 000 (or more) individual claims, each of which will need to be proved and adjudicated on its own particular facts. That plaintiffs will be allowed to opt in at the start of this second phase will further lengthen the process, as many more people may be encouraged to join the class action at that point.

How much practical help will the class action thus provide to mineworkers suffering from silicosis

or TB (or their heirs)? Would it not have been preferable if all endeavours had instead been geared towards solving the problems in the statutory compensation system, Odimwa, and making sure this works as it should?

Under Odimwa, mineworkers do not need to prove that mining companies acted negligently and wrongfully towards them. All that has to be confirmed is the claimant's silicosis or TB diagnosis. In the class action, the relevant diagnosis, of course, has to be proved – but so too do all the requirements for liability in delict against each and every defendant.

In addition, it now seems doubtful whether the compensation payable to successful plaintiffs in the class action will be any greater than the R105 000 to which they are entitled under Odimwa. Moreover, if the government had earlier revised the maximum amounts obtainable under Odimwa, as it could and should have done, then larger and more appropriate sums would be available to claimants now.

There are several other weaknesses and inconsistencies in the *Nkala* judgment. The suffering of so many sick mineworkers has long been pitiable – and millions of South Africans no doubt feel great sympathy for their plight. But a court should not wear its heart on its sleeve if public confidence in the independence of the judiciary is to be maintained.

The affidavits cited in the judgment have not been tested in any way. Yet the court's emotive response was to see these statements as incontrovertible proof that all 32 mining companies had deliberately 'compromised the health and safety' of their mineworkers, with 'such intensity and ferocity that they were effectively dehumanised'. Such condemnation should have been reserved until the time when all the relevant facts had been heard.

At various points, the court rightly stressed that delictual liability is based on individual wrongdoing. Later, however, it seemed to be querying whether strict liability should not be imposed on the companies for their 'failure to prevent the growth and spread of silicosis and TB'.

The court's description of the common issues of law to be decided is also fraught with contradiction. At various points, the court rightly stressed that delictual liability is based on individual wrongdoing – and that the fault of each mining company will thus have to be proved. However, against the background of the applicants' affidavits, the court seemed to lose sight of the relevant law. Effectively, it seemed to be querying whether strict liability should not be imposed on the companies for their 'failure to prevent the growth and spread of silicosis and TB'.

All 32 mining companies – irrespective of what they might individually have done to guard against silicosis and TB – have now been tarred with the same brush. However, courts should take care to avoid the unwarranted reputational damage that can easily arise from apparent judicial endorsement of assertions that have still to be substantiated and fully assessed.

These weaknesses are worrying. However, they pale into insignificance beside the fact that tens of thousands of mineworkers have been encouraged to believe that the class action offers them a quick and effective way to prove their claims and obtain the compensation they are due. In reality, the court case will soon fragment into thousands of individual claims, all needing individually to be proved. This will be neither easy nor quick.

Most mining companies are concerned about the plight of the mineworkers and anxious to avoid the further reputational damage the class action is likely to unleash. Some of them have already appealed against the high court ruling to the Supreme Court of Appeal, which will hear the matter in

March 2018. But many mining companies want simply to settle – and are already in negotiations with lawyers and other stakeholders. However, a settlement is far from guaranteed. In addition, some companies may feel reluctant to accept the reputational damage that has already arisen and the further harmful insinuations an out-of-court settlement is sure to stimulate.

If some or all of the mining companies decide not to settle after all and the matter goes to trial, it will soon become apparent how little either the class action approach – or the certification judgment allowing it – have in fact helped the people most in need of a just and speedy solution.

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